Independent Statistics & Analysis
U.S. Energy Information Administration

2019 Uranium Marketing Annual Report

May 2020

Independent Statistics & Analysis
www.eia.gov

U.S. Department of Energy
Washington, DC 20585

This report was prepared by the U.S. Energy Information Administration (EIA), the statistical and analytical agency within the U.S. Department of Energy. By law, EIA's data, analyses, and forecasts are independent of approval by any other officer or employee of the United States Government. The views in this report therefore should not be construed as representing those of the U.S. Department of Energy or other federal agencies.

Contacts

This report was prepared by the staff of the Electricity Supply & Uranium Statistics & Product Innovation Team. If you have questions about the preparation and content of this report, email us at InfoNuclearData@eia.gov.

Contents

Tables

Figures

Introduction

In this report, the U.S. Energy Information Administration (EIA) provides detailed data on uranium marketing activities in the United States from 2012 through 2019 and summary data back to 1995.

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 EIA's website.

Definitions for terms in this report are available in EIA's 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 48 million pounds U3O8e (equivalent[1]) of deliveries from U.S. suppliers and foreign suppliers during 2019, at a weighted-average price of $35.59 per pound U3O8e. The 2019 total of 48 million pounds U3O8e was 20% higher than the 2018 total of 40 million pounds U3O8e. The 2019 weighted-average price of $35.59 per pound U3O8e was 8% lower than the 2018 weighted-average price of $38.81 per pound U3O8e (Table 1).

Similar to recent years, the vast majority of uranium delivered in 2019 was of foreign-origin. Uranium originating in Kazakhstan, Russia, and Uzbekistan accounted for 42% of total uranium purchased by U.S. COOs in 2019. Canadian-origin uranium and Australian-originan uranium together accounted for 39% (Table 3).

COOs purchased three material types of uranium for 2019 deliveries from 35 sellers, one less seller than in 2018 (Table 4, Table 24). During 2019, 22% of the uranium delivered was purchased under spot contracts at a weighted-average price of $27.89 per pound. The remaining 78% was purchased under long-term contracts at a weighted-average price of $37.73 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 2019, COOs signed 34 new purchase contracts with deliveries in 2019 of 8.0 million pounds U3O8e at a weighted-average price of $26.34 per pound (Table 8).

[1]Uranium quantities are expressed in the unit of measure U3O8e (equivalent). U3O8e is triuranium octoxide (or uranium concentrate) and the equivalent uranium-component of uranium hexafluoride (UF6) and enriched uranium.

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 2019, the maximum uranium deliveries for 2020 through 2029 under existing purchase contracts for COOs totaled 181 million pounds U3O8e (Table 10). Also at the end of 2019, unfilled uranium market requirements for 2020 through 2029 totaled 207 million pounds U3O8e (Table 11). These contracted deliveries and unfilled market requirements combined represent the maximum anticipated market requirements of 388 million pounds U_3O_8e over the next 10 years for COOs.

Uranium feed, enrichment services, uranium loaded

In 2019, COOs delivered 38 million pounds U3O8e of natural uranium feed to U.S. and foreign enrichers. U.S. enrichment suppliers received 51% of the feed, and the remaining 49% was delivered to foreign enrichment suppliers (Table 13). Thirteen million separative work units (SWU)[2] were purchased under enrichment services contracts from 12 sellers in 2019, one less than in 2018 (Table 16, Table 25). The average price paid by the COOs for the 13 million SWU was $109.54 per SWU in 2019, compared with the 2018 average price of $115.42 per SWU. In 2019, the U.S.-origin SWU share was 40%, and the foreign-origin SWU accounted for the remaining 60%. Foreign-origin SWU included 23% from Russia, 10% from both the Netherlands and the United Kingdom and 9% from Germany (Table 16).

Uranium in fuel assemblies loaded into U.S. civilian nuclear power reactors during 2019 contained 43.2 million pounds U3O8, compared with 50.4 million pounds U3O8e loaded during 2018. During 2019, 9% of the uranium loaded during 2019 was U.S.-origin uranium, and 91% was foreign-origin uranium (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 42.9 million pounds U3O8e in 2019, and the weighted-average price was $34.77 per pound U3O8e (Table 19). U.S. suppliers and COOs also sold uranium to foreign suppliers. Together, foreign sales totaled 11.7 million pounds U3O8e in 2019, and the weighted-average price was $27.16 per pound U3O8e (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 127.1 million pounds U3O8e at the end of 2019, down 3% from 130.5 million pounds at the end of 2018. Commercial uranium inventories owned at the end of 2019 by COOs totaled 112.8 million pounds U3O8e, a 1% increase in inventories from the year-end 2018 level. Uranium inventories owned by U.S. suppliers (converters, enrichers,

[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 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).

fabricators, producers, brokers and traders) totaled 14.3 million pounds U3O8e at the end of 2019, down 26% from 2018 year-end levels (Table 22).

Table S1a. Uranium purchased by owners and operators of U.S. civilian nuclear power reactors, 1996–2019

million pounds U3O8 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]
1996	**47.3**	5.8	13.3	1.9	26.4	**8.3**	**39.0**	**9.1**	**38.3**
1997	**42.0**	5.7	9.9	3.0	23.4	**8.1**	**33.9**	**5.5**	**36.5**
1998	**42.7**	6.5	10.5	4.5	21.3	**7.2**	**35.6**	**7.8**	**34.9**
1999	**47.9**	5.2	10.4	5.6	26.8	**11.4**	**36.5**	**8.0**	**40.0**
2000	**51.8**	3.6	9.1	8.8	30.4	**13.3**	**38.6**	**10.4**	**39.1**
2001	**55.4**	2.3	11.7	11.4	30.0	**13.2**	**42.2**	**14.4**	**40.0**
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	**4.2**	**44.1**	**10.5**	**37.8**

- - = 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).

