2023 Uranium Marketing Annual Report

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Contacts

EIA's Electricity, Renewables, Coal & Nuclear Data Team prepared this report. If you have questions about this report, email us.

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Introduction

In this report, EIA provides detailed data on uranium marketing activities in the United States from 2018 through 2023 and summary data back to 2002.

Data in this report are based on information reported on Form EIA-858, *Uranium Marketing Annual Survey*. Form EIA-858 survey collects data on contracts, deliveries (during the report year and projected for the next 10 years), enrichment services purchased, inventories, use in fuel assemblies, feed deliveries to enrichers (during the report year and projected for the next 10 years), and unfilled market requirements for the next 10 years.

Previous editions of this report are available on our website.

Definitions for terms in this report are available in our Energy Glossary.

Uranium purchases and prices

Owners and operators of U.S. civilian nuclear power reactors (civilian owner/operators, or COOs) purchased a total of 51.6 million pounds U_3O_8e (equivalent[1]) of deliveries from U.S. suppliers and foreign suppliers during 2023, at a weighted-average price of $43.80 per pound U_3O_8e. The 2023 total of 51.6 million pounds U_3O_8e was 27% higher than the 2022 total of 40.5 million pounds U_3O_8e. The 2023 weighted-average price of $43.80 per pound U_3O_8e was 12% higher than the 2022 weighted-average price of $39.08 per pound U_3O_8e (Table 1) and the highest price since 2015.

The largest sources of uranium delivered in 2023 was of foreign-origin with Canada the top source at 27% of total deliveries, followed closely by Australia and Kazakhstan with 22% of total deliveries each. Russian-origin material accounted for 12% of total deliveries and Uzbekistan-origin material accounted for 10% of total deliveries. United States material accounted for 5% of total deliveries in 2023, the same percentage as 2022 (Table 3).

COOs purchased three material types of uranium for 2023 deliveries from 20 sellers (Table 4, Table 24). During 2023, 15% of the uranium delivered was purchased under spot contracts at a weighted-average price of $51.64 per pound. The remaining 85% was purchased under long-term contracts at a weighted-average price of $42.42 per pound (Table 7). Spot contracts are contracts with a one-time uranium delivery (usually) for the entire contract, and the delivery typically occurs within one year of contract execution (signed date). Long-term contracts are contracts with one or more uranium deliveries to occur at least a year following the contract execution (signed date) and as such may reflect some agreements of short and medium terms as well as longer term.

New and future uranium contracts

In 2023, COOs signed 26 new purchase contracts with deliveries in 2023 of 5.5 million pounds U_3O_8e at a weighted-average price of $61.93 per pound (Table 8).

COOs report minimum and maximum quantities of future deliveries under contract to allow for the option of either decreasing or increasing quantities. At the end of 2023, the maximum uranium deliveries for 2024 through 2033 under existing purchase contracts for COOs totaled 249 million pounds U_3O_8e (Table 10). Also at the end of 2023, unfilled uranium market requirements for 2024 through 2033 totaled 184 million pounds U_3O_8e (Table 11). These contracted deliveries and unfilled market requirements combined represent the maximum anticipated market requirements of 433 million pounds U_3O_8e over the next 10 years for COOs.

Uranium feed, enrichment services, uranium loaded

In 2023, COOs delivered 34 million pounds U_3O_8e of natural uranium feed to U.S. and foreign enrichers. U.S. enrichment suppliers received 39% of the feed, and the remaining 61% was delivered to foreign enrichment suppliers (Table 13). Fifteen million separative work units (SWU)[2] were purchased under

[1]Uranium quantities are expressed in the unit of measure U_3O_8e (equivalent). U_3O_8e is triuranium octoxide (or uranium concentrate) and the equivalent uranium-component of uranium hexafluoride (UF_6) and enriched uranium.

[2] Separative work unit (SWU): The standard measure of enrichment services. The effort expended in separating a mass F of feed of assay x_f into a mass P of product assay x_p and waste of mass W and assay x_w is expressed in terms of the number of

enrichment services contracts from eight sellers in 2023 (Table 16, Table 25). The average price paid by the COOs for the 15 million SWU was $106.97 per SWU in 2023, up 6% from the $101.03 per SWU paid in 2022. In 2023, the U.S.-origin SWU share was 28%, and the foreign-origin SWU accounted for the remaining 72%. Foreign-origin SWU included 27% from Russia, 12% from France, 8% from the Netherlands, 7% from the United Kingdom, and 6% from Germany (Table 16).

Uranium in fuel assemblies loaded into U.S. civilian nuclear power reactors during 2023 contained 43.9 million pounds U_3O_8e, slightly lower than the 44.4 million pounds loaded in 2022 (Table 18).

Uranium foreign purchases/sales and inventories

U.S. suppliers (brokers, converters, enrichers, fabricators, producers, and traders) and COOs purchase uranium each year from foreign suppliers. Together, foreign purchases totaled 32 million pounds U_3O_8e in 2023, and the weighted-average price was $41.88 per pound U_3O_8e (Table 19). U.S. suppliers and COOs also sold uranium to foreign suppliers. Together, foreign sales totaled 1.4 million pounds U_3O_8e in 2023, and the weighted-average price was $71.56 per pound U_3O_8e (Table 21).

Year-end commercial uranium inventories represent ownership of uranium in different stages of the nuclear fuel cycle (in-process for conversion, enrichment, or fabrication) at domestic or foreign nuclear fuel facilities. Total U.S. commercial inventories (including inventories owned by COOs, U.S. brokers, converters, enrichers, fabricators, producers, and traders) were 152 million pounds U_3O_8e at the end of 2023, a 6% increase from the 143.1 million pounds at the end of 2022. Commercial uranium inventories owned at the end of 2023 by COOs totaled 110 million pounds U_3O_8e, 7% higher than the 102.4 million pounds in inventories held at the end of 2022. Uranium inventories owned by U.S. suppliers (converters, enrichers, fabricators, producers, brokers and traders) totaled 42.1 million pounds U_3O_8e at the end of 2023, up 3% from 2022 year-end levels (Table 22).

separative work units needed, given by the expression $SWU = WV(x_w) + PV(x_p) - FV(x_f)$, where V(x) is the *value function*, defined as $V(x) = (1 - 2x)\ 1n((1 - x)/x)$.

Table S1a. Uranium purchased by owners and operators of U.S. civilian nuclear power reactors, 2002–2023

million pounds U_3O_8 equivalent

Delivery year	Total purchased	Purchased from U.S. producers	Purchased from U.S. brokers and traders	Purchased from other owners and operators of U.S. civilian nuclear power reactors, other U.S. suppliers, (and U.S. government for 2007) [1]	Purchased from foreign suppliers	U.S.-origin uranium	Foreign-origin uranium	Spot contracts [2]	Short, medium, and long-term contracts [3]
2002	**52.7**	1.5	13.4	5.7	32.2	**6.2**	**46.5**	**8.6**	**41.4**
2003	**56.6**	0.6	10.5	8.3	37.2	**10.2**	**46.4**	**8.2**	**46.7**
2004	**64.1**	0	13.2	12.2	38.7	**12.3**	**51.8**	**9.2**	**53.3**
2005	**65.7**	W	10.4	W	39.4	**11.0**	**54.7**	**6.9**	**58.8**
2006	**66.5**	0	13.9	12.6	40.0	**10.8**	**55.7**	**6.3**	**59.4**
2007	**51.0**	0	9.8	7.6	33.5	**4.0**	**47.0**	**6.6**	**43.7**
2008	**53.4**	0.6	9.4	6.3	37.2	**7.7**	**45.6**	**8.7**	**42.8**
2009	**49.8**	W	11.1	W	36.8	**7.1**	**42.8**	**8.1**	**41.0**
2010	**46.6**	0.4	11.7	1.9	32.6	**3.7**	**42.9**	**8.2**	**37.9**
2011	**54.8**	0.6	14.8	1.1	38.4	**5.2**	**49.6**	**12.0**	**42.3**
2012	**57.5**	W	11.5	W	37.6	**9.8**	**47.7**	**8.1**	**48.9**
2013	**57.4**	W	12.8	W	37.4	**9.5**	**47.9**	**11.3**	**46.1**
2014	**53.3**	W	17.1	W	34.4	**3.3**	**50.0**	**14.5**	**38.8**
2015	**56.5**	W	13.9	W	38.2	**3.4**	**53.1**	**11.3**	**43.2**
2016	**50.6**	W	7.9	W	39.5	**5.4**	**45.2**	**10.6**	**37.0**
2017	**43.0**	W	4.5	W	34.4	**2.9**	**40.1**	**6.2**	**36.6**
2018	**40.3**	W	3.9	W	33.0	**3.9**	**36.4**	**6.5**	**33.4**
2019	**48.3**	W	4.4	W	39.2	**W**	**W**	**10.5**	**37.8**
2020	**48.9**	W	6.4	W	38.4	**W**	**W**	**11.8**	**37.0**
2021	**46.7**	1.7	3.3	0.0	41.6	**2.5**	**44.3**	**9.0**	**37.8**
2022	**40.5**	W	W	0.0	38.0	**W**	**W**	**5.9**	**34.6**
2023	**51.6**	W	W	W	49.6	**2.4**	**49.2**	**7.7**	**43.9**

- - = Not applicable. W = Data withheld to avoid disclosure of individual company data. NA = Not available.

[1] Includes purchases between owners and operators of U.S. civilian nuclear power reactors along with purchases from other U.S. suppliers which are U.S. converters, enrichers, and fabricators.

[2] Spot Contract: A one-time delivery (usually) of the entire contract to occur within one year of contract execution (signed date).

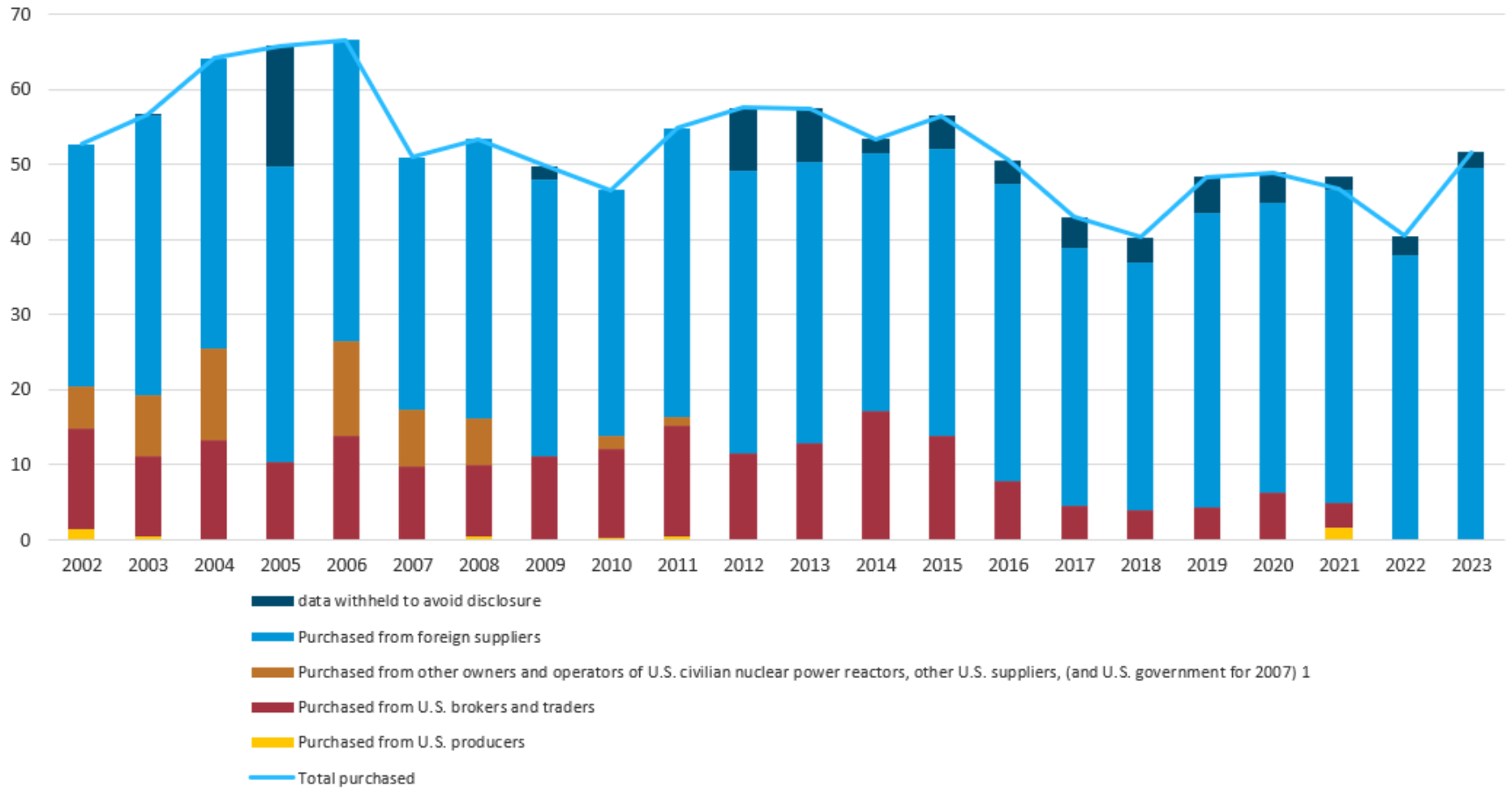
[3] Short-, Medium-, and Long-Term Contracts: One or more deliveries to occur after a year following contract execution (signed date).

Notes: *Other U.S. Suppliers* are U.S. converters, enrichers, and fabricators. Totals may not equal sum of components because of independent rounding.

Data Sources: U.S. Energy Information Administration: *Uranium Industry Annual*, Tables 10, 11 and 16, 2002. Form EIA-858, *Uranium Marketing Annual Survey,* 2003-2023

Figure S1. Uranium purchased by owners and operators of U.S. civilian nuclear power reactors, 2002–2023

million pounds U_3O_8e equivalent



[1] Includes purchases between owners and operators of U.S. civilian nuclear power reactors along with purchases from other U.S. suppliers which are U.S. converters, enrichers, and fabricators.

Data Sources: U.S. Energy Information Administration: *Uranium Industry Annual* reports, 2002 and Form EIA-858, *Uranium Marketing Annual Survey* 2003–2023.

Table S1b. Weighted-average price of uranium purchased by owners and operators of U.S. civilian nuclear power reactors, 2002–2023

dollars per pound U3O8 equivalent

Delivery year	Total purchased (weighted-average price)	Purchased from U.S. producers	Purchased from U.S. brokers and traders	Purchased from other owners and operators of U.S. civilian nuclear power reactors, other U.S. suppliers, (and U.S. government for 2007) [1]	Purchased from foreign suppliers	U.S.-origin uranium (weighted-average price)	Foreign-origin uranium (weighted-average price)	Spot contracts [2] (weighted-average price)	Short-, medium-, and long-term contracts [3] (weighted-average price)
2002	**10.36**	13.03	10.21	W	10.37	**10.89**	**10.29**	**9.29**	**10.58**
2003	**10.81**	14.17	11.05	10.16	10.82	**10.81**	**10.81**	**10.10**	**10.94**
2004	**12.61**	- -	12.08	11.30	13.15	**11.87**	**12.76**	**14.77**	**12.24**
2005	**14.36**	W	13.76	W	14.70	**15.11**	**14.21**	**20.04**	**13.70**
2006	**18.61**	- -	20.49	W	18.62	**17.85**	**18.75**	**39.48**	**16.38**
2007	**32.78**	- -	34.10	W	32.36	**28.89**	**33.05**	**88.25**	**24.45**
2008	**45.88**	75.16	39.62	W	48.49	**59.55**	**43.47**	**66.95**	**41.59**
2009	**45.86**	W	41.88	W	46.68	**48.92**	**45.35**	**46.45**	**45.74**
2010	**49.29**	47.13	44.98	42.24	51.30	**45.25**	**49.64**	**43.99**	**50.43**
2011	**55.64**	58.12	53.29	52.50	56.60	**52.12**	**55.98**	**54.69**	**55.90**
2012	**54.99**	W	54.44	W	54.40	**59.44**	**54.07**	**51.04**	**55.65**
2013	**51.99**	W	50.44	W	51.93	**56.37**	**51.13**	**43.83**	**54.00**
2014	**46.16**	W	42.90	W	47.62	**48.11**	**46.03**	**36.64**	**49.73**
2015	**44.13**	52.35	44.67	W	44.66	**43.86**	**44.14**	**36.80**	**46.04**
2016	**42.43**	48.86	50.56	W	44.85	**43.92**	**42.26**	**29.62**	**46.11**
2017	**38.80**	48.77	41.80	20.02	41.16	**35.55**	**39.04**	**22.36**	**40.99**
2018	**38.81**	46.59	52.51	W	39.82	**45.26**	**38.11**	**27.51**	**40.99**
2019	**35.59**	W	48.16	W	36.28	**W**	**W**	**27.89**	**37.73**
2020	**33.27**	W	30.09	W	35.27	**W**	**W**	**28.70**	**34.74**
2021	**33.91**	W	W	0.00	33.25	**43.04**	**33.40**	**30.56**	**34.71**
2022	**39.08**	W	W	0.00	39.78	**W**	**W**	**40.70**	**38.81**
2023	**43.80**	W	W	W	42.80	**40.63**	**43.95**	**51.64**	**42.42**

- - = Not applicable. W = Data withheld to avoid disclosure of individual company data. NA = Not available.

[1] Includes purchases between owners and operators of U.S. civilian nuclear power reactors along with purchases from other U.S. suppliers, which are U.S. converters, enrichers, and fabricators.

[2] Spot Contract: A one-time delivery (usually) of the entire contract to occur within one year of contract execution (signed date).