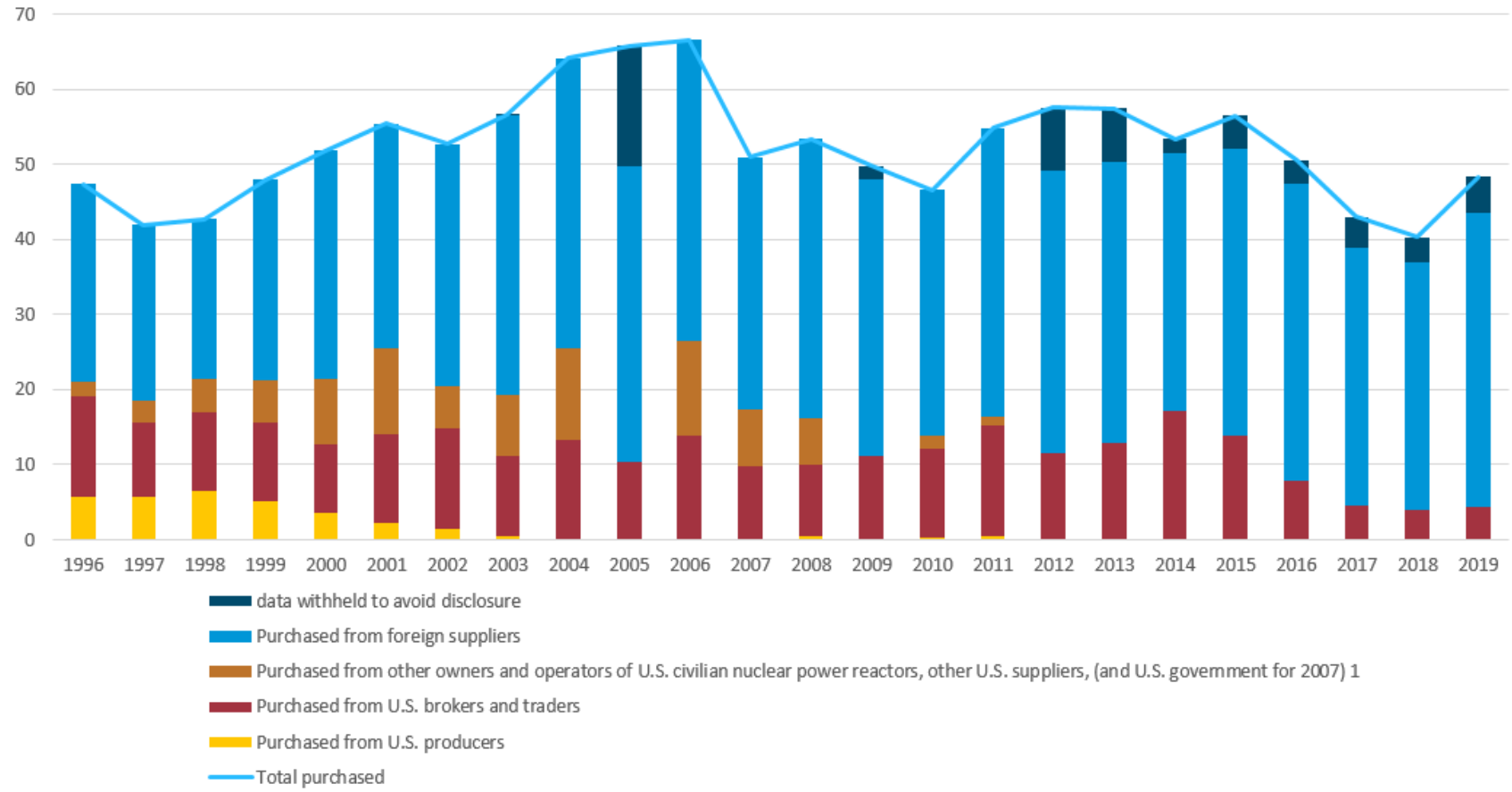
[3] Short-, Medium-, and Long-Term Contracts: One or more deliveries to occur after a year following contract execution (signed date).

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

Sources: U.S. Energy Information Administration: *Uranium Industry Annual*, Tables 10, 11 and 16, 1996-2002. Form EIA-858, *Uranium Marketing Annual Survey,* 2003-2019

Figure S1. Uranium purchased by owners and operators of U.S. civilian nuclear power reactors, 1996–2019

million pounds U3O8 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.

Sources: U.S. Energy Information Administration: *Uranium Industry Annual* reports, 1996–2002. Form EIA-858, *Uranium Marketing Annual Survey* 2003–2019.

Table S1b. Weighted-average price of uranium purchased by owners and operators of U.S. civilian nuclear power reactors, 1996–2019

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)
1996	**14.12**	14.20	13.36	14.98	14.45	**14.62**	**14.02**	**14.22**	**NA**
1997	**12.88**	13.60	12.31	W	12.91	**13.36**	**12.78**	**11.61**	**NA**
1998	**12.14**	13.61	11.95	W	11.97	**13.37**	**11.90**	**10.56**	**NA**
1999	**11.63**	13.93	11.54	W	11.47	**12.24**	**11.47**	**9.52**	**NA**
2000	**11.04**	14.81	11.28	10.45	10.65	**11.52**	**10.88**	**8.54**	**11.70**
2001	**10.15**	13.26	10.44	9.98	9.86	**10.50**	**10.05**	**7.92**	**10.96**
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**

- - = 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).

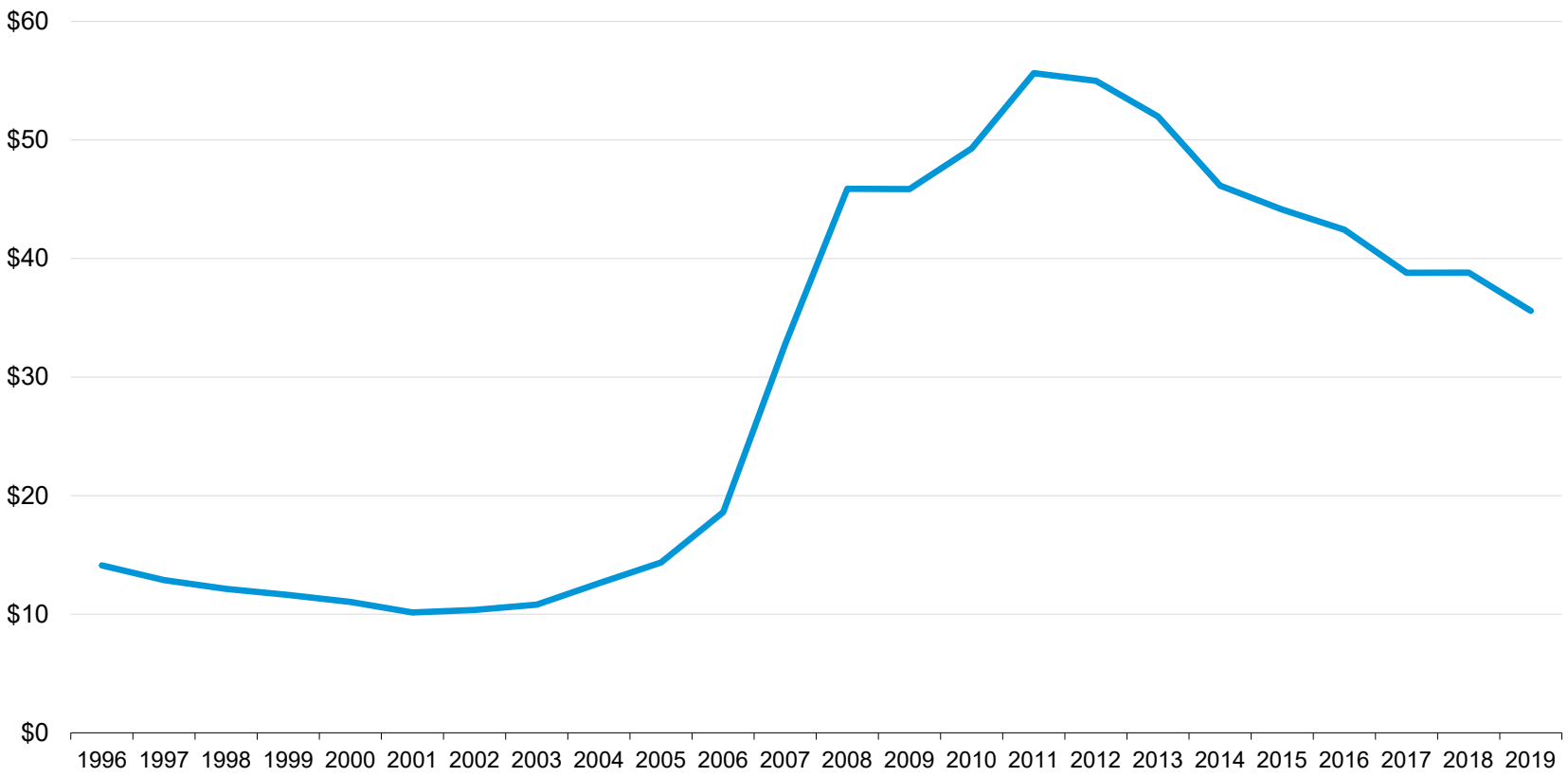
[3] Short-, Medium-, and Long-Term Contracts: One or more deliveries to occur after a year following contract execution (signed date).

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.

Sources: U.S. Energy Information Administration: *Uranium Industry Annual*, Tables 10, 11 and 16, 1996-2002. Form EIA-858, *Uranium Marketing Annual Survey*, 2002-2019

Figure S2. Weighted-average price of uranium purchased by owners and operators of U.S. civilian nuclear power reactors, 1996–2019

dollars per pound U3O8 equivalent



Sources: U.S. Energy Information Administration: *Uranium Industry Annual* reports, 1996-2002. Form EIA-858, *Uranium Marketing Annual Survey*, 2003-2019

Table S2. Uranium feed deliveries, enrichment services, and uranium loaded by owners and operators of U.S. civilian nuclear power reactors, 1996–2019

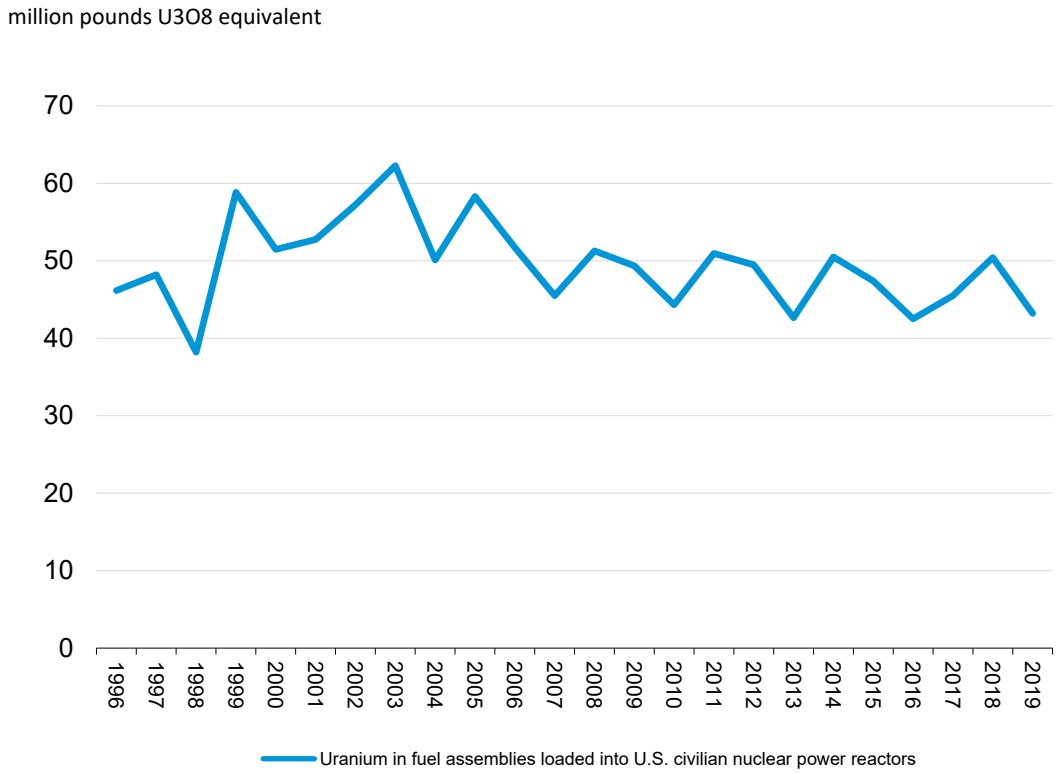
	Million pounds U3O8 equivalent		Million separative work units (SWU)			
Year	Feed deliveries by owners and operators of U.S. civilian nuclear power reactors	Uranium in fuel assemblies loaded into U.S. civilian nuclear power reactors	U.S.-origin enrichment services purchased	Foreign-origin enrichment services purchased	Total purchased enrichment services	Average price (US$ per SWU)
1996	49.1	46.2	8.0	3.2	**11.2**	-
1997	40.3	48.2	6.0	2.9	**8.9**	-
1998	40.6	38.2	5.7	4.4	**10.1**	-
1999	43.9	58.8	4.6	5.4	**10.0**	-
2000	47.8	51.5	5.2	6.6	**11.8**	-
2001	47.3	52.7	1.3	9.1	**10.4**	-
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**

- = 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, 1996-2002. Form EIA-858, *Uranium Marketing Annual Survey*, 2003-2019