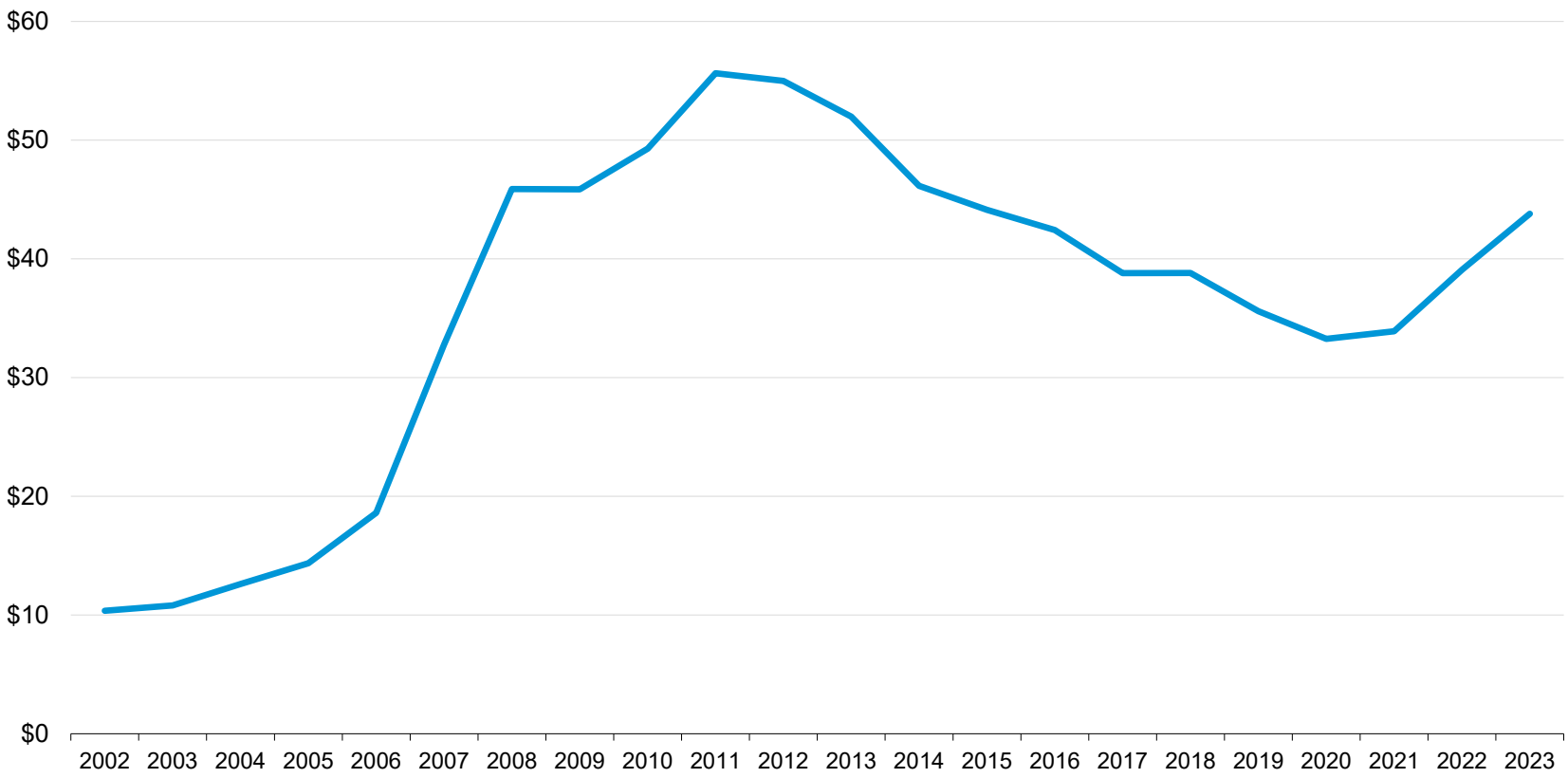
[3] Short-, Medium-, and Long-Term Contracts: One or more deliveries to occur after a year following contract execution (signed date).

Notes: *Other U.S. Suppliers* are U.S. converters, enrichers, and fabricators. Totals may not equal sum of components because of independent rounding. Weighted-average prices are not adjusted for inflation.

Data Sources: U.S. Energy Information Administration: *Uranium Industry Annual*, Tables 10, 11 and 16, 2002. Form EIA-858, *Uranium Marketing Annual Survey*, 2002-2023

Figure S2. Weighted-average price of uranium purchased by owners and operators of U.S. civilian nuclear power reactors, 2002–2023

dollars per pound U_3O_8e equivalent



Data Sources: U.S. Energy Information Administration: *Uranium Industry Annual* reports, 2002. Form EIA-858, *Uranium Marketing Annual Survey*, 2003-2023

Table S2. Uranium feed deliveries, enrichment services, and uranium loaded by owners and operators of U.S. civilian nuclear power reactors, 2002–2023

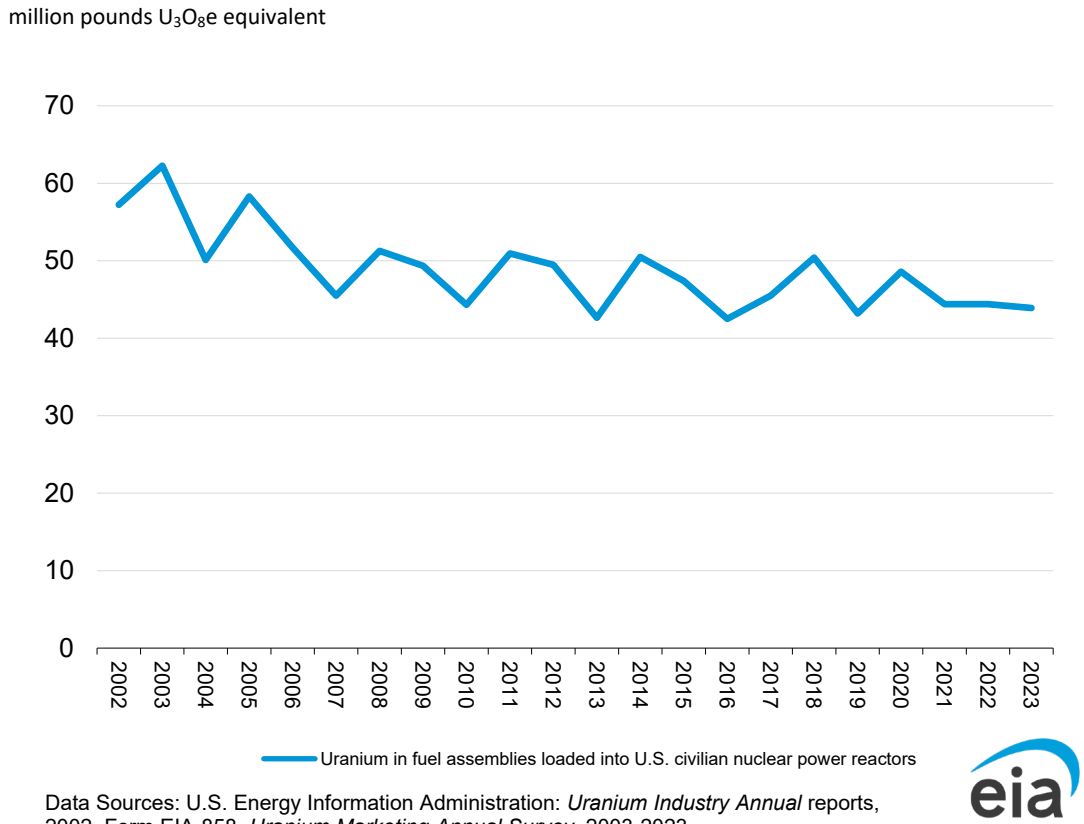
	Million pounds U3O8 equivalent		Million separative work units (SWU)			
Year	Feed deliveries by owners and operators of U.S. civilian nuclear power reactors	Uranium in fuel assemblies loaded into U.S. civilian nuclear power reactors	U.S.-origin enrichment services purchased	Foreign-origin enrichment services purchased	Total purchased enrichment services	Average price (US$ per SWU)
2002	54.7	57.2	1.7	9.8	**11.5**	-
2003	49.3	62.3	1.7	10.3	**12.0**	-
2004	53.4	50.1	1.4	10.4	**11.8**	-
2005	52.9	58.3	1.1	10.3	**11.4**	-
2006	56.6	51.7	1.6	11.8	**13.4**	**106.57**
2007	49.0	45.5	1.5	12.7	**14.2**	**114.58**
2008	43.4	51.3	1.9	10.7	**12.6**	**121.33**
2009	51.9	49.4	4.1	13.1	**17.2**	**130.78**
2010	45.5	44.3	2.3	11.5	**13.8**	**136.14**
2011	51.3	50.9	2.4	12.4	**14.8**	**136.12**
2012	52.1	49.5	3.3	12.3	**15.6**	**141.36**
2013	47.4	42.6	3.9	8.5	**12.3**	**142.22**
2014	41.9	50.5	3.8	9.2	**12.9**	**140.75**
2015	41.4	47.4	4.1	8.8	**12.9**	**136.88**
2016	43.1	42.5	4.8	9.5	**14.3**	**131.00**
2017	33.8	45.5	5.6	7.3	**12.9**	**125.43**
2018	33.4	50.4	5.0	10.0	**15.0**	**115.42**
2019	38.3	43.2	5.3	8.0	**13.3**	**109.54**
2020	34.4	48.6	4.1	10.0	**14.1**	**99.51**
2021	34.2	44.4	2.7	11.5	**14.2**	**99.54**
2022	34.6	44.4	3.9	10.3	**14.2**	**101.03**
2023	33.5	43.9	4.3	10.9	**15.2**	**106.97**

- = No data reported.

Notes: Totals may not equal sum of components because of independent rounding. Average prices are not adjusted for inflation.

Sources: U.S. Energy Information Administration: *Uranium Industry Annual*, Tables 22, 23, 25, and 27, 2002. Form EIA-858, *Uranium Marketing Annual Survey*, 2003-2023

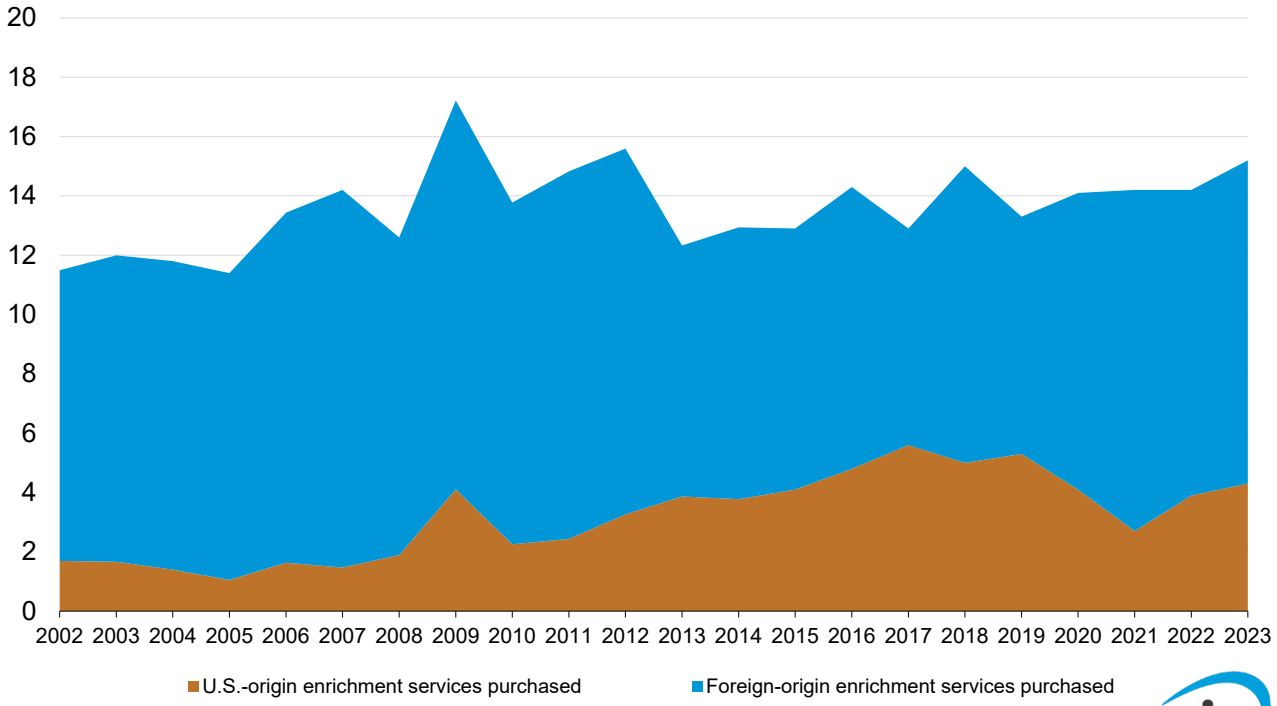
Figure S3. Uranium loaded into U.S. civilian nuclear power reactors, 2002–2023



Data Sources: U.S. Energy Information Administration: *Uranium Industry Annual* reports, 2002. Form EIA-858, *Uranium Marketing Annual Survey*, 2003-2023

Figure S4. Uranium enrichment services purchased by owners and operators of U.S. civilian nuclear power reactors, 2002–2023

million separative work units (SWU)



Data Sources: U.S. Energy Information Administration: *Uranium Industry Annual* reports, 2002. Form EIA-858, *Uranium Marketing Annual Survey*, 2003-2023

Table S3a. Foreign purchases, foreign sales, and uranium inventories owned by U.S. suppliers and owners and operators of U.S. civilian nuclear power reactors, 2002–2023

million pounds U3O8 equivalent

Delivery year	Foreign purchases by U.S. suppliers	Foreign purchases by owners and operators of U.S. civilian nuclear power reactors	Total foreign purchases	U.S. broker and trader purchases from foreign suppliers	Foreign sales	U.S. supplier owned uranium inventories	Owners and operators of U.S. civilian nuclear power reactors owned uranium inventories	Total commercial uranium inventories
2002	22.7	30.0	**52.7**	**18.6**	**15.4**	48.7	53.5	**102.1**
2003	18.2	34.9	**53.0**	**15.8**	**13.2**	39.9	45.6	**85.5**
2004	30.2	35.9	**66.1**	**26.4**	**13.2**	37.5	57.7	**95.2**
2005	27.0	38.5	**65.5**	**24.0**	**20.5**	29.1	64.7	**93.8**
2006	26.1	38.7	**64.8**	**24.0**	**18.7**	29.1	77.5	**106.6**
2007	21.6	32.5	**54.1**	**18.9**	**14.8**	31.2	81.2	**112.4**
2008	24.1	32.9	**57.1**	**21.3**	**17.2**	27.0	83.0	**110.0**
2009	26.7	32.2	**58.9**	**26.8**	**23.5**	26.8	84.8	**111.5**
2010	25.0	30.4	**55.3**	**24.7**	**23.1**	24.7	86.5	**111.3**
2011	19.3	35.1	**54.4**	**19.6**	**16.7**	22.3	89.8	**112.1**
2012	20.2	36.0	**56.2**	**20.2**	**18.0**	23.3	97.6	**120.9**
2013	23.2	34.1	**57.3**	**W**	**18.9**	21.3	113.1	**134.4**
2014	24.2	34.4	**58.6**	**W**	**20.0**	18.7	114.0	**132.7**
2015	27.2	36.9	**64.1**	**26.1**	**25.7**	14.3	121.1	**135.5**
2016	22.1	28.5	**50.7**	**22.1**	**17.2**	16.7	128.0	**144.6**
2017	16.9	25.2	**42.1**	**14.1**	**14.0**	17.8	123.9	**141.7**
2018	18.3	23.2	**41.5**	**18.9**	**13.9**	19.3	111.2	**130.5**
2019	21.2	21.8	**42.9**	**20.8**	**11.7**	17.5	113.1	**130.7**
2020	15.0	24.6	**39.6**	**14.4**	**9.9**	24.2	106.7	**131.0**
2021	17.0	24.3	**41.3**	**16.6**	**7.5**	33.2	108.5	**141.7**
2022	10.1	22.0	**32.1**	**9.6**	**2.5**	40.7	102.4	**143.1**
2023	8.3	23.7	**32.0**	**7.6**	**1.4**	42.1	110.0	**152.1**

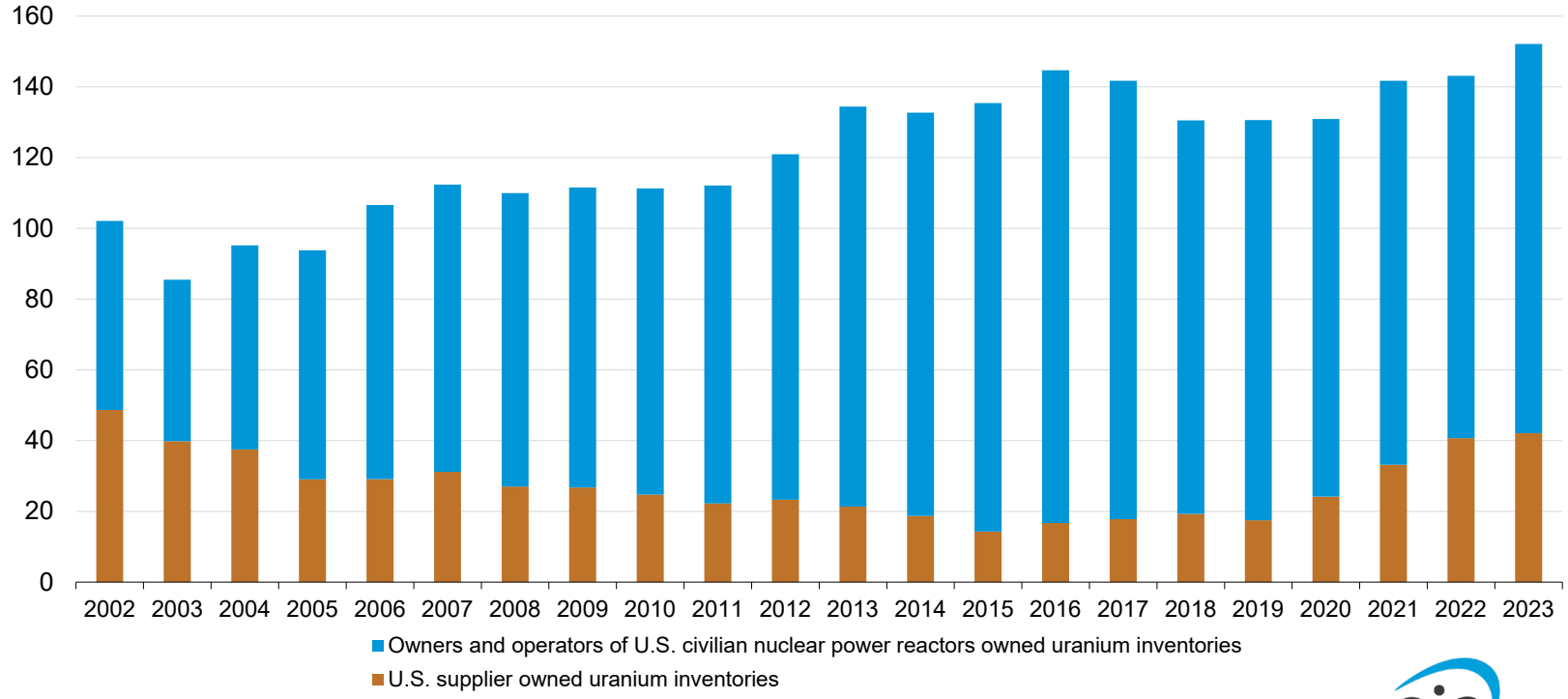
W = Data withheld to avoid disclosure of individual company data.

Notes: Totals may not equal sum of components because of independent rounding. Foreign purchase: A uranium purchase of foreign-origin uranium from a firm located outside the United States. Foreign sale: A uranium sale to a firm located outside the United States.

Data Sources: U.S. Energy Information Administration: *Uranium Industry Annual*, Tables 28, 29, 30 and 31, 2002. Form EIA-858, *Uranium Marketing Annual Survey*, 2003–2023

Figure S5. Total commercial uranium inventories of U.S. suppliers and owners and operators of U.S. civilian nuclear power reactors, 2002–2023

million pounds U_3O_8e equivalent



Data Sources: Energy Information Administration: *Uranium Industry Annual* reports, 2002. Form EIA-858 *Uranium Marketing Annual Survey,* 2003–2023

Table S3b. Weighted-average price of foreign purchases and foreign sales by U.S. suppliers and owners and operators of U.S. civilian nuclear power reactors, 2002–2023

dollars per pound U3O8 equivalent

Delivery year	Foreign purchases by U.S. suppliers	Foreign purchases by owners and operators of U.S. civilian nuclear power reactors	Total foreign purchases (weighted-average price)	U.S. broker and trader purchases from foreign suppliers (weighted-average price)	Foreign sales (weighted-average price)
2002	9.65	10.37	**10.05**	**9.59**	**10.04**
2003	10.19	10.79	**10.59**	**10.19**	**10.39**
2004	11.21	13.13	**12.25**	**11.15**	**12.63**
2005	15.11	14.63	**14.83**	**15.68**	**20.70**
2006	20.28	18.66	**19.31**	**21.61**	**32.87**
2007	36.59	32.58	**34.18**	**39.88**	**55.47**
2008	33.30	47.46	**41.30**	**35.39**	**45.62**
2009	34.80	46.55	**41.23**	**34.88**	**41.48**
2010	41.30	51.69	**47.01**	**41.23**	**42.78**
2011	48.80	56.87	**54.00**	**49.27**	**49.05**
2012	46.80	54.08	**51.44**	**47.08**	**47.57**
2013	43.25	51.64	**48.24**	**W**	**42.75**
2014	39.13	47.62	**44.11**	**W**	**35.69**
2015	40.68	44.70	**42.96**	**40.77**	**39.29**
2016	36.03	44.08	**40.45**	**36.09**	**33.66**
2017	31.11	41.12	**37.09**	**29.93**	**25.19**
2018	30.90	39.32	**35.73**	**30.84**	**26.02**
2019	33.17	36.28	**34.77**	**33.43**	**27.16**
2020	31.27	35.33	**33.79**	**31.51**	**29.57**
2021	33.19	33.30	**33.26**	**33.53**	**35.82**
2022	42.48	39.40	**40.31**	**42.36**	**54.65**
2023	40.04	42.48	**41.88**	**39.28**	**71.56**

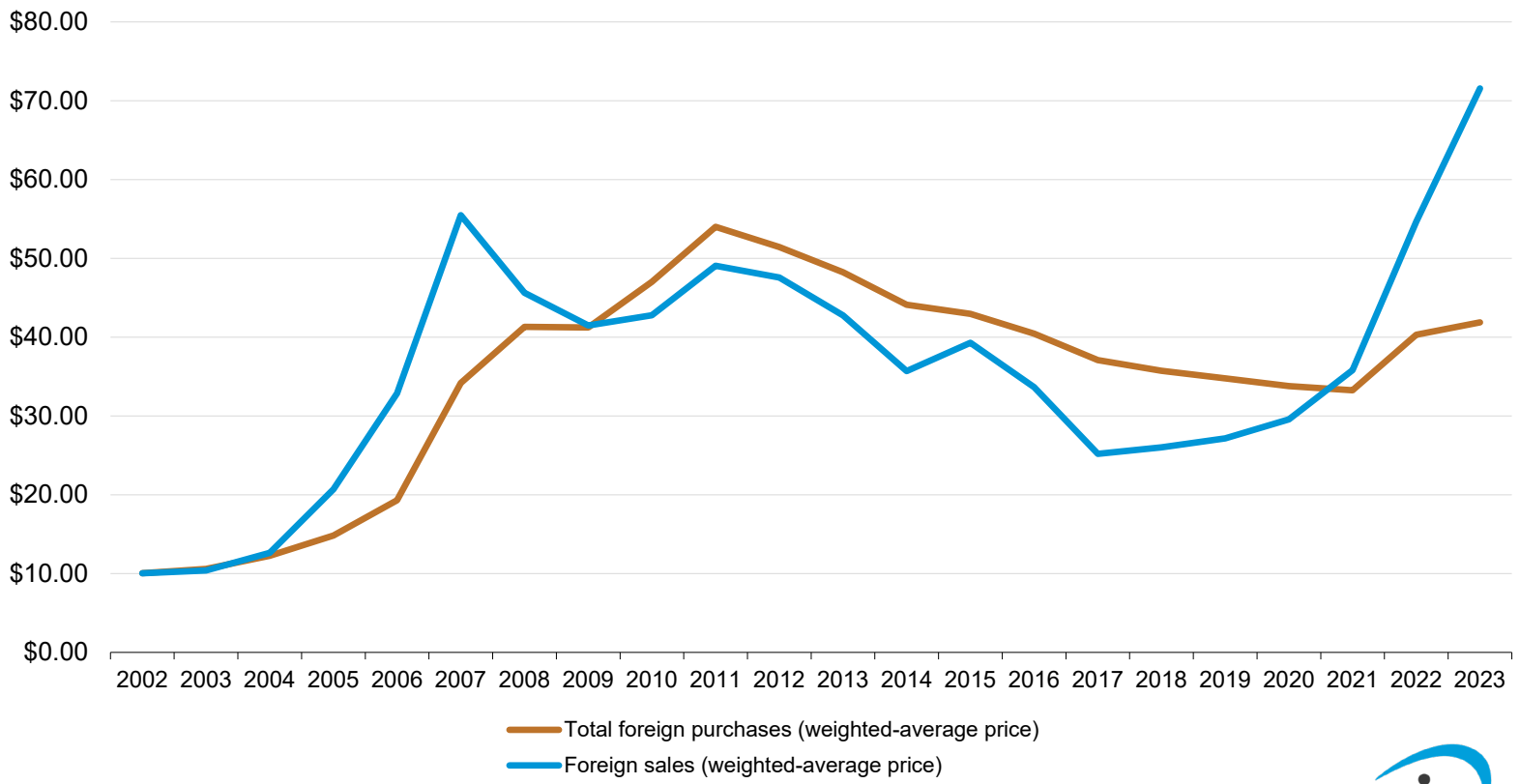
W = Data withheld to avoid disclosure of individual company data.

Notes: Totals may not equal sum of components because of independent rounding. Foreign purchase: A uranium purchase of foreign-origin uranium from a firm located outside the United States. Foreign sale: A uranium sale to a firm located outside the United States. Weighted-average prices are not adjusted for inflation.

Data Sources: U.S. Energy Information Administration: *Uranium Industry Annual,* Tables 28, 29, 30, and 31, 2002. Form EIA-858, *Uranium Marketing Annual Survey*, 2003–2023

Figure S6. Weighted-average price of foreign purchases and foreign sales of uranium, 2002–2023

dollars per pound U_3O_8e equivalent



Data Sources: U.S. Energy Information Administration: *Uranium Industry Annual* reports, 2002. Form EIA-858, *Uranium Marketing Annual Survey,* 2003–2023

Table 1. Uranium purchased by owners and operators of U.S. civilian nuclear power reactors by supplier and delivery year, 2018–2023

thousand pounds U_3O_8 equivalent; dollars per pound U_3O_8 equivalent

Deliveries	2018	2019	2020	2021	2022	2023
Purchased from U.S. producers						
Purchases of U.S.-origin and foreign-origin uranium	1,520	W	891	1,650	W	W
Weighted-average price	46.59	W	36.01	32.32	W	W
Purchased from U.S. brokers and traders						
Purchases of U.S.-origin and foreign-origin uranium	3,897	4,395	6,412	3,308	W	W
Weighted-average price	52.51	48.16	30.09	39.67	W	W
Purchased from other owners and operators of U.S. civilian nuclear power reactors						
Purchases	W	W	0	0	W	W
Weighted-average price	W	W	0	0	W	W
Purchased from other U.S. suppliers						
Purchases of U.S.-origin and foreign-origin uranium	W	W	404	195	W	W
Weighted-average price	W	W	40.46	28.99	W	W
Purchased from foreign suppliers						
Purchases of U.S.-origin and foreign-origin uranium	33,044	39,208	38,418	41,583	38,009	49,622
Weighted-average price	39.82	36.28	35.27	33.35	39.78	42.80
Total purchased by owners and operators of U.S. civilian nuclear power reactors						
Purchases of U.S.-origin and foreign-origin uranium	**40,293**	**48,328**	**48,934**	**46,736**	**40,519**	**51,625**
Weighted-average price	**38.81**	**35.59**	**33.27**	**33.91**	**39.08**	**43.80**

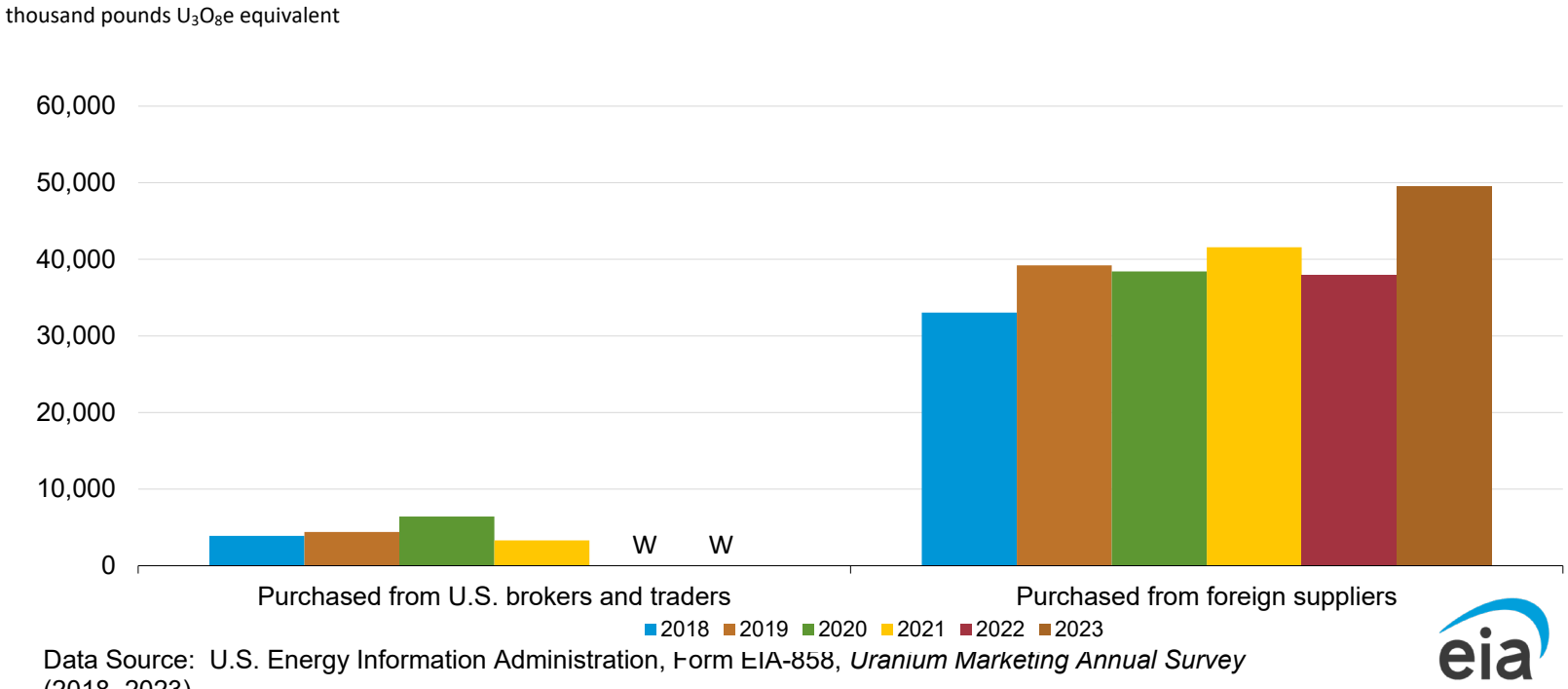
W = Data withheld to avoid disclosure of individual company data.

-- = Not applicable.

Notes: *Other U.S. Suppliers* are U.S. converters, enrichers, and fabricators. Totals may not equal sum of components because of independent rounding. Weighted-average prices are not adjusted for inflation.

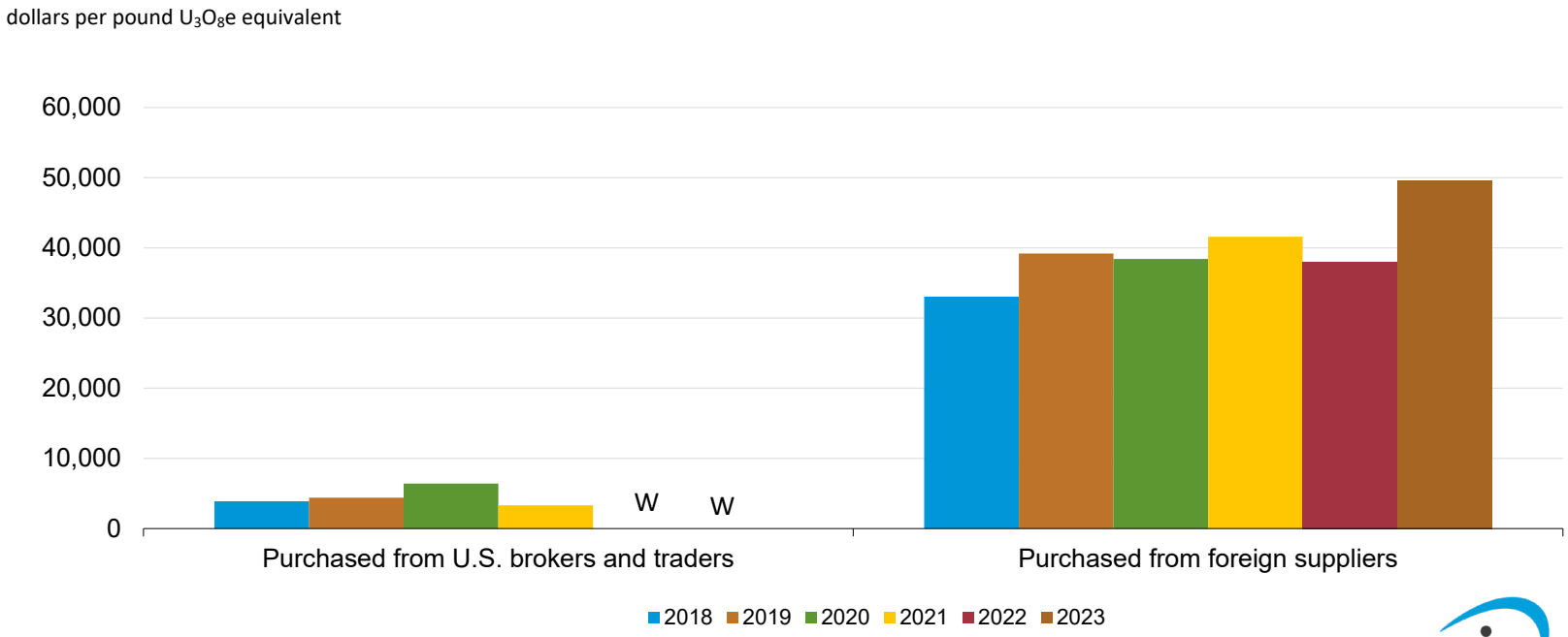
Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2018–2023)

Figure 1. Uranium purchased by owners and operators of U.S. civilian nuclear power reactors by supplier and delivery year, 2018–2023



Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2018–2023)

Figure 2. Weighted-average price of uranium purchased by owners and operators of U.S. civilian nuclear power reactors by supplier and delivery year, 2018–2023



Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2018–2023)

Table 2. Uranium purchased by owners and operators of U.S. civilian nuclear power reactors by origin and delivery year, 2018–2023

thousand pounds U_3O_8e equivalent; dollars per pound U_3O_8e equivalent

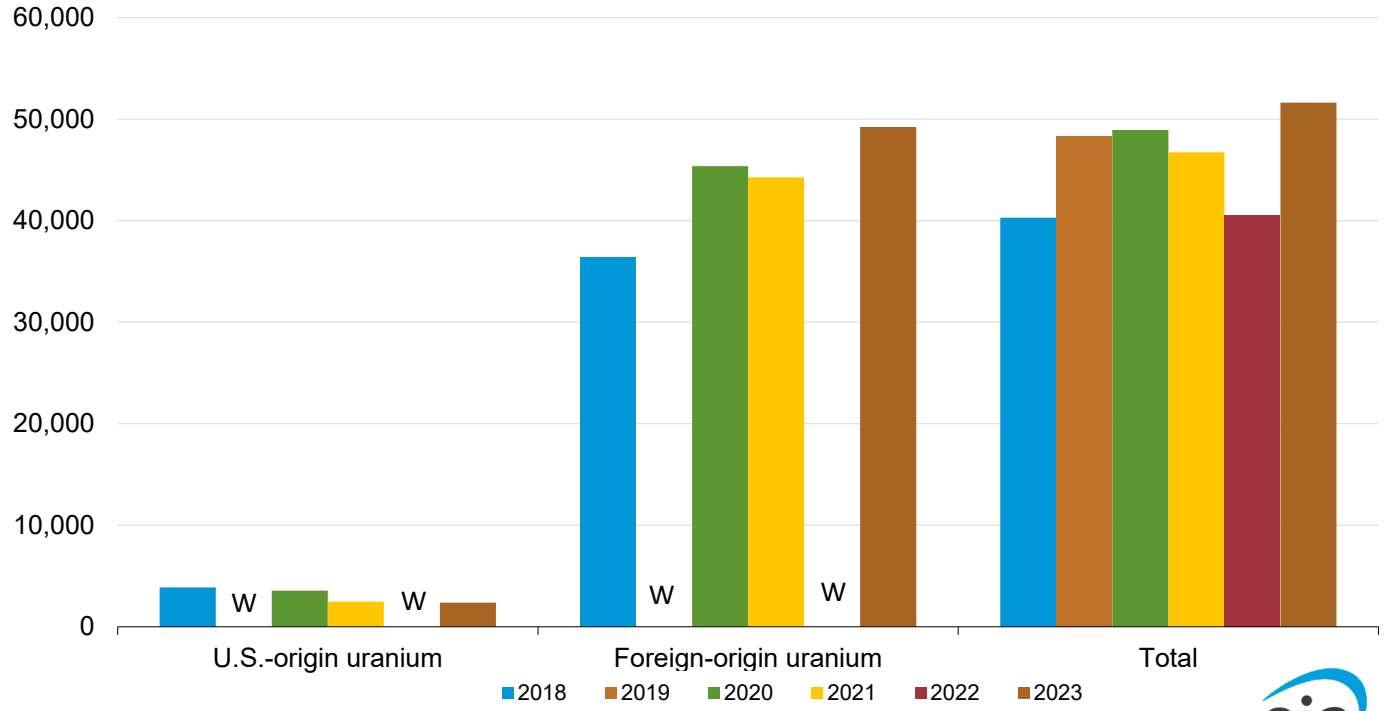
Deliveries	2018	2019	2020	2021	2022	2023
U.S.-origin uranium						
Purchases	3,878	W	3,567	2,474	W	2,386
Weighted-average price	45.26	W	30.09	43.04	W	40.63
Foreign-origin uranium						
Purchases	36,415	W	45,367	44,263	W	49,239
Weighted-average price	38.11	W	33.53	33.40	W	43.95
Total						
Purchases	**40,293**	**48,328**	**48,934**	**46,736**	**40,519**	**51,625**
Weighted-average price	**38.81**	**35.59**	**33.27**	**33.91**	**39.08**	**43.80**

Notes: Totals may not equal sum of components because of independent rounding. Weighted-average prices are not adjusted for inflation.

Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2018–2023)

Figure 3. Uranium purchased by owners and operators of U.S. civilian nuclear power reactors by origin and delivery year, 2018–2023

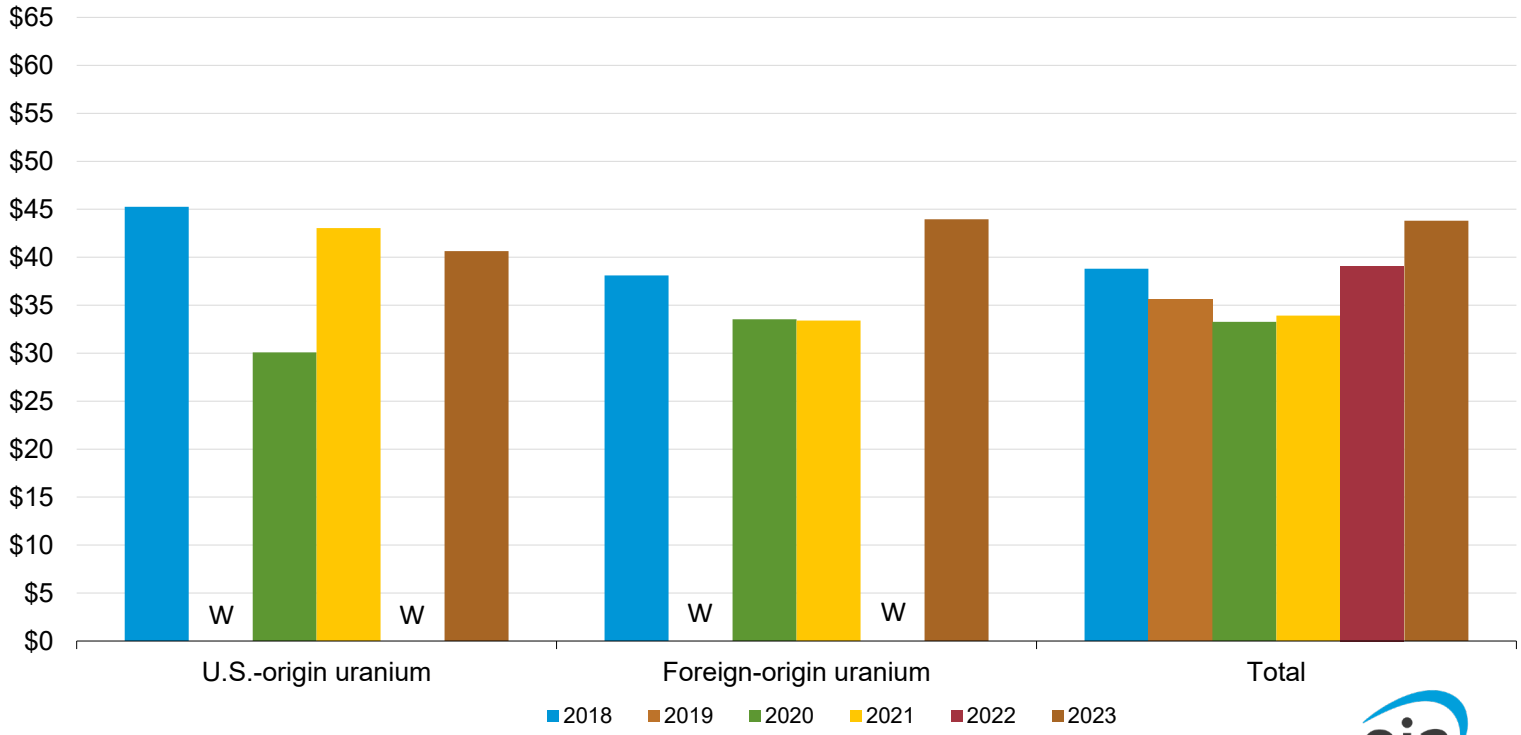
thousand pounds U_3O_8e equivalent



Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2018–2023)

Figure 4. Weighted-average price of uranium purchased by owners and operators of U.S. civilian nuclear power reactors by origin and delivery year, 2018–2023

dollars per pound U_3O_8e equivalent



Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2018–2023)

Table 3. Uranium purchased by owners and operators of U.S. civilian nuclear power reactors by origin country and delivery year, 2019–2023

thousand pounds U_3O_8e equivalent; dollars per pound U_3O_8e equivalent

	Deliveries in 2019		Deliveries in 2020		Deliveries in 2021		Deliveries in 2022		Deliveries in 2023	
Origin country	Purchases	Weighted-average price	Purchases	Weighted-average price	Purchases	Weighted-average price	Purchases	Weighted-average price	Purchases	Weighted-average price
Australia	8,504	35.39	5,597	39.86	6,712	36.88	3,620	42.08	10,605	51.15
Brazil	0	--	0	0	0	0	0	0	0	0
Bulgaria	0	--	0	0	0	0	0	0	0	0
Canada	10,172	33.06	10,976	35.05	6,908	35.09	11,100	37.22	13,162	43.73
China	0	--	141	24.45	0	0	0	0	W	W
Czech Republic	0	--	0	0	0	0	0	0	0	0
Germany	W	W	0	0	0	0	W	W	0	0
Hungary	0	--	0	0	0	0	0	0	0	0
Kazakhstan	8,760	35.69	10,828	33.37	16,557	34.16	10,019	39.05	10,622	43.64
Malawi	0	--	239	29.01	60	52.25	W	W	W	W
Namibia	2,450	40.40	2,517	35.28	3,214	36.01	W	W	1,546	47.67
Niger	998	41.21	2,050	34.36	1,773	39.08	W	W	1,418	38.57
Portugal	0	--	0	0	0	0	0	0	0	0
Russia	7,365	27.31	8,064	25.73	6,314	22.76	4,781	35.20	6,042	30.86
South Africa	0	--	0	0	1	31.04	W	W	W	W
Ukraine	0	--	0	0	0	0	0	0	0	0
United Kingdom	0	--	666	35.4	0	0	0	0	0	0
Uzbekistan	4,365	38.99	3,940	35.93	2,499	33.74	4,438	39.21	4,887	44.20
unknown	W	W	100	24.36	225	29.70	-	-	-	-
Foreign total	**W**	**W**	**45,367**	**33.53**	**44,263**	**33.40**	**38,467**	**38.45**	**49,239**	**43.95**
United States	W	W	3,567	30.09	2,474	43.04	2,052	50.96	2,386	40.63
Total purchases	**48,328**	**35.59**	**48,934**	**33.27**	**46,736**	**33.91**	**40,519**	**39.08**	**51,625**	**43.80**

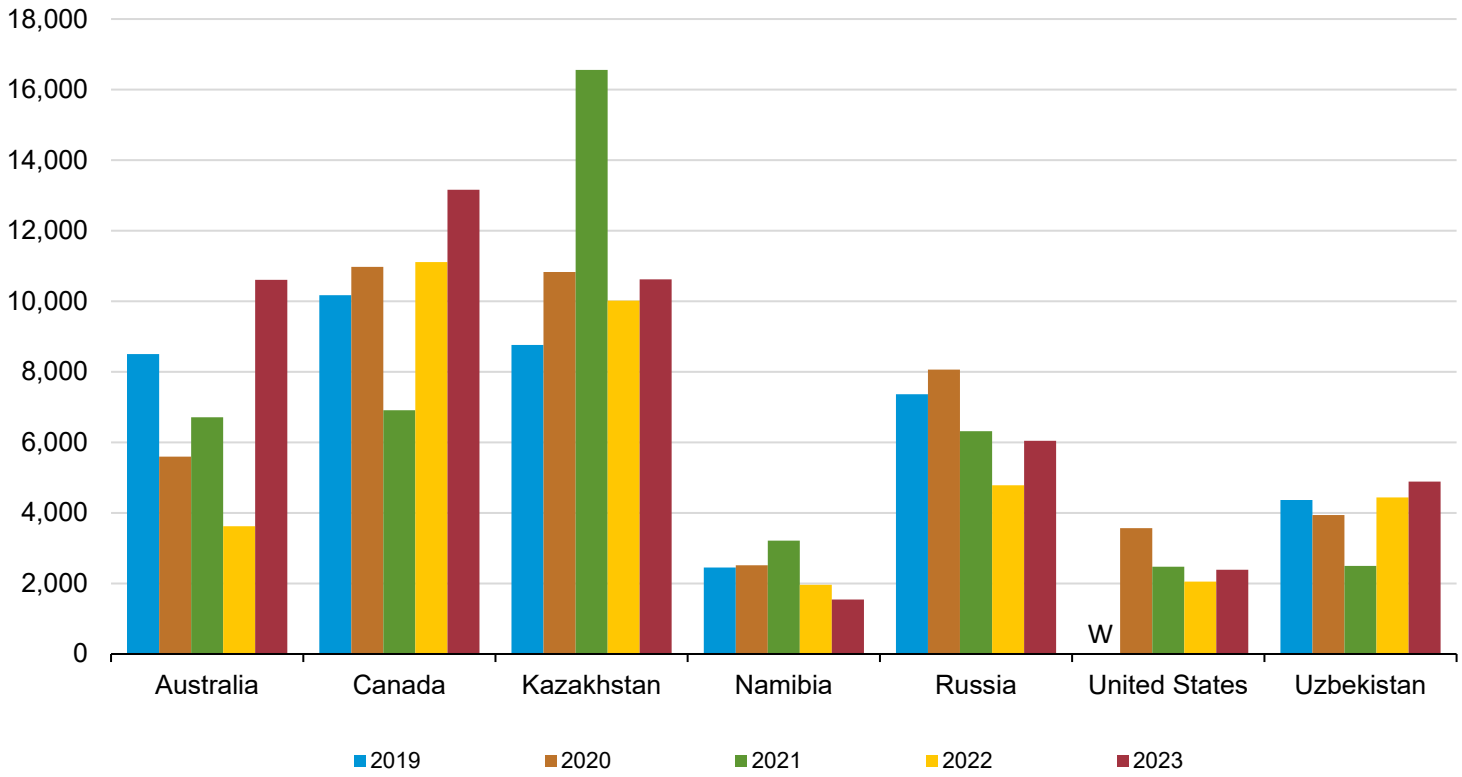
W = Data withheld to avoid disclosure of individual company data. -- = Not applicable.

Notes: Totals may not equal sum of components because of independent rounding. Weighted-average prices are not adjusted for inflation.

Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2019–23)

Figure 5. Uranium purchased by owners and operators of U.S. civilian nuclear power reactors by selected origin country and delivery year, 2019–2023

thousand pounds U_3O_8e equivalent



Data Source: U.S. Energy Information Administration: Form EIA-858, *Uranium Marketing Annual Survey* (2019–2023). W = Withheld

Table 4. Uranium purchased by owners and operators of U.S. civilian nuclear power reactors by origin and material type, 2023 deliveries

thousand pounds U_3O_8e equivalent; dollars per pound U_3O_8e equivalent

Deliveries	Uranium concentrate	Natural UF_6	Enriched UF_6	Natural UF_6 and Enriched UF_6	Total
U.S.-origin uranium					
Purchases	W	W	W	W	2,386
Weighted-average price	W	W	W	W	40.63
Foreign-origin uranium					
Purchases	W	W	W	W	49,239
Weighted-average price	W	W	W	W	43.95
Total					
Purchases	**29,909**	**11,497**	**10,219**	**21,716**	**51,625**
Weighted-average price	**44.79**	**50.12**	**33.80**	**42.44**	**43.80**

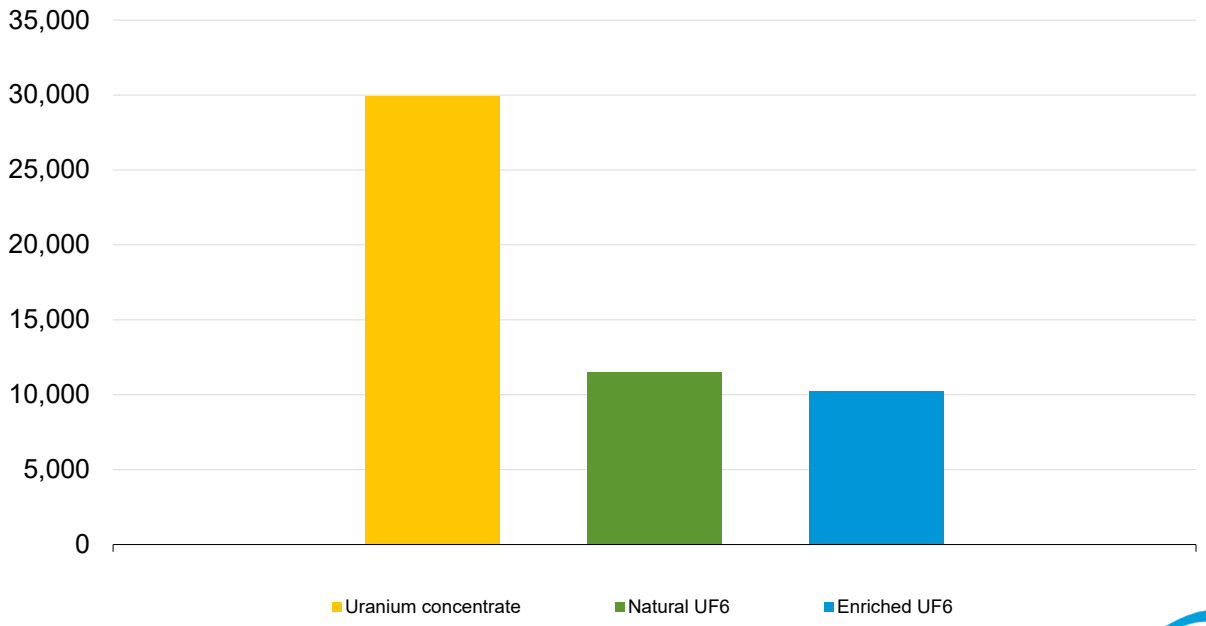
W = Data withheld to avoid disclosure of individual company data.

Notes: Totals may not equal sum of components because of independent rounding. Weighted-average prices are not adjusted for inflation. Natural UF_6 is uranium hexafluoride. The natural UF_6 and enriched UF_6 quantity represents only the U_3O_8 equivalent uranium-component quantity specified in the contract for each delivery of natural UF_6 and enriched UF_6. The natural UF_6 and enriched UF_6 weighted-average prices represent only the U_3O_8 equivalent uranium-component price specified in the contract for each delivery of natural UF_6 and enriched UF_6, it does not include the conversion service and enrichment service components.

Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2023)

Figure 6. Uranium purchased by owners and operators of U.S. civilian nuclear power reactors by material type, 2023 deliveries

thousand pounds U_3O_8e equivalent



Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2023)

Table 5. Average price and quantity for uranium purchased by owners and operators of U.S. civilian nuclear power reactors by pricing mechanisms and delivery year, 2022–2023

dollars per pound U_3O_8 equivalent; thousand pounds U_3O_8 equivalent

	Domestic purchases [1]		Foreign purchases [2]		Total purchases	
Pricing mechanisms	**2022**	**2023**	**2022**	**2023**	**2022**	**2023**
Contract-specified (fixed and base-escalated) pricing						
Weighted-average price	41.00	42.78	35.90	37.96	36.51	40.31
Quantity with reported price	3,021	3,739	15,424	16,350	30,159	36,549
Spot-market pricing						
Weighted-average price	52.11	W	47.01	W	46.19	53.63
Quantity with reported price	498	W	2,477	W	5,045	7,255
Other pricing						
Weighted-average price	45.27	W	48.08	W	46.93	51.02
Quantity with reported price	927	W	4,061	W	5,314	7,821
All pricing mechanisms						
Weighted-average price	**43.15**	**45.09**	**39.40**	**42.48**	**39.08**	**43.80**
Quantity with reported price	**4,446**	**5,906**	**21,961**	**23,740**	**40,519**	**51,625**
Total quantity	**4,446**	**5,906**	**21,961**	**23,740**	**40,519**	**51,625**

[1] A uranium purchase of both U.S.-origin uranium from a firm located in the United States.

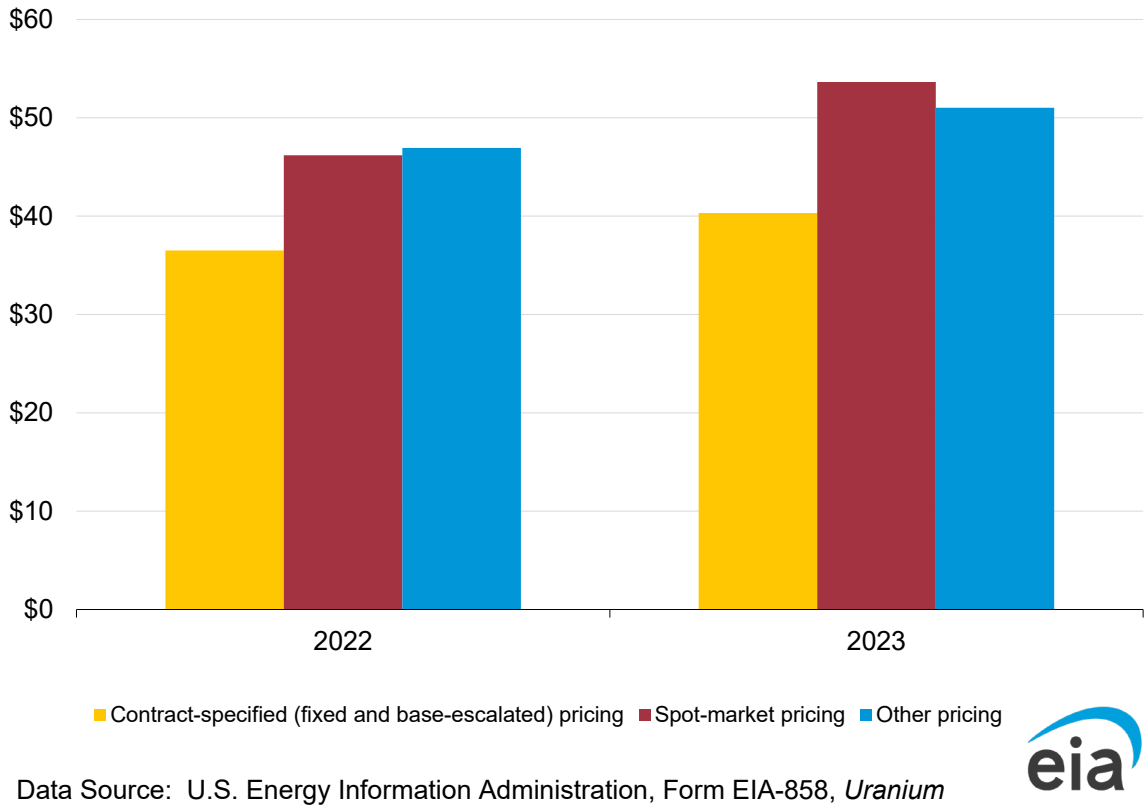
[2] A uranium purchase of foreign-origin uranium from a firm located outside of the United States.

Notes: Totals may not equal sum of components because of independent rounding. Weighted-average prices are not adjusted for inflation.

Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2022–2023)

Figure 7. Average price for uranium purchased by owners and operators of U.S. civilian nuclear power reactors by pricing mechanisms and delivery year, 2022–2023

dollars per pound U_3O_8 equivalent



Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2022–2023)

Table 6a. Uranium purchased by owners and operators of U.S. civilian nuclear power reactors ranked by price and distributed by quantity, 2021–2023 deliveries

thousand pounds U_3O_8 equivalent; dollars per pound U_3O_8 equivalent

	Deliveries in 2021		Deliveries in 2022		Deliveries in 2023	
Quantity distribution [1]	**Quantity with reported price**	**Weighted-average price**	**Quantity with reported price**	**Weighted-average price**	**Quantity with reported price**	**Weighted-average price**
First	5,842	20.33	5,065	20.61	6,453	23.24
Second	5,842	27.13	5,065	28.6	6,453	30.95
Third	5,842	29.11	5,065	30.93	6,453	34.46
Fourth	5,842	30.02	5,065	34.87	6,453	39.77
Fifth	5,842	31.23	5,065	40.79	6,453	44.29
Sixth	5,842	33.58	5,065	45.72	6,453	49.75
Seventh	5,842	45.36	5,065	49.24	6,453	54.96
Eighth	5,842	54.56	5,065	61.91	6,453	72.97
Total	**46,736**	**33.91**	**40,519**	**39.08**	**51,625**	**43.80**

[1] Distribution divides total quantity of uranium delivered (with a price) into eight distributions by price (sorted from lowest to highest) and provides the quantity-weighted average price for each distribution.