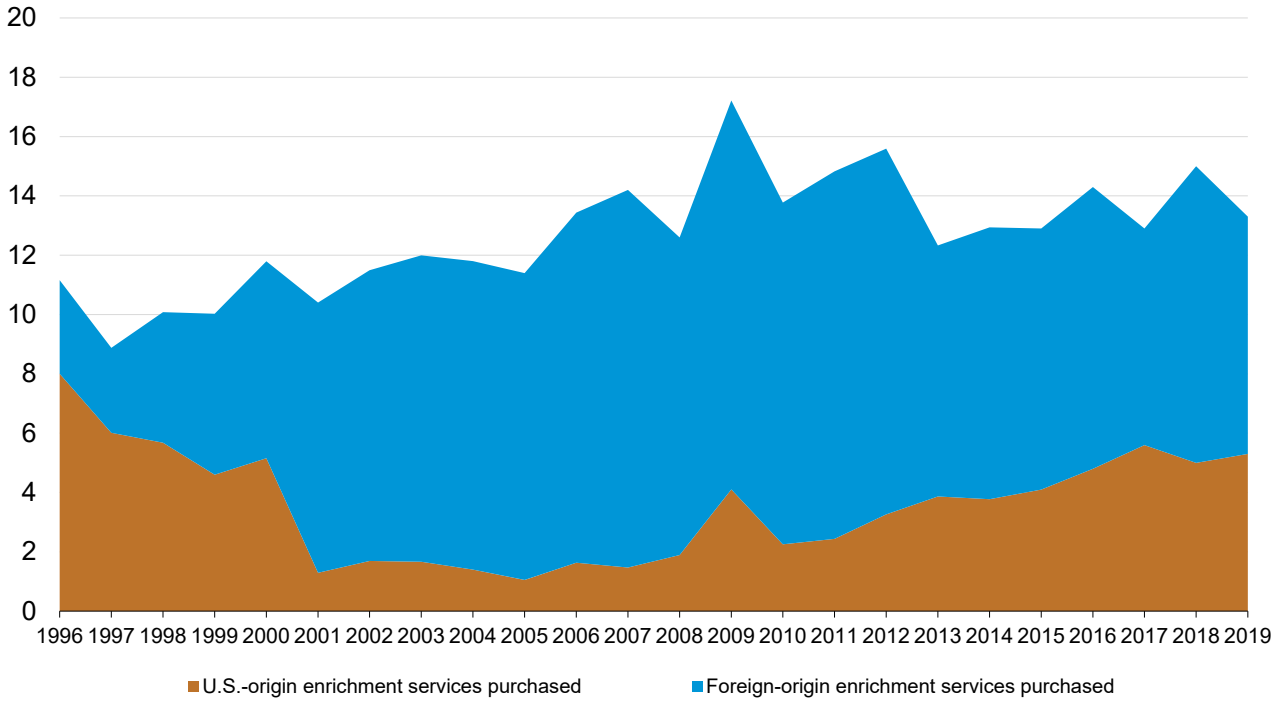
Figure S3. Uranium loaded into U.S. civilian nuclear power reactors, 1996–2019



Sources: U.S. Energy Information Administration: *Uranium Industry Annual* reports, 1996-2002. Form EIA-858, *Uranium Marketing Annual Survey*, 2003-2019

Figure S4. Uranium enrichment services purchased by owners and operators of U.S. civilian nuclear power reactors, 1996–2019

million separative work units (SWU)



Sources: U.S. Energy Information Administration: *Uranium Industry Annual* reports, 1996-2002.
Form EIA-858, *Uranium Marketing Annual Survey*, 2003-2019

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, 1996–2019

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
1996	21.7	23.7	**45.4**	**17.8**	**11.5**	13.9	66.1	**80.0**
1997	20.4	22.5	**43.0**	**15.7**	**17.0**	40.4	65.9	**106.2**
1998	22.6	21.1	**43.7**	**21.7**	**15.1**	70.7	65.8	**136.5**
1999	21.0	26.6	**47.6**	**19.2**	**8.5**	68.8	58.3	**127.1**
2000	17.4	27.5	**44.9**	**15.8**	**13.6**	56.5	54.8	**111.3**
2001	18.7	28.0	**46.7**	**18.3**	**11.7**	48.1	55.6	**103.8**
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**	14.3	112.8	**127.1**

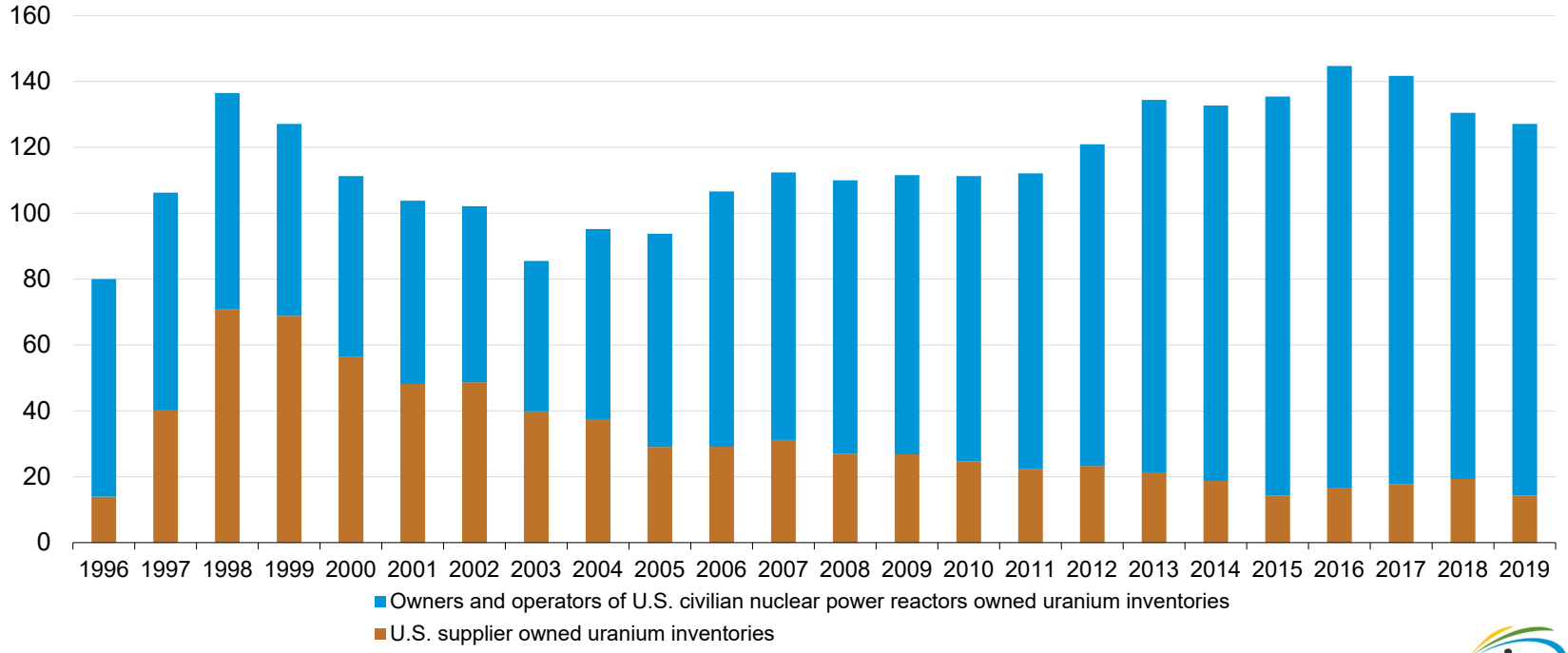
W = Data withheld to avoid disclosure of individual company data.

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.

Sources: U.S. Energy Information Administration: *Uranium Industry Annual*, Tables 28, 29, 30 and 31, 1996–2002. Form EIA-858, *Uranium Marketing Annual Survey*, 2003–2019

Figure S5. Total commercial uranium inventories of U.S. suppliers and owners and operators of U.S. civilian nuclear power reactors, 1996–2019

million pounds U3O8 equivalent



Sources: Energy Information Administration: *Uranium Industry Annual* reports, 1996–2002. Form EIA-858 *Uranium Marketing Annual Survey,* 2003–2019

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, 1996–2019

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)
1996	11.78	14.41	**13.15**	**11.78**	**14.20**
1997	10.61	12.89	**11.81**	**10.71**	**12.39**
1998	10.50	11.96	**11.19**	**10.77**	**12.05**
1999	9.42	11.45	**10.55**	**9.60**	**11.97**
2000	8.45	10.68	**9.84**	**8.61**	**8.48**
2001	8.98	9.87	**9.51**	**8.87**	**8.79**
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**

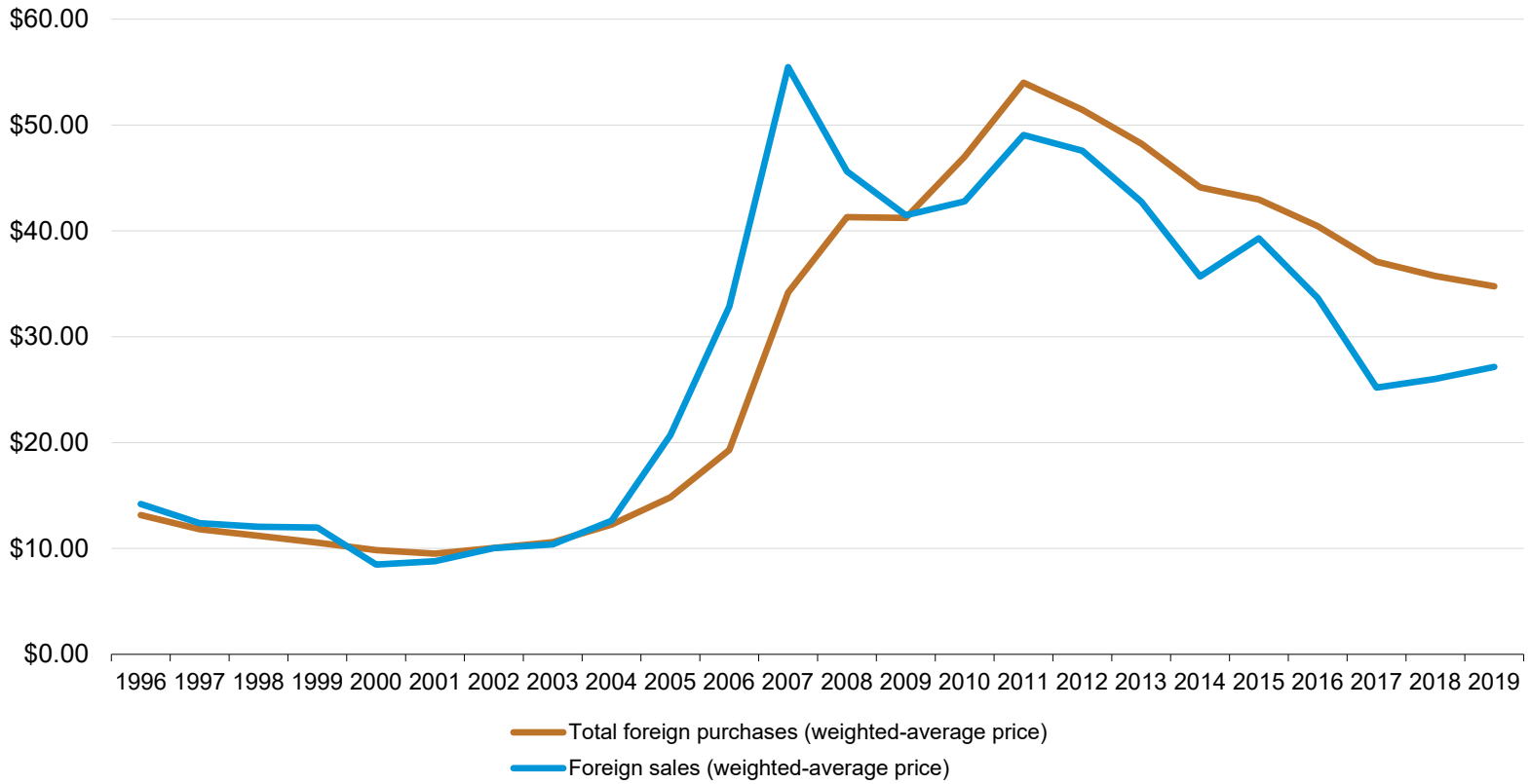
W = Data withheld to avoid disclosure of individual company data.

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.