Notes: Totals may not equal sum of components because of independent rounding. Weighted-average prices are not adjusted for inflation.

Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2021–2023)

Table 6b. Uranium purchased by owners and operators of U.S. civilian nuclear power reactors ranked by price and distributed by purchaser, 2021–2023 deliveries

thousand pounds U_3O_8 equivalent; dollars per pound U_3O_8 equivalent

	Deliveries in 2021			Deliveries in 2022			Deliveries in 2023		
Distribution of purchasers	**Number of purchasers**	**Quantity with reported price**	**Weighted-average price**	**Number of purchasers**	**Quantity with reported price**	**Weighted-average price**	**Number of purchasers**	**Quantity with reported price**	**Weighted-average price**
First	7	20,014	27.36	6	6,176	27.75	7	21,304	36.70
Second	6	7,739	34.19	6	18,339	36.77	7	13,973	43.59
Third	6	12,954	38.94	6	9,575	43.70	6	9,084	47.90
Fourth	6	6,029	44.53	6	6,429	49.69	6	7,265	59.89
Total	**25**	**46,736**	**33.91**	**24**	**40,519**	**39.08**	**26**	**51,625**	**43.80**

Notes: Totals may not equal sum of components because of independent rounding. Weighted-average prices are not adjusted for inflation.

Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2021–2023)

Table 7. Uranium purchased by owners and operators of U.S. civilian nuclear power reactors by contract type and material type, 2023 deliveries

thousand pounds U_3O_8 equivalent; dollars per pound U_3O_8 equivalent

	Spot contracts [1]		Long-term contracts [2]		Total	
Material type	**Quantity with reported price**	**Weighted-average price**	**Quantity with reported price**	**Weighted-average price**	**Quantity with reported price**	**Weighted-average price**
U_3O_8	5,260	48.51	24,649	43.99	29,909	44.79
Natural UF_6	W	W	W	W	11,497	50.12
Enriched UF_6	W	W	W	W	10,219	33.80
Total	**7,736**	**51.64**	**43,889**	**42.42**	**51,625**	**43.80**

[1] A one-time delivery (usually) of the entire contract to occur within one year of contract execution (signed date).

[2] One or more deliveries to occur after a year following contract execution (signed date).

Notes: Totals may not equal sum of components because of independent rounding. Weighted-average prices are not adjusted for inflation.
UF6 is uranium hexafluoride. The natural UF6 and enriched UF6 quantity represents only the U3O8 equivalent uranium-component quantity specified in the contract for each delivery of natural UF6 and enriched UF6. The natural UF6 and enriched UF6 weighted-average price represent only the U3O8 equivalent uranium-component price specified in the contract for each delivery of natural UF6 and enriched UF6, it does not include the conversion service and enrichment service components.

Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2023)

Table 8. Contracts signed in 2023 by owners and operators of U.S. civilian nuclear power reactors by contract type

thousand pounds U_3O_8 equivalent; dollars per pound U_3O_8 equivalent

Purchase contract type (Signed in 2023)	Quantity of deliveries received in 2023	Weighted-average price	Number of purchase contracts for deliveries in 2023
Spot	W	W	W
Long-term	W	W	W
Total	**5,492**	**61.93**	**26**

Notes: Totals may not equal sum of components because of independent rounding. Weighted-average prices are not adjusted for inflation.

Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2023)

Table 9. Contracted purchases of uranium by owners and operators of U.S. civilian nuclear power reactors, signed in 2023, by delivery year, 2024–2033

thousand pounds U_3O_8 equivalent

Year of delivery	Minimum	Maximum
2024	6,637	6,717
2025	6,376	7,176
2026	9,121	10,331
2027	5,721	6,903
2028	4,079	5,153
2029	2,145	3,055
2030	1,465	1,895
2031	W	W
2032	W	W
2033	W	W
Total	**36,744**	**44,741**

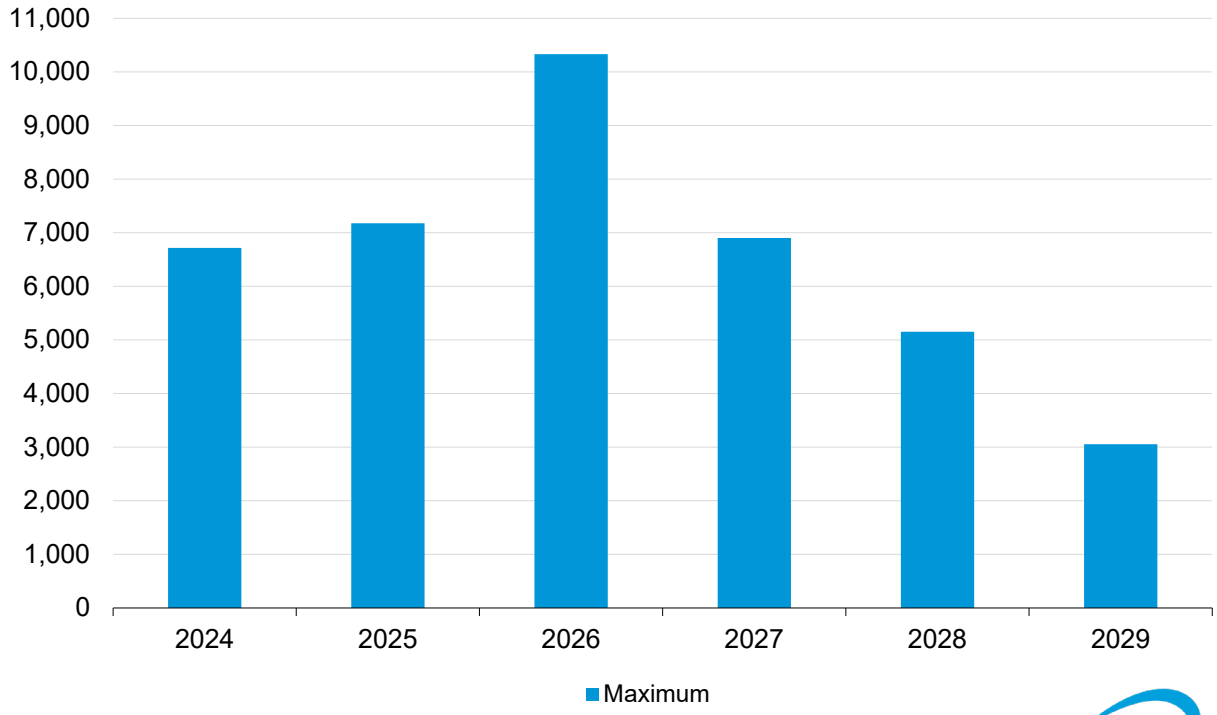
W = Data withheld to avoid disclosure of individual company data.

Note: Totals may not equal sum of components because of independent rounding.

Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2023)

Figure 8. Contracted purchases of uranium by owners and operators of U.S. civilian nuclear power reactors, signed in 2023, by delivery year, 2024–2029

thousand pounds U_3O_8 equivalent



Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2023)

Table 10. Contracted purchases of uranium from suppliers by owners and operators of U.S. civilian nuclear power reactors, in effect at the end of 2023, by delivery year, 2024–2033

thousand pounds U_3O_8 equivalent

	Contracted purchases from U.S. suppliers		Contracted purchases from foreign suppliers		Contracted purchases from all suppliers	
Year of delivery	**Minimum**	**Maximum**	**Minimum**	**Maximum**	**Minimum**	**Maximum**
2024	1,472	1,607	41,922	51,277	43,394	52,884
2025	1,729	1,979	36,423	48,696	38,152	50,675
2026	520	553	31,758	39,767	32,278	40,320
2027	823	968	27,126	34,436	27,949	35,404
2028	W	W	W	W	19,691	25,972
2029	W	W	W	W	13,747	18,478
2030	W	W	W	W	10,547	14,388
2031	W	W	W	W	3,211	5,592
2032	W	W	W	W	2,881	4,845
2033	W	W	W	W	W	W
Total	**5,248**	**7,884**	**186,736**	**243,006**	**191,984**	**249,055**

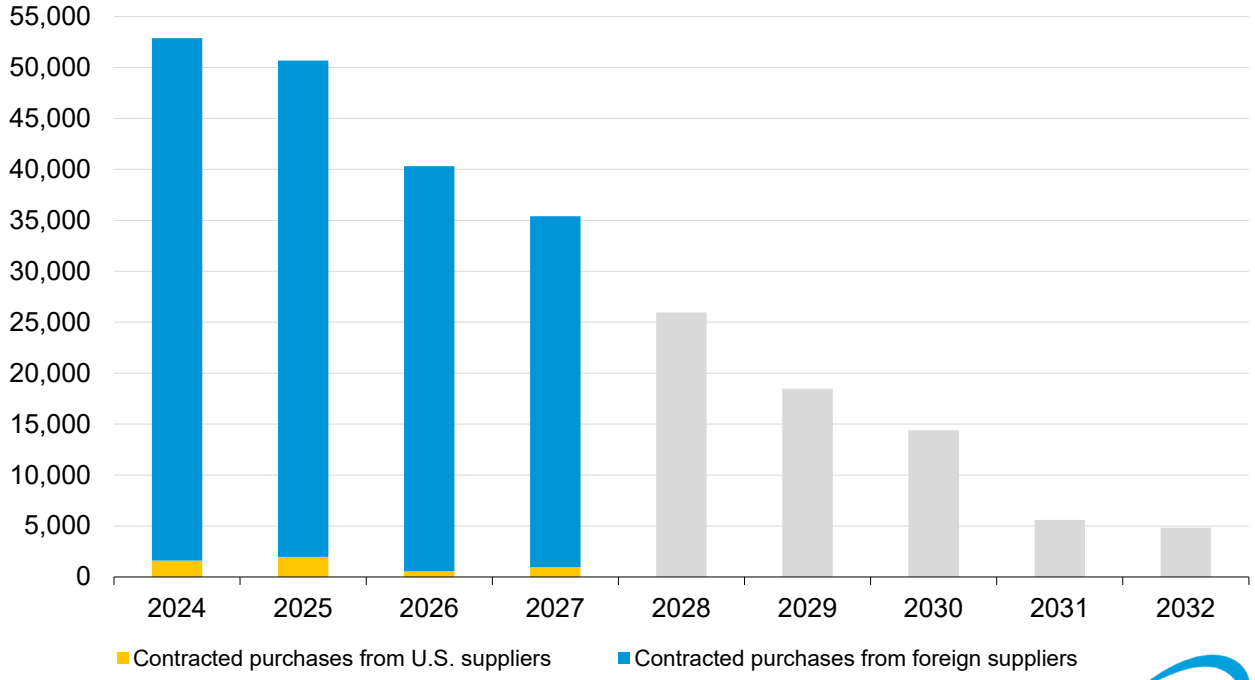
W = Data withheld to avoid disclosure of individual company data.

Note: Totals may not equal sum of components because of independent rounding.

Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2023)

Figure 9. Maximum contracted purchases of uranium from suppliers by owners and operators of U.S. civilian nuclear power reactors, in effect at the end of 2023, by delivery year, 2024–2032

thousand pounds U_3O_8 equivalent



Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2023)

Table 11. Unfilled uranium market requirements of owners and operators of U.S. civilian nuclear power reactors, 2023–2033

thousand pounds U_3O_8 equivalent

	As of December 31, 2022		As of December 31, 2023	
Year	Annual	Cumulative	Annual	Cumulative
2023	2,100	2,100	0	0
2024	4,875	6,976	2,334	2,334
2025	5,276	12,252	2,609	4,943
2026	8,689	20,941	4,478	9,421
2027	10,356	31,297	8,542	17,963
2028	21,621	52,919	17,253	35,216
2029	24,979	77,898	15,333	50,549
2030	27,622	105,520	21,520	72,069
2031	36,644	142,164	36,028	108,098
2032	36,991	179,155	34,103	142,201
2033	0	0	41,906	184,107

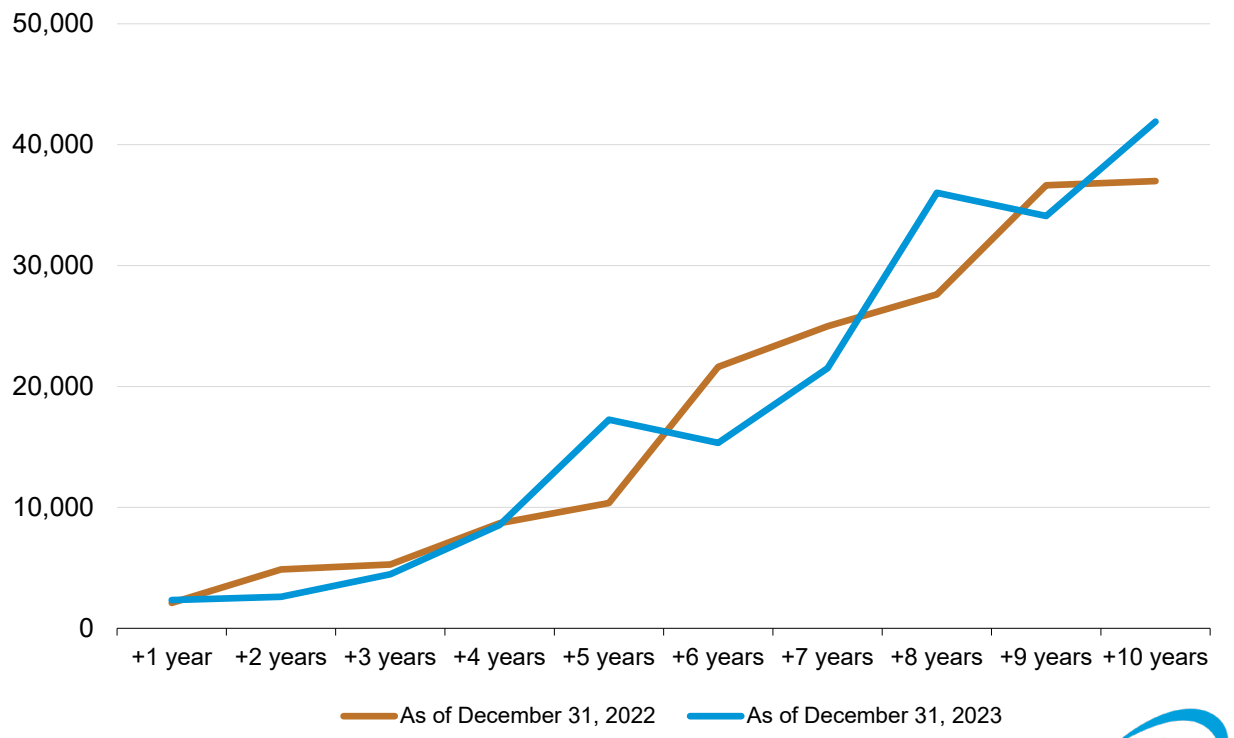
- = No data reported. -- = Not applicable.

Note: Totals may not equal sum of components because of independent rounding.

Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2022–2023)

Figure 10. Annual unfilled uranium market requirements of owners and operators of U.S. civilian nuclear power reactors, at the end of 2022 and at the end of 2023

thousand pounds U_3O_8 equivalent



Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2022–2023)

Table 12. Maximum anticipated uranium market requirements of owners and operators of U.S. civilian nuclear power reactors, 2024–2033, at end of 2023

thousand pounds U_3O_8 equivalent

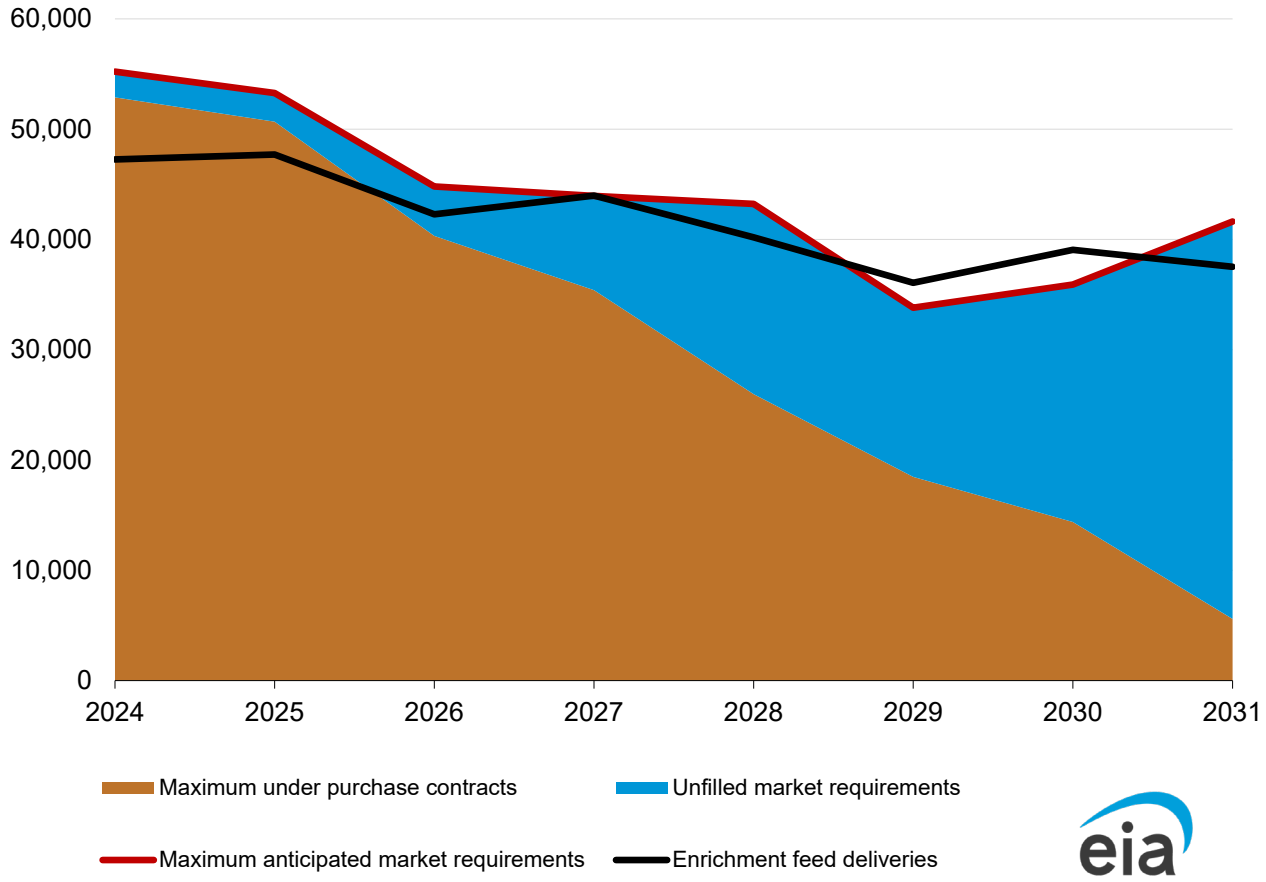
Year	Maximum under purchase contracts	Unfilled market requirements	Maximum anticipated market requirements	Enrichment feed deliveries
2024	52,884	2,334	55,218	47,252
2025	50,675	2,609	53,284	47,702
2026	40,320	4,478	44,798	42,283
2027	35,404	8,542	43,946	43,980
2028	25,972	17,253	43,225	40,192
2029	18,478	15,333	33,811	36,071
2030	14,388	21,520	35,909	39,058
2031	5,592	36,028	41,621	37,519
2032	W	W	38,948	37,327
2033	W	W	42,403	40,393
Total	**249,055**	**184,107**	**433,161**	**411,778**

Note: Totals may not equal sum of components because of independent rounding.

Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2023)

Figure 11. Maximum anticipated uranium market requirements of owners and operators of U.S. civilian nuclear power reactors, 2024–2031, at end of 2023

thousand pounds U_3O_8 equivalent



Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2023)

Table 13. Deliveries of uranium feed by owners and operators of U.S. civilian nuclear power reactors by enrichment country and delivery year, 2021–2023

thousand pounds U_3O_8 equivalent

	Feed deliveries in 2021			Feed deliveries in 2022			Feed deliveries in 2023		
Enrichment country	**U.S.-origin**	**Foreign-origin**	**Total**	**U.S.-origin**	**Foreign-origin**	**Total**	**U.S.-origin**	**Foreign-origin**	**Total**
China	0	W	W	0	0	0	0	0	0
France	W	W	W	W	W	W	W	W	W
Germany	W	W	4,255	W	W	W	W	W	W
Netherlands	W	W	3,405	0	2,670	2,670	W	W	2,874
Russia	0	617	617	0	2,867	2,867	0	3,757	3,757
United Kingdom	W	W	2,959	0	1,097	1,097	0	2,769	2,769
Europe [1]	W	W	W	0	6,409	6,409	0	4,591	4,591
Foreign total	**W**	**18,988**	**19,466**	**W**	**W**	**20,389**	**W**	**W**	**20,543**
United States	W	W	14,689	W	W	14,199	W	W	12,957
Total	**2,616**	**31,539**	**34,155**	**1,728**	**32,860**	**34,588**	**1,659**	**31,841**	**33,500**

W = Data withheld to avoid disclosure of individual company data.

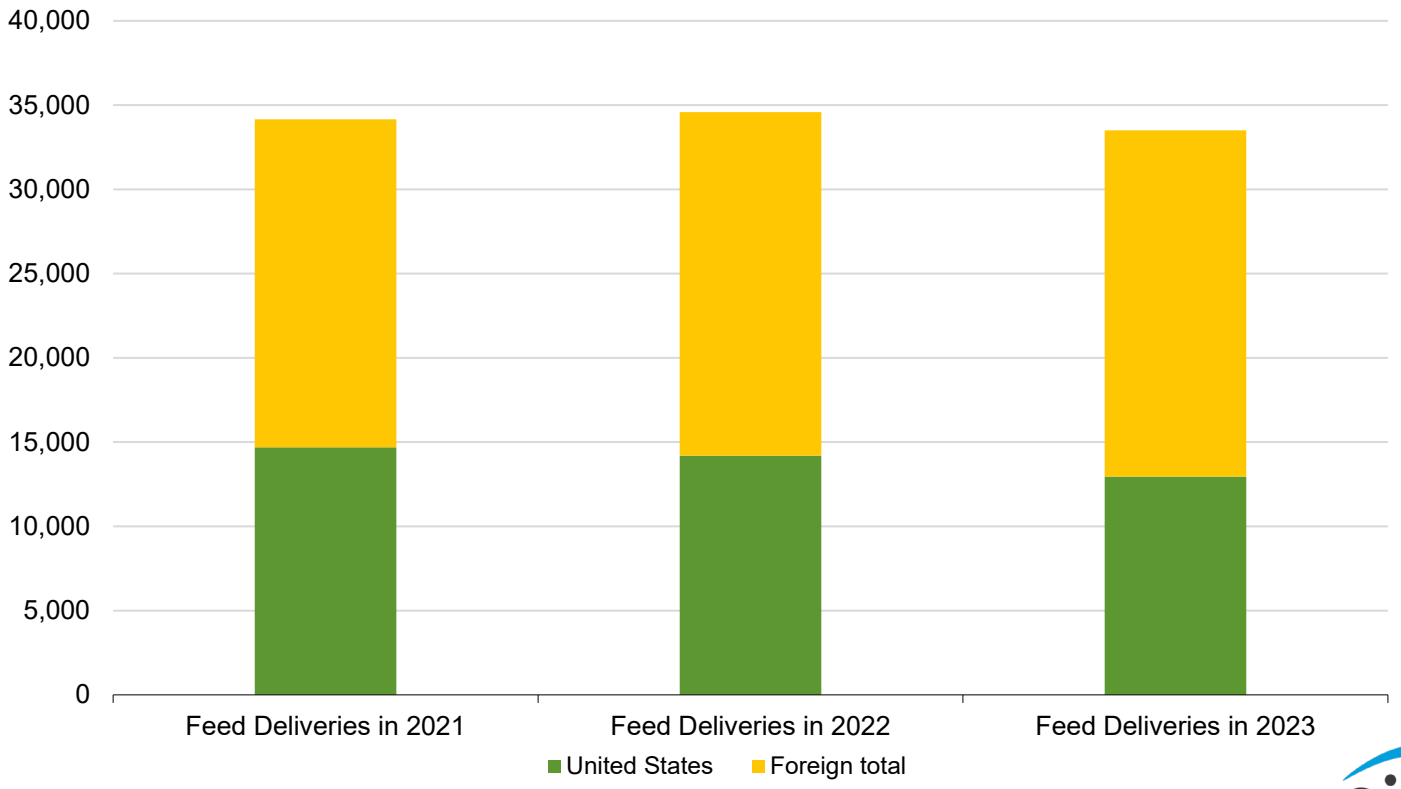
[1] Specific country in Europe was not reported.

Note: Totals may not equal sum of components because of independent rounding.

Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2021–2023)

Figure 12. Deliveries of uranium feed for U.S. and foreign enrichment by owners and operators of U.S. civilian nuclear power reactors by delivery year, 2021–2023

thousand pounds U_3O_8 equivalent



Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2021–2023)

Table 14. Deliveries of uranium feed for enrichment by owners and operators of U.S. civilian nuclear power reactors by origin country and delivery year, 2021–2023

thousand pounds U_3O_8 equivalent

	Deliveries in 2021			Deliveries in 2022			Deliveries in 2023		
Origin country of feed	**U.S. enrichment**	**Foreign enrichment**	**Total**	**U.S. enrichment**	**Foreign enrichment**	**Total**	**U.S. enrichment**	**Foreign enrichment**	**Total**
Australia	2,709	3,625	6,334	1,618	2,610	4,228	3,495	2,346	5,840
Brazil	0	0	0	0	0	0	0	0	0
Canada	5,013	4,254	9,266	8,382	5,342	13,724	4,765	7,792	12,556
China	0	0	0	0	0	0	0	0	0
Czech Republic	W	W	W	0	0	0	0	0	0
Kazakhstan	3,039	7,919	10,958	1,353	6,821	8,174	1,336	4,030	5,366
Malawi	W	W	W	W	W	W	0	0	0
Namibia	W	W	819	W	W	W	W	W	1,320
Niger	W	W	1,686	W	W	W	W	W	W
Portugal	0	0	0	0	0	0	0	0	0
Russia	W	W	W	W	W	W	W	W	3,318
South Africa	W	W	W	W	W	W	W	W	W
Ukraine	0	0	0	0	0	0	0	0	0
United Kingdom	0	0	0	0	0	0	0	0	0
Uzbekistan	W	W	W	795	1,056	1,851	640	1,944	2,584
unknown/other	0	0	0	0	0	0	0	0	0
Foreign total	**W**	**W**	**W**	**W**	**W**	**W**	**W**	**W**	**W**
United States	W	W	W	W	W	W	W	W	W
Total	**14,689**	**19,466**	**34,155**	**14,199**	**20,389**	**34,588**	**12,957**	**20,543**	**33,500**

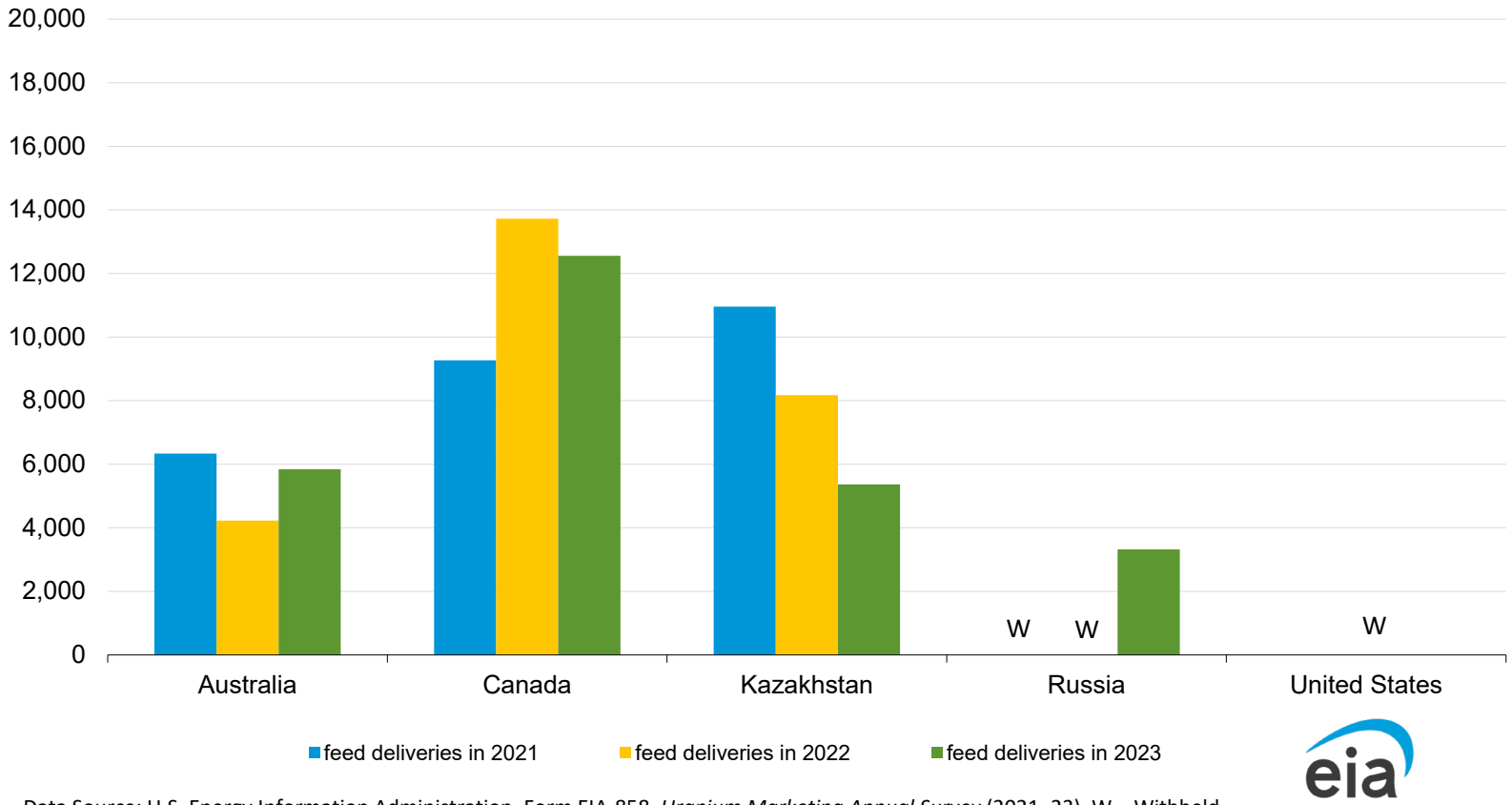
W = Data withheld to avoid disclosure of individual company data.

Note: Totals may not equal sum of components because of independent rounding.

Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2021–23)

Figure 13. Deliveries of uranium feed for enrichment by owners and operators of U.S. civilian nuclear power reactors by selected origin country of feed and delivery year, 2021–2023

thousand pounds U_3O_8 equivalent



Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2021–23). W = Withheld

Table 15. Shipments of uranium feed by owners and operators of U.S. civilian nuclear power reactors to domestic and foreign enrichment suppliers, 2024–2033

thousand pounds U_3O_8 equivalent

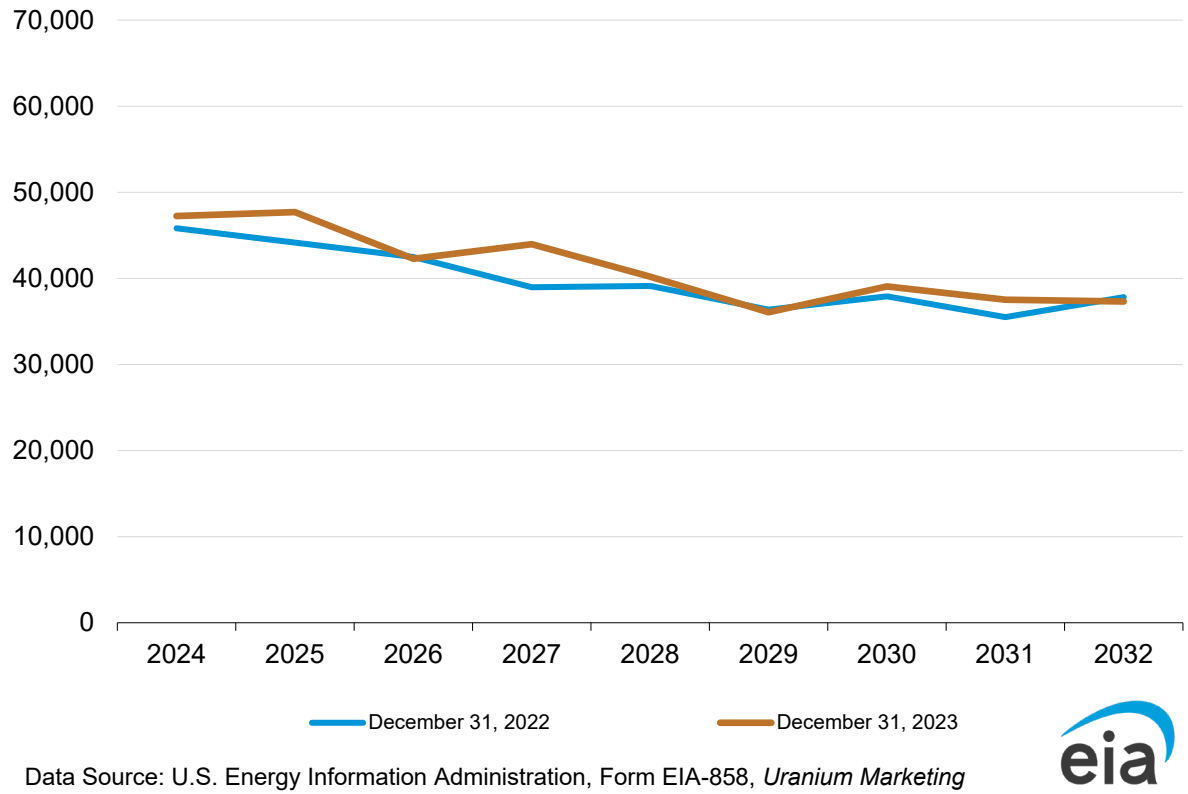
	Amount of feed to be shipped		Change from 2022 to 2023	
Year of shipment	As of December 31, 2022	As of December 31, 2023	Annual	Cumulative
2024	45,823	47,252	1,429	1,429
2025	44,166	47,702	3,536	4,965
2026	42,489	42,283	-206	4,759
2027	38,976	43,980	5,004	9,763
2028	39,116	40,192	1,076	10,839
2029	36,380	36,071	-309	10,530
2030	37,919	39,058	1,139	11,669
2031	35,501	37,519	2,018	13,687
2032	37,821	37,327	-494	13,193
2033	-	40,393	--	--

- = No data reported. -- = Not applicable.

Note: Totals may not equal sum of components because of independent rounding.
Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2022–23)

Figure 14. Shipments of uranium feed by owners and operators of U.S. civilian nuclear power reactors to domestic and foreign enrichment suppliers, 2024–2032

thousand pounds U_3O_8 equivalent



Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2022–23)

Table 16. Purchases of enrichment services by owners and operators of U.S. civilian nuclear power reactors by origin country and year, 2019–2023

thousand separative work units (SWU)

Country of enrichment service (SWU-origin)	2019	2020	2021	2022	2023
China	W	W	W	W	W
France	W	W	W	W	1,839
Germany	1,238	1,175	1,825	1,763	855
Netherlands	1,367	1,885	1,583	1,303	1,217
Russia	3,087	3,220	3,953	3,409	4,141
United Kingdom	1,262	1,218	2,366	1,593	1,021
Europe [1]	W	W	W	W	W
Other [2]	W	W	W	W	W
Foreign total	**7,992**	**10,012**	**11,481**	**10,301**	**10,926**
United States	5,289	4,132	2,736	3,876	4,313
Total	**13,281**	**14,144**	**14,217**	**14,176**	**15,240**
Average price (US$ per SWU)	**109.54**	**99.51**	**99.54**	**101.03**	**106.97**

W = Data withheld to avoid disclosure of individual company data.

[1] Specific country in Europe was not reported.

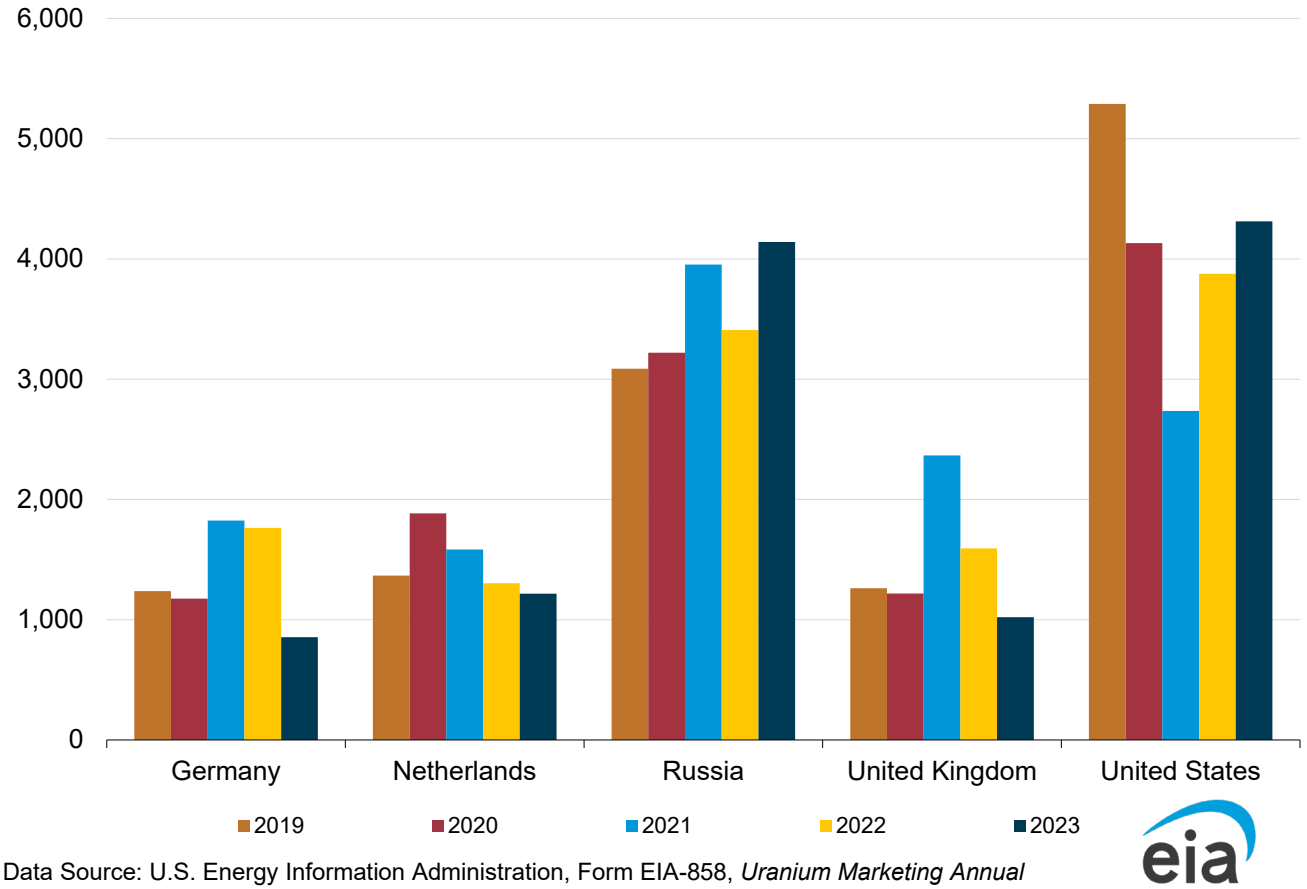
[2] Specific country was not reported.

Notes: Totals may not equal sum of components because of independent rounding. Average prices are not adjusted for inflation.

Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2019–23)

Figure 15. Purchases of enrichment services by owners and operators of U.S. civilian nuclear power reactors by selected origin country and year, 2019–2023

thousand separative work units (SWU)



Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2019–23)

Table 17. Purchases of enrichment services by owners and operators of U.S. civilian nuclear power reactors by contract type in delivery year, 2023

thousand separative work units (SWU)

Enrichment service contract type	U.S. enrichment	Foreign enrichment	Total
Spot	117	1,715	1,832
Long-term	4,196	9,212	13,408
Total	**4,313**	**10,926**	**15,240**

W = Data withheld to avoid disclosure of individual company data.

Note: Totals may not equal sum of components because of independent rounding.

Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2023)

Table 18. Uranium in fuel assemblies loaded into U.S. civilian nuclear power reactors by year, 2019–2023

thousand pounds U_3O_8 equivalent

Origin of uranium	2019	2020	2021	2022	P2023
Domestic-origin uranium	4,051	8,678	3,289	1,507	W
Foreign-origin uranium	39,194	39,953	41,111	42,904	W
Total	**43,245**	**48,631**	**44,400**	**44,411**	**43,913**

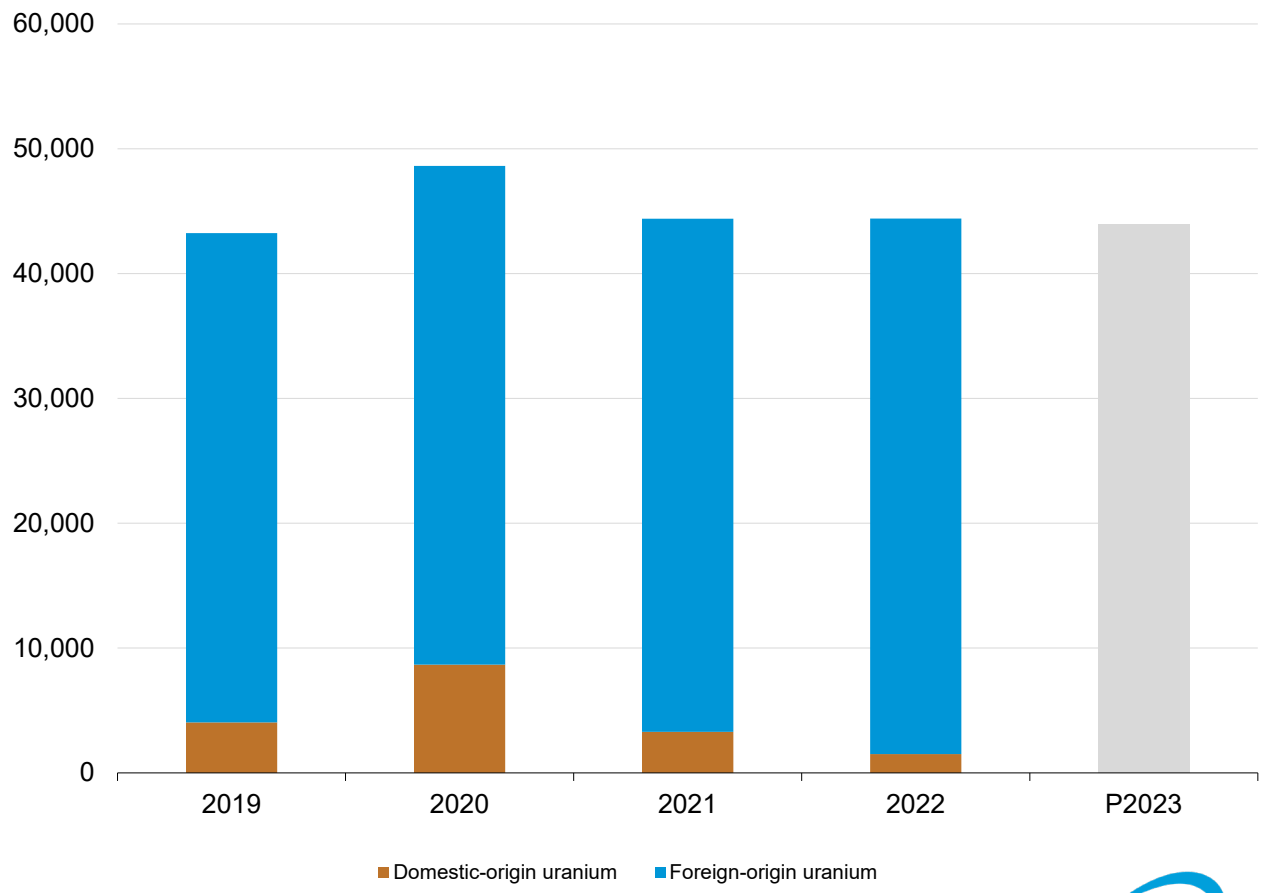
P = Preliminary data. Final 2022 fuel assembly data reported in the 2023 survey.

Notes: Includes only unirradiated uranium in new fuel assemblies loaded into reactors during the year. Does not include uranium removed from reactors that subsequently will be reloaded. Totals may not equal sum of components because of independent rounding.

Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2019–2023)

Figure 16. Uranium in fuel assemblies loaded into U.S. civilian nuclear power reactors by year, 2019–2023

thousand pounds U_3O_8 equivalent



P = Preliminary data. Final 2022 fuel assembly data reported in the 2023 survey.
Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2019–2023)

Table 19. Foreign purchases of uranium by U.S. suppliers and owners and operators of U.S. civilian nuclear power reactors by delivery year, 2019–2023

thousand pounds U_3O_8 equivalent; dollars per pound U_3O_8 equivalent

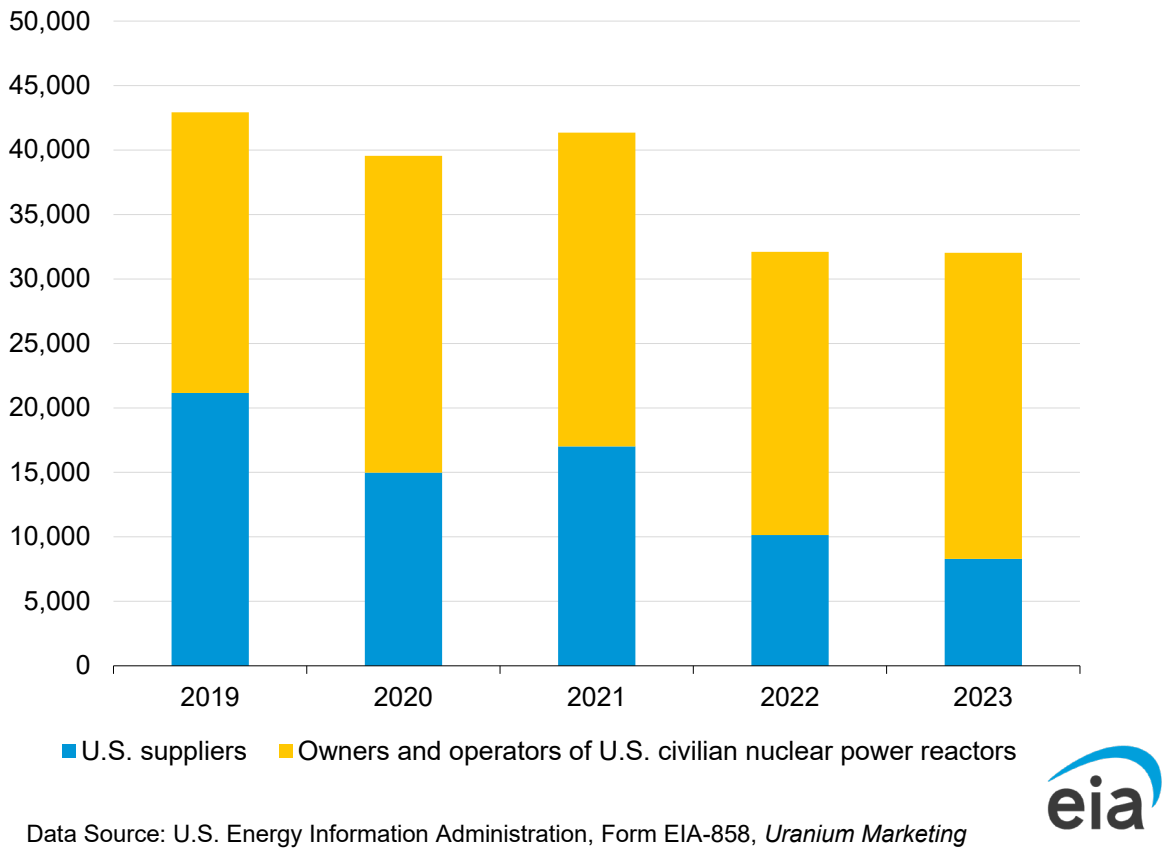
Deliveries	2019	2020	2021	2022	2023
U.S. suppliers					
Foreign purchases	21,160	14,983	17,021	10,145	8,295
Weighted-average price	33.17	31.27	33.19	42.48	40.04
Owners and operators of U.S. civilian nuclear power reactors					
Foreign purchases	21,763	24,572	24,327	21,961	23,740
Weighted-average price	36.28	35.33	33.30	39.40	42.48
Total					
Foreign purchases	42,923	39,555	41,348	32,107	32,035
Weighted-average price	34.77	33.79	33.26	40.31	41.88

Notes: Totals may not equal sum of components because of independent rounding. Foreign Purchase: A uranium purchase of foreign-origin uranium from a firm located outside of the United States. Weighted-average prices are not adjusted for inflation.

Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2019–2023)

Figure 17. Foreign purchases of uranium by U.S. suppliers and owners and operators of U.S. civilian nuclear power reactors by delivery year, 2019–2023

thousand pounds U_3O_8 equivalent



Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2019–2023)

Table 20. U.S. broker and trader purchases of uranium by origin, supplier, and delivery year, 2019–2023

thousand pounds U_3O_8 equivalent; dollars per pound U_3O_8 equivalent

Deliveries	2019	2020	2021	2022	2023
Received U.S.-origin uranium					
Purchases	W	W	938	393	W
Weighted-average price	W	W	42.71	43.64	W
Received foreign-origin uranium					
Purchases	W	W	42,537	31,304	W
Weighted-average price	W	W	34.94	43.87	W
Total received by U.S. brokers and traders					
Purchases	**38,394**	**34,411**	**43,474**	**31,698**	**21,915**
Weighted-average price	**33.09**	**30.14**	**35.10**	**43.87**	**50.92**
Received from foreign suppliers					
Purchases	20,757	14,436	16,637	9,620	7,646
Weighted-average price	33.43	31.51	33.53	42.36	39.28

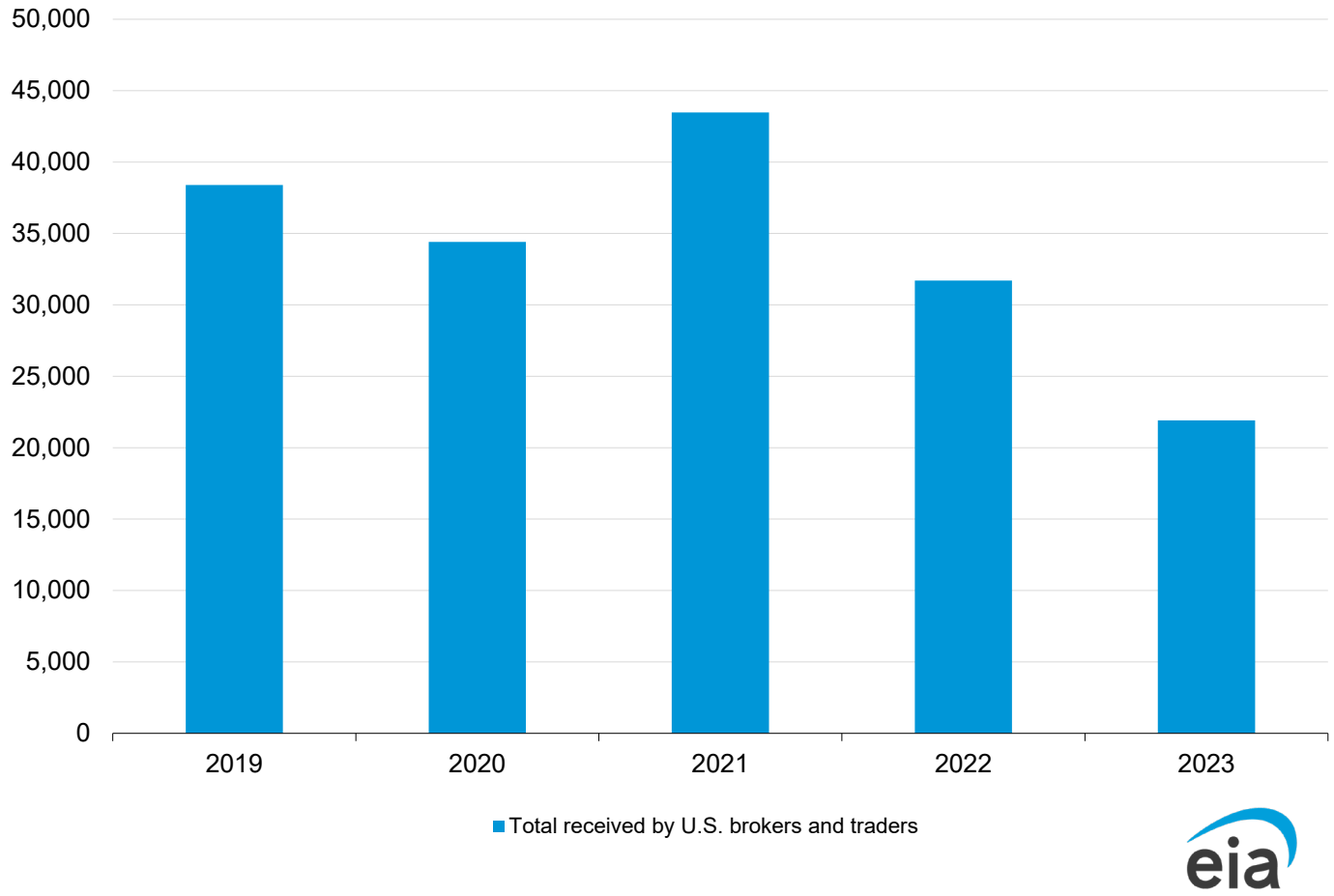
W = Data withheld to avoid disclosure of individual company data.

Notes: Totals may not equal sum of components because of independent rounding. Weighted-average prices are not adjusted for inflation.

Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2019–2023)

Figure 18. U.S. broker and trader purchases of uranium by delivery year, 2019–2023

thousand pounds U_3O_8 equivalent



Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2019–2023)

Table 21. Foreign sales of uranium from U.S. suppliers and owners and operators of U.S. civilian nuclear power reactors by origin and delivery year, 2019–2023

thousand pounds U_3O_8 equivalent; dollars per pound U_3O_8 equivalent

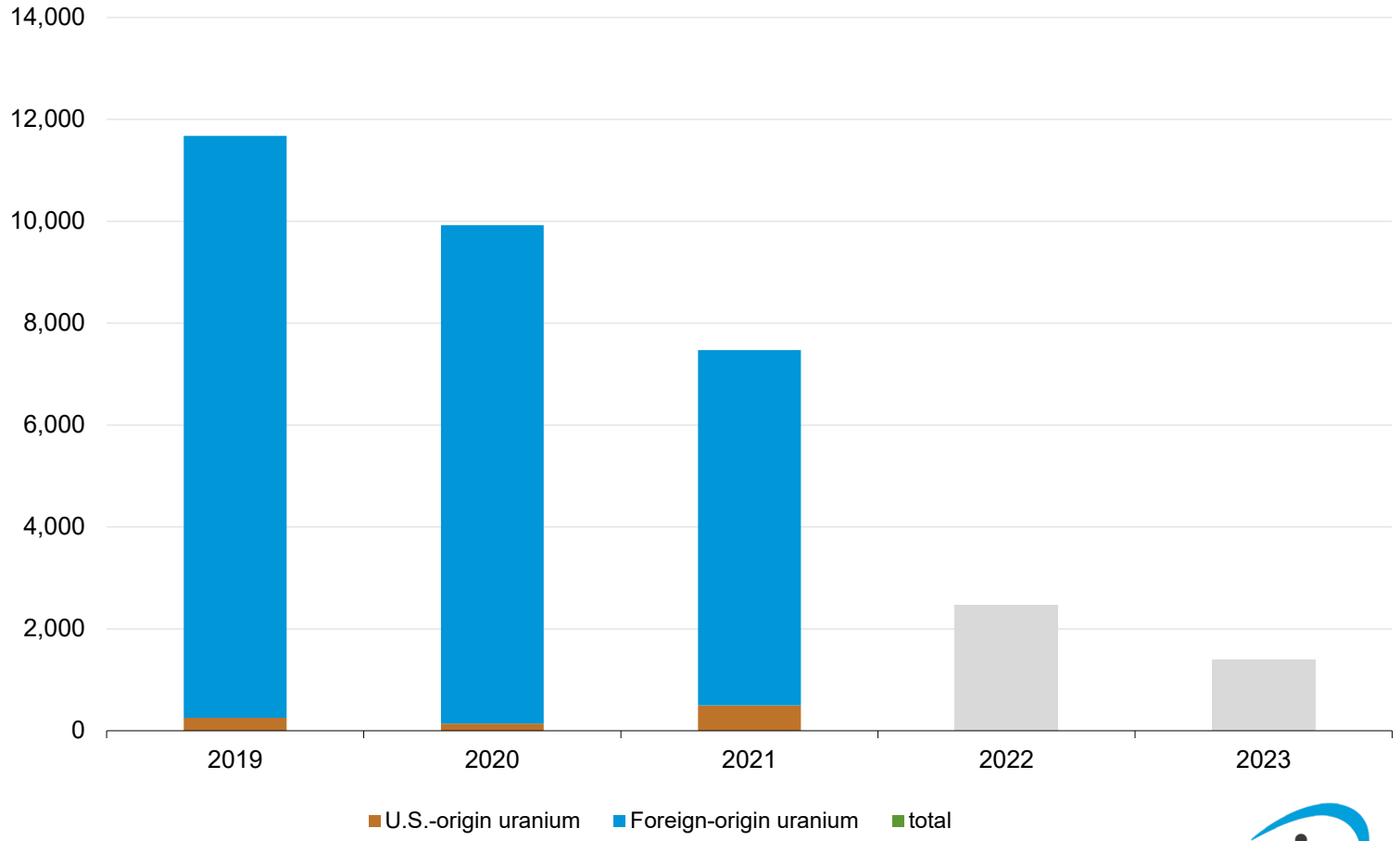
Deliveries to foreign suppliers and utilities	2019	2020	2021	2022	2023
U.S.-origin uranium					
Foreign sales	255	141	499	W	W
Weighted-average price	25.49	29.09	46.74	W	W
Foreign-origin uranium					
Foreign sales	11,424	9,781	6,973	W	W
Weighted-average price	27.20	29.58	35.04	W	W
Total sent:					
Foreign sales	**11,679**	**9,922**	**7,471**	**2,464**	**1,392**
Weighted-average price	**27.16**	**29.57**	**35.82**	**54.65**	**71.56**
From owners and operators of U.S. civilian nuclear power reactors, U.S. producers, and other U.S. suppliers					
Foreign sales	3,466	990	W	W	W
Weighted-average price	25.76	37.53	W	W	W
From U.S. brokers and traders					
Foreign sales	8,213	8,932	W	W	W
Weighted-average price	27.75	28.69	W	W	W

Notes: *Other U.S. Suppliers* are U.S. converters, enrichers, and fabricators. Totals may not equal sum of components because of independent rounding. Foreign sale: A uranium sale to a firm located outside the United States. Weighted-average prices are not adjusted for inflation.

Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2019–2023)

Figure 19. Foreign sales of uranium from U.S. suppliers and owners and operators of U.S. civilian nuclear power reactors by origin and delivery year, 2019–2023

thousand pounds U_3O_8 equivalent



Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2019–2023)

Table 22. Inventories of natural and enriched uranium by material type as of end of year, 2019–2023

thousand pounds U_3O_8 equivalent

	Inventories at the end of the year				
Type of uranium inventory owned by	**2019**	**2020**	**2021**	**2022**	**P2023**
Owners and operators of U.S. civilian nuclear power reactors inventories	**113,146**	**106,863**	**108,503**	**102,409**	**109,998**
Uranium concentrate (U_3O_8)	24,350	21,868	19,726	18,878	21,055
Natural UF_6	40,375	37,806	36,400	31,075	30,932
Enriched UF_6	36,608	40,712	43,195	46,059	53,002
Fabricated fuel (not inserted into a reactor)	11,813	6,477	9,182	6,397	5,009
U.S. supplier inventories	**17,517**	**24,158**	**33,155**	**40,661**	**42,070**
Uranium concentrate (U_3O_8)	7,435	17,713	28,465	33,743	35,978
Natural UF_6	W	W	W	W	W
Enriched UF_6	W	W	W	W	W
Fabricated fuel (not inserted into a reactor)	0	0	0	0	0
Total Commercial Inventories	**130,662**	**131,020**	**141,658**	**143,070**	**152,068**

P = Preliminary data. Final 2022 inventory data reported in the 2023 survey.

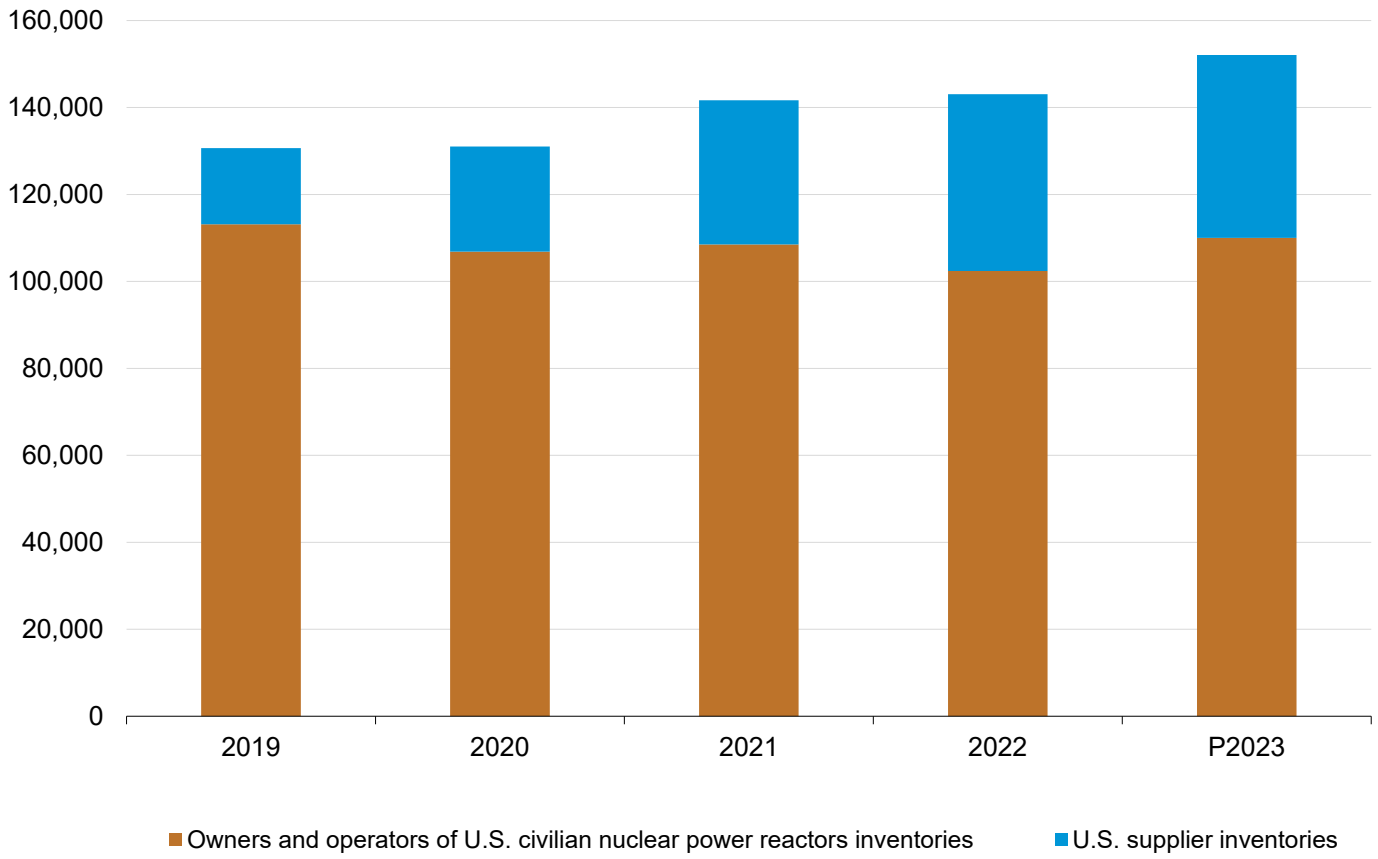
W = Data withheld to avoid disclosure of individual company data.

Note: Totals may not equal sum of components because of independent rounding.

Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2019–2023)

Figure 20. Commercial inventories of natural and enriched uranium as of end of year, 2019–2023

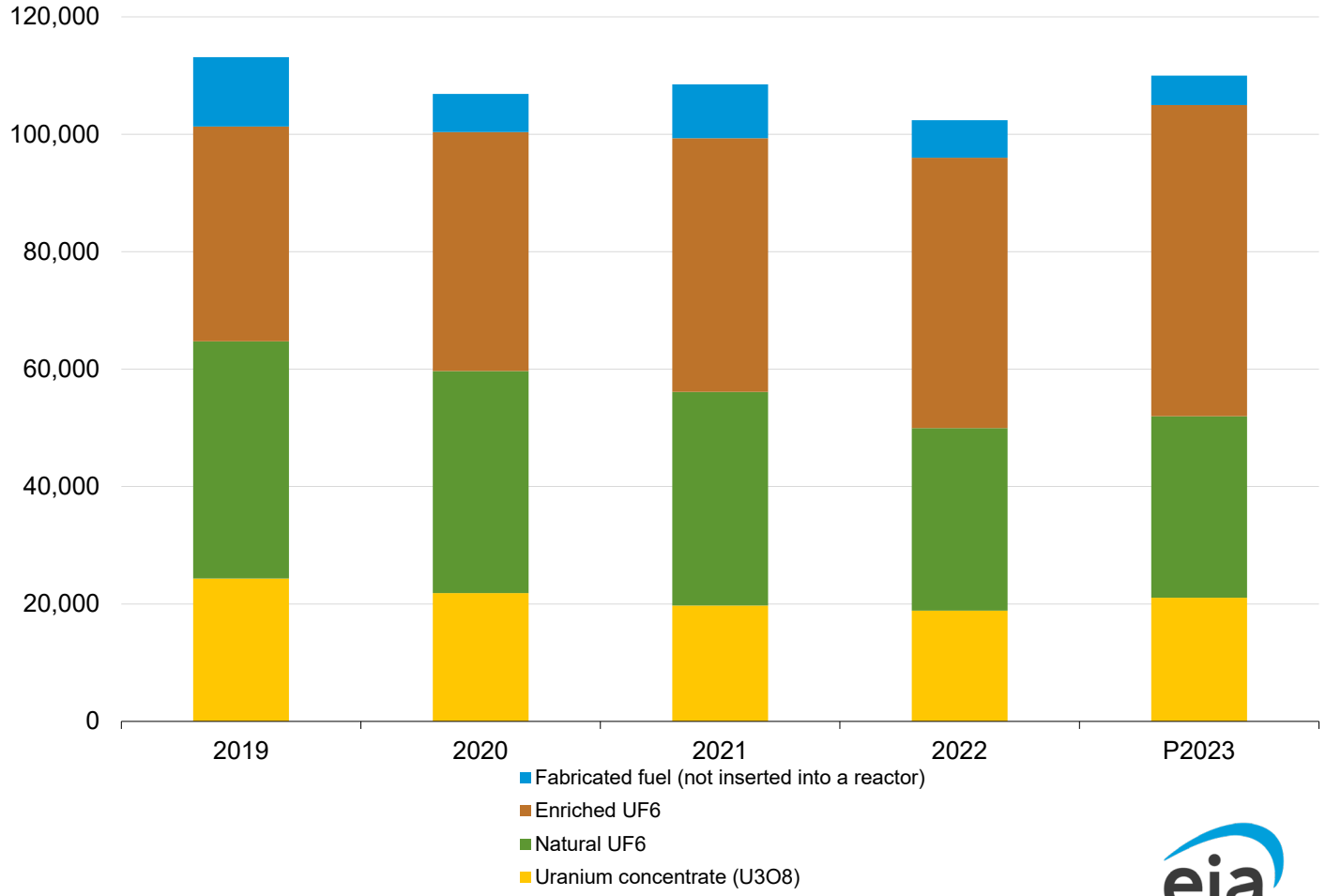
thousand pounds U_3O_8 equivalent



P = Preliminary data. Final 2022 inventory data reported in the 2023 survey.
Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2019–2023)

Figure 21. Owners and operators of U.S. civilian nuclear power reactors inventories by material type as of end of year, 2019–2023

thousand pounds U_3O_8 equivalent



P = Preliminary data. Final 2022 inventory data reported in the 2023 survey.
Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2020–2023)

Table 23. Inventories of uranium by owner as of end of year, 2019–2023

thousand pounds U_3O_8 equivalent

	Inventories at the End of Year				
Owner of uranium inventory	**2019**	**2020**	**2021**	**2022**	**P2023**
Owners and operators of U.S. civilian nuclear power reactors	113,146	106,863	108,503	102,409	109,998
U.S. brokers and traders	9,385	18,311	25,187	31,980	33,524
U.S. converter, enrichers, fabricators, and producers	8,132	5,846	7,969	8,681	8,546
Total commercial inventories	**130,662**	**131,020**	**141,658**	**143,070**	**152,068**

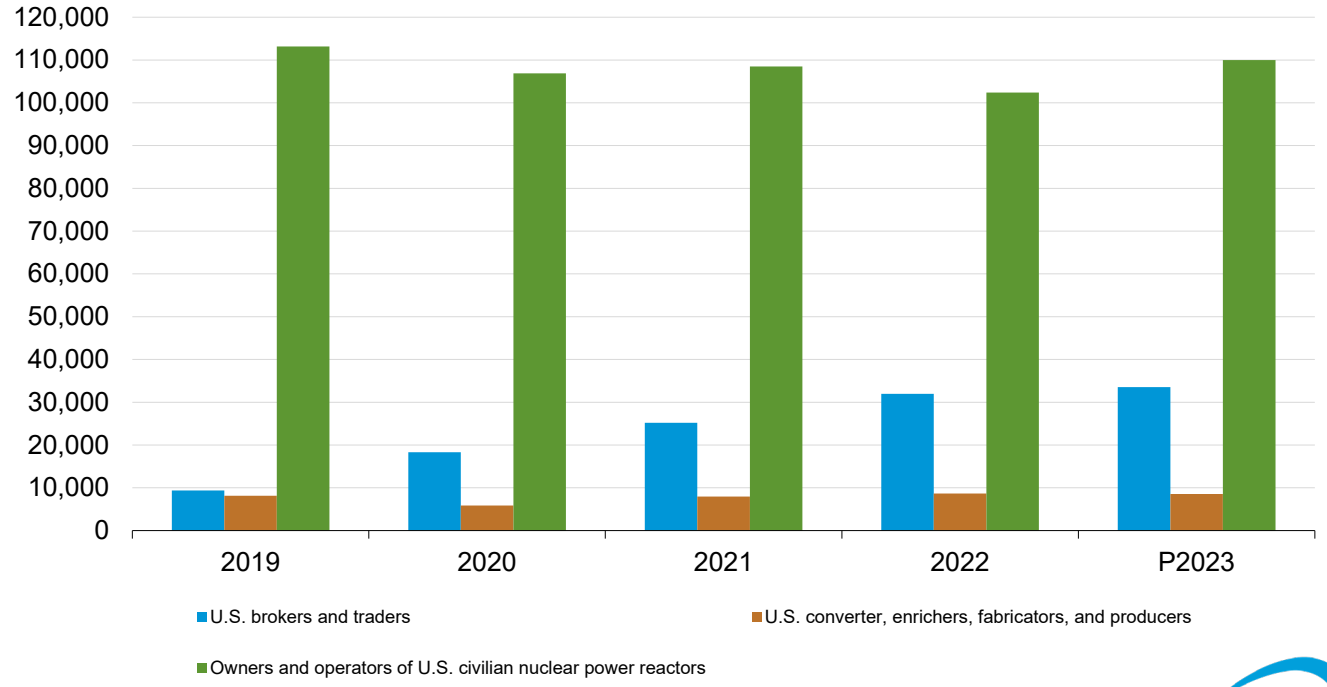
P = Preliminary data. Final 2022 inventory data reported in the 2023 survey.

Note: Totals may not equal sum of components because of independent rounding.

Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2020–2023)

Figure 22. Commercial inventories of uranium by owner as of end of year, 2019–2023

thousand pounds U_3O_8 equivalent



P=Preliminary data. Final 2022 inventory data reported in the 2023 survey.
Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2020–2023)

Table 24. Uranium sellers to owners and operators of U.S. civilian nuclear power reactors, 2021–2023

2021	2022	2023
AREVA / AREVA NC, Inc./ AREVA Resources Canada/Framatome	AREVA / AREVA NC, Inc./ AREVA Resources Canada/Framatome	AREVA / AREVA NC, Inc./ AREVA Resources Canada/Framatome
BHP Billiton Olympic Dam Corporation Pty Ltd	BHP Billiton Olympic Dam Corporation Pty Ltd	BHP Billiton Olympic Dam Corporation Pty Ltd
CAMECO	CAMECO	CAMECO
CGN Global Uranium Limited	CGN Global Uranium Limited	Curzon Uranium Trading Limited
ConverDyn	ConverDyn	Energy Fuels
Curzon Uranium Trading Limited	Curzon Uranium Trading Limited	Energy USA, Inc.
Energy USA, Inc.	Energy USA, Inc.	Framatome
Itochu Corporation / Itochu International	Idemitsu	Itochu Corporation / Itochu International
Joshua Energy DAC	Itochu Corporation / Itochu International	Kazatomprom
Kazatomprom	Joshua Energy DAC	MTM Trading, LLC
Louisiana Energy Services LLC	Kazatomprom	Nuclear Fuel Services, Inc.
Macquarie Bank	Louisiana Energy Services LLC	Orano
MTM Trading, LLC	Macquarie Bank	Quasar Resources
Nuclear Fuel Services, Inc.	MTM Trading, LLC	TENEX(Techsnabexport)
Nufcor International Limited	Nuclear Fuel Services, Inc.	Traxys North America, LLC
NUKEM, Inc. / RWE Nukem	Nufcor International Limited	U Co., Ltd.
NYNCO Trading	Orano	UG U.S.A., Inc.
Orano	Quasar Resources	USEC, Inc. (United States Enrichment Corporation)
Peninsula Energy / Strata Energy	Peninsula Energy / Strata Energy	Uranium One
Rio Tinto Uranium Limited	Rio Tinto Uranium Limited	WMC Energy BV
TENAM Corporation	TENAM Corporation	
TENEX(Techsnabexport)	TENEX(Techsnabexport)	
TEPCO Resources	TEPCO Resources	
TH Kazakatom AG	TH Kazakatom AG	
Traxys North America, LLC	Traxys North America, LLC	
U Co., Ltd.	U Co., Ltd.	
UG U.S.A., Inc.	UG U.S.A., Inc.	
USEC, Inc. (United States Enrichment Corporation)	Uranium One	
Uranium One	URENCO, Inc.	
URENCO, Inc.	Western Uranium Corp.	
Western Uranium Corp.	WMC Energy BV	
WMC Energy BV		

Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2021–2023)

Table 25. Enrichment service sellers to owners and operators of U.S. civilian nuclear power reactors, 2021–2023

2021	2022	2023
AREVA Enrichment Services, LLC / AREVA NC, Inc.	AREVA Enrichment Services, LLC / AREVA NC, Inc.	AREVA Enrichment Services, LLC / AREVA NC, Inc.
Centrus Energy Corp.	Centrus Energy Corp.	Centrus Energy Corp.
CNEIC (China Nuclear Energy Industry Corporation)	Energy Northwest	CNEIC (China Nuclear Energy Industry Corporation)
Energy Northwest	Itochu Corporation	LES, LLC (Louisiana Energy Services)
LES, LLC (Louisiana Energy Services)	LES, LLC (Louisiana Energy Services)	TENAM Corporation
Nukem, Inc.	TENAM Corporation	TENEX (Techsnabexport Joint Stock Company)
TENAM Corporation	TENEX (Techsnabexport Joint Stock Company)	URENCO, Inc. (Deutschland GmbH, Nederland B.V., UK Limited)
TENEX (Techsnabexport Joint Stock Company)	URENCO, Inc. (Deutschland GmbH, Nederland B.V., UK Limited)	USEC, Inc. (United States Enrichment Corporation)
URENCO, Inc. (Deutschland GmbH, Nederland B.V., UK Limited)	USEC, Inc. (United States Enrichment Corporation)	
USEC, Inc. (United States Enrichment Corporation)		
Westinghouse Electric Company, LLC		

Data Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2021–2023)