Sources: U.S. Energy Information Administration: *Uranium Industry Annual,* Tables 28, 29, 30, and 31, 1996–2002. Form EIA-858, *Uranium Marketing Annual Survey* , 2003–2019

Figure S6. Weighted-average price of foreign purchases and foreign sales of uranium, 1996–2019

dollars per pound U3O8 equivalent



Sources: U.S. Energy Information Administration: *Uranium Industry Annual* reports, 1996–2002. Form EIA-858, *Uranium Marketing Annual Survey,* 2003–2019

Table 1. Uranium purchased by owners and operators of U.S. civilian nuclear power reactors by supplier and delivery year, 2014–2019

Deliveries	2014	2015	2016	2017	2018	2019
Purchased from U.S. producers						
Purchases of U.S.-origin and foreign-origin uranium	W	1,455	2,169	1,762	1,520	W
Weighted-average price	W	52.35	48.86	48.77	46.59	W
Purchased from U.S. brokers and traders						
Purchases of U.S.-origin and foreign-origin uranium	17,111	13,852	7,862	4,548	3,897	4,395
Weighted-average price	42.90	44.67	50.56	51.80	52.51	48.16
Purchased from other owners and operators of U.S. civilian nuclear power reactors						
Purchases	0	W	W	W	W	W
Weighted-average price	--	W	W	W	W	W
Purchased from other U.S. suppliers						
Purchases of U.S.-origin and foreign-origin uranium	W	W	W	W	W	W
Weighted-average price	W	W	W	W	W	W
Purchased from foreign suppliers						
Purchases of U.S.-origin and foreign-origin uranium	34,404	38,184	39,469	34,384	33,044	39,208
Weighted-average price	47.62	44.66	44.85	41.16	39.82	36.28
Total purchased by owners and operators of U.S. civilian nuclear power reactors						
Purchases of U.S.-origin and foreign-origin uranium	**53,349**	**56,524**	**50,595**	**43,033**	**40,293**	**48,328**
Weighted-average price	**46.16**	**44.13**	**42.43**	**38.80**	**38.81**	**35.59**

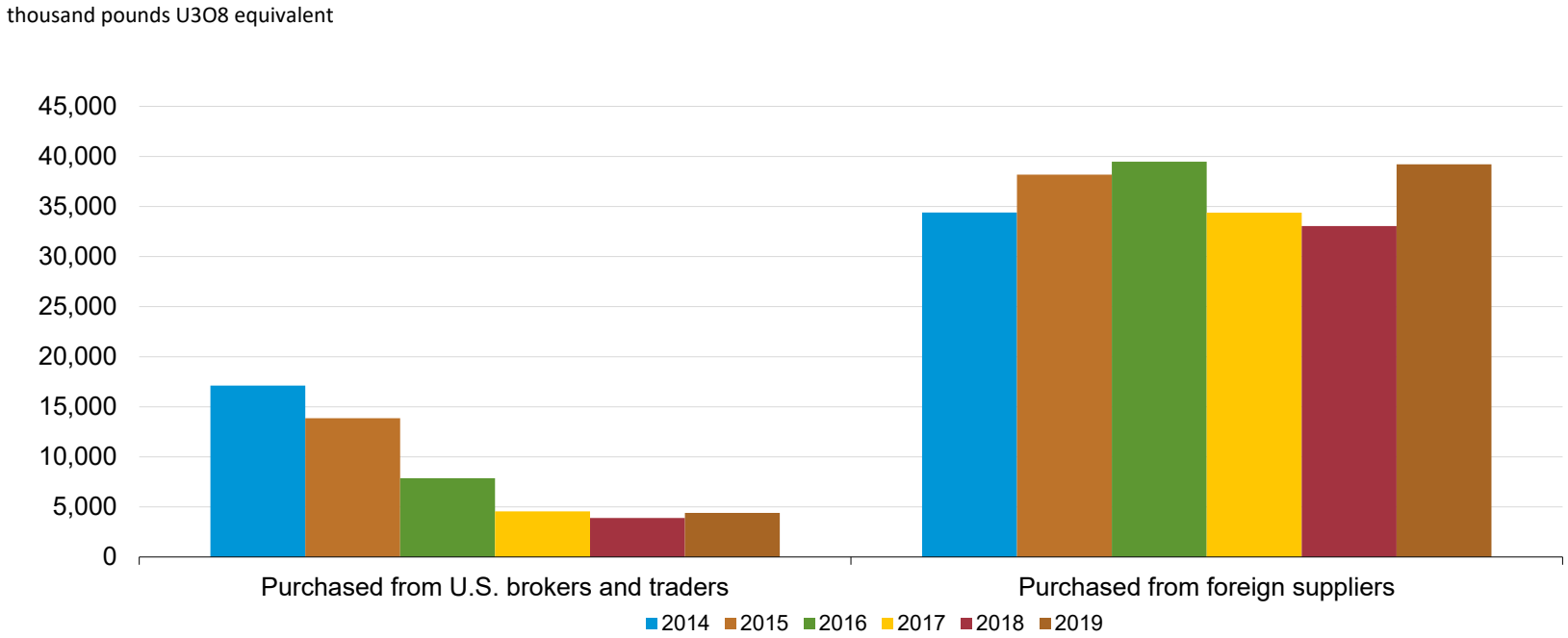
W = Data withheld to avoid disclosure of individual company data.

-- = 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.

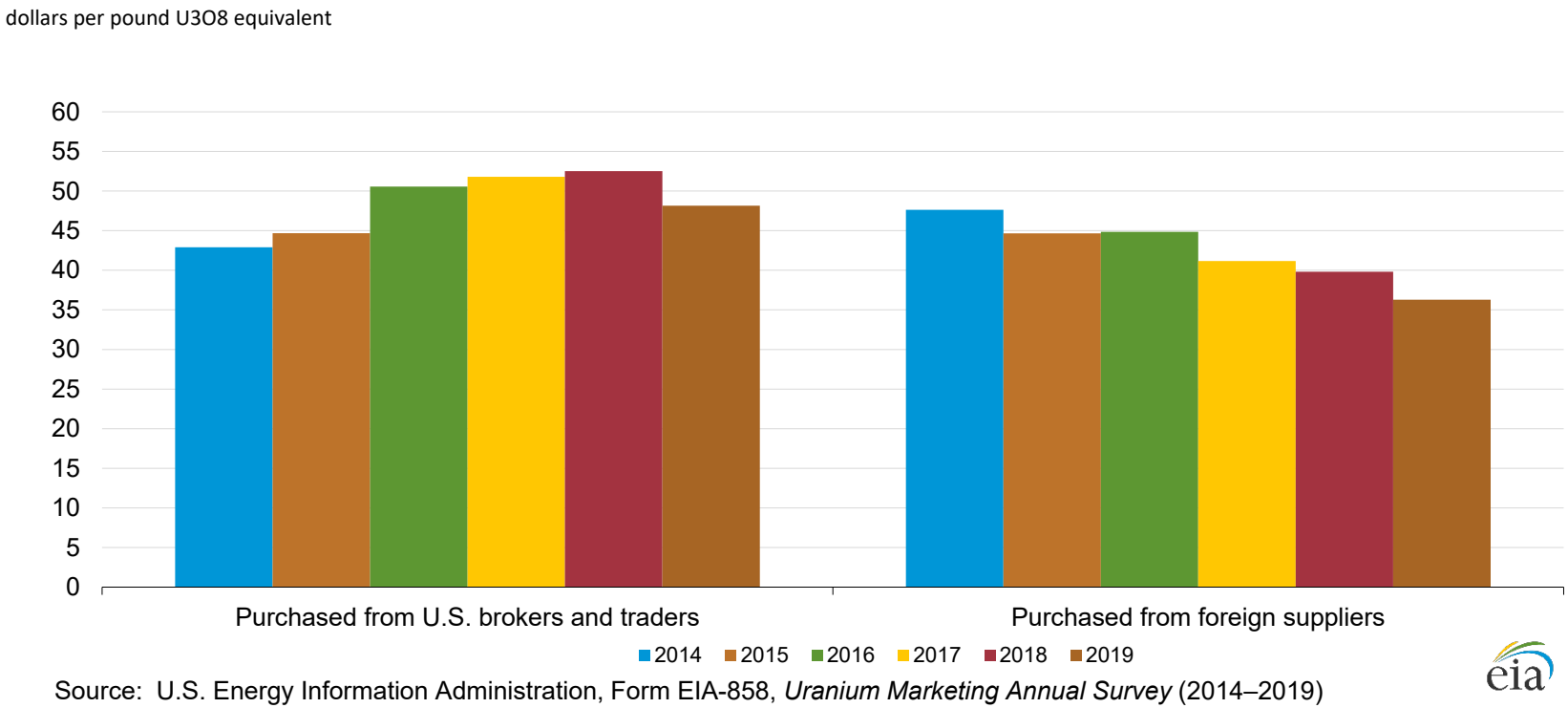
Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2014–2019)

Figure 1. Uranium purchased by owners and operators of U.S. civilian nuclear power reactors by supplier and delivery year, 2014–2019



Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2014–2019)

Figure 2. Weighted-average price of uranium purchased by owners and operators of U.S. civilian nuclear power reactors by supplier and delivery year, 2014–2019



Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2014–2019)

Table 2. Uranium purchased by owners and operators of U.S. civilian nuclear power reactors by origin and delivery year, 2014–2019

thousand pounds U3O8 equivalent; dollars per pound U3O8 equivalent

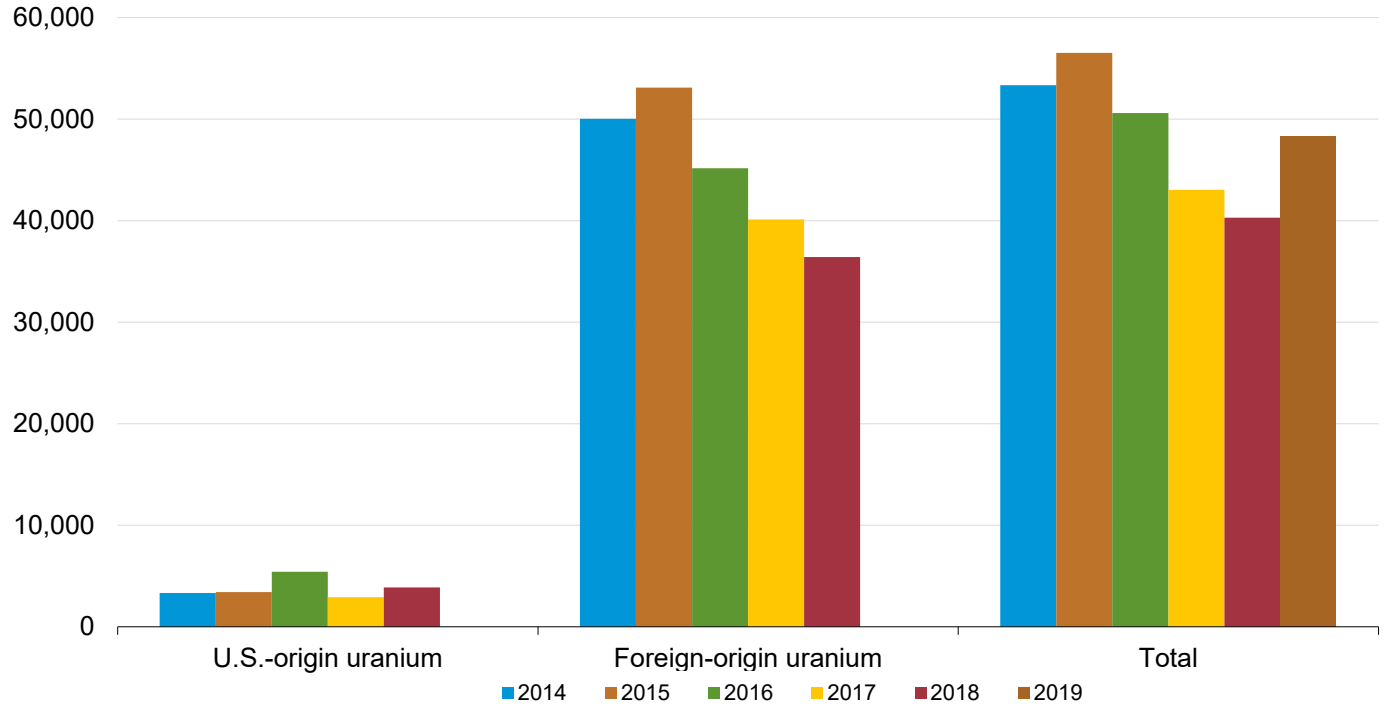
Deliveries	2014	2015	2016	2017	2018	2019
U.S.-origin uranium						
Purchases	3,316	3,419	5,424	2,916	3,878	W
Weighted-average price	48.11	43.86	43.92	35.55	45.26	W
Foreign-origin uranium						
Purchases	50,033	53,106	45,171	40,117	36,415	W
Weighted-average price	46.03	44.14	42.26	39.04	38.11	W
Total						
Purchases	**53,349**	**56,524**	**50,595**	**43,033**	**40,293**	**48,328**
Weighted-average price	**46.16**	**44.13**	**42.43**	**38.80**	**38.81**	**35.59**

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

Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2014–2019)

Figure 3. Uranium purchased by owners and operators of U.S. civilian nuclear power reactors by origin and delivery year, 2014–2019

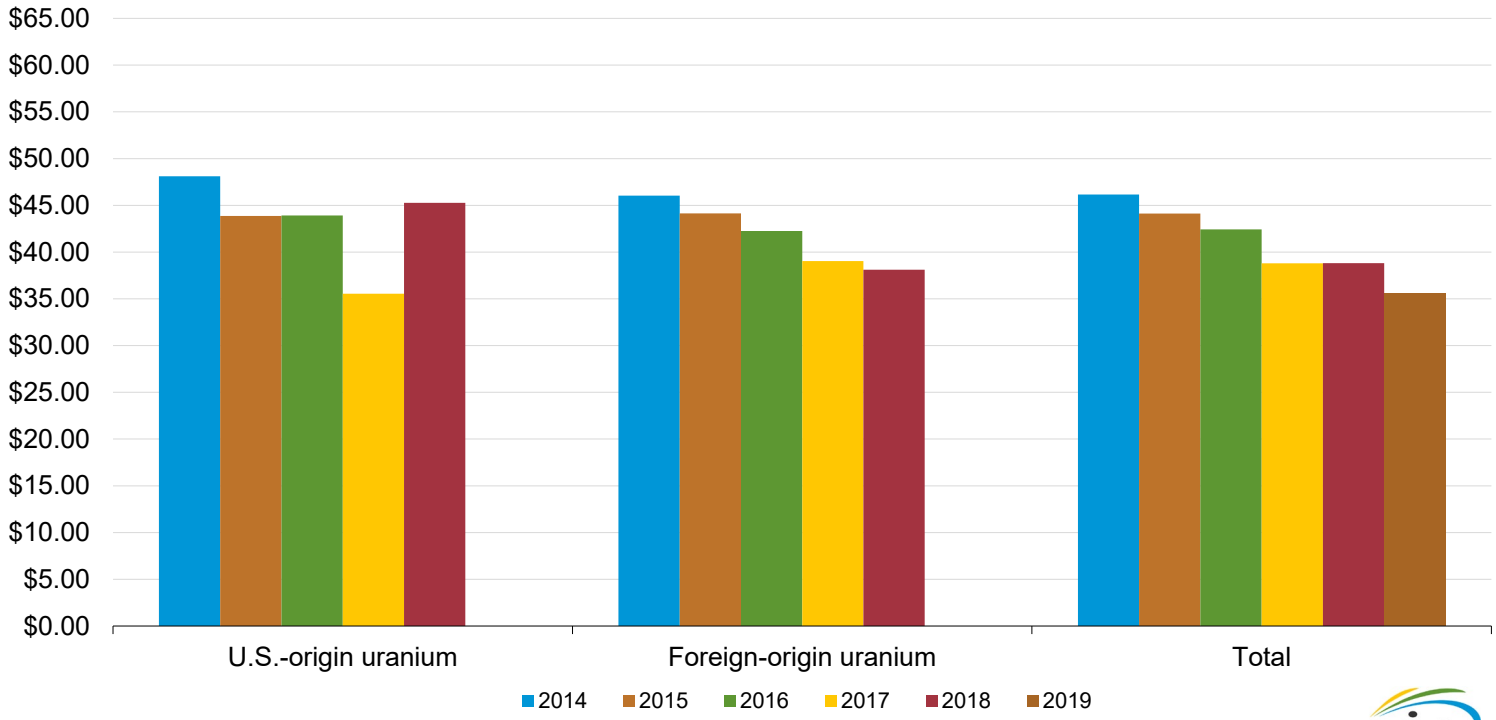
thousand pounds U3O8 equivalent



Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2014–2019)

Figure 4. Weighted-average price of uranium purchased by owners and operators of U.S. civilian nuclear power reactors by origin and delivery year, 2014–2019

dollars per pound U3O8 equivalent



Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2014–2019)

Table 3. Uranium purchased by owners and operators of U.S. civilian nuclear power reactors by origin country and delivery year, 2015–2019

thousand pounds U3O8 equivalent; dollars per pound U3O8 equivalent

	Deliveries in 2015		Deliveries in 2016		Deliveries in 2017		Deliveries in 2018		Deliveries in 2019	
Origin country	Purchases	Weighted-average price	Purchases	Weighted-average price	Purchases	Weighted-average price	Purchases	Weighted-average price	Purchases	Weighted-average price
Australia	9,678	44.16	8,963	43.05	8,129	42.44	7,167	40.24	8,504	35.39
Brazil	0	--	W	W	0	--	0	--	0	--
Bulgaria	W	W	W	W	0	--	0	--	0	--
Canada	16,876	45.84	11,119	43.22	14,048	40.63	9,556	37.74	10,172	33.06
China	0	--	W	W	0	--	W	W	0	--
Czech Republic	W	W	W	W	0	--	0	--	0	--
Germany	0	--	W	W	0	--	0	--	W	W
Hungary	0	--	0	--	W	W	0	--	0	--
Kazakhstan	10,723	42.82	10,806	39.91	4,638	38.30	8,168	40.98	8,760	35.69
Malawi	W	W	519	41.38	W	W	0	0.00	0	--
Namibia	3,456	48.57	1,993	44.30	1,040	38.46	2,178	40.42	2,450	40.40
Niger	922	39.74	1,032	44.12	1,971	49.53	W	W	998	41.21
Portugal	0	--	0	--	0	--	0	--	0	--
Russia	9,063	40.87	6,539	43.85	7,068	31.54	5,360	31.71	7,365	27.31
South Africa	826	37.64	1,169	43.75	W	W	W	W	0	--
Ukraine	0	--	W	W	W	W	0	--	0	--
United Kingdom	0	--	0	--	0	--	0	--	0	--
Uzbekistan	1,040	47.90	2,030	39.18	2,148	37.17	2,540	37.83	4,365	38.99
unknown	W	W	W	W	W	W	W	W	W	W
Foreign total	**53,106**	**44.14**	**45,171**	**42.26**	**40,117**	**39.04**	**36,415**	**38.11**	**W**	**W**
United States	3,419	43.86	5,424	43.92	2,916	35.55	3,878	45.26	W	W
Total purchases	**56,524**	**44.13**	**50,595**	**42.43**	**43,033**	**38.80**	**40,293**	**38.81**	**48,328**	**35.59**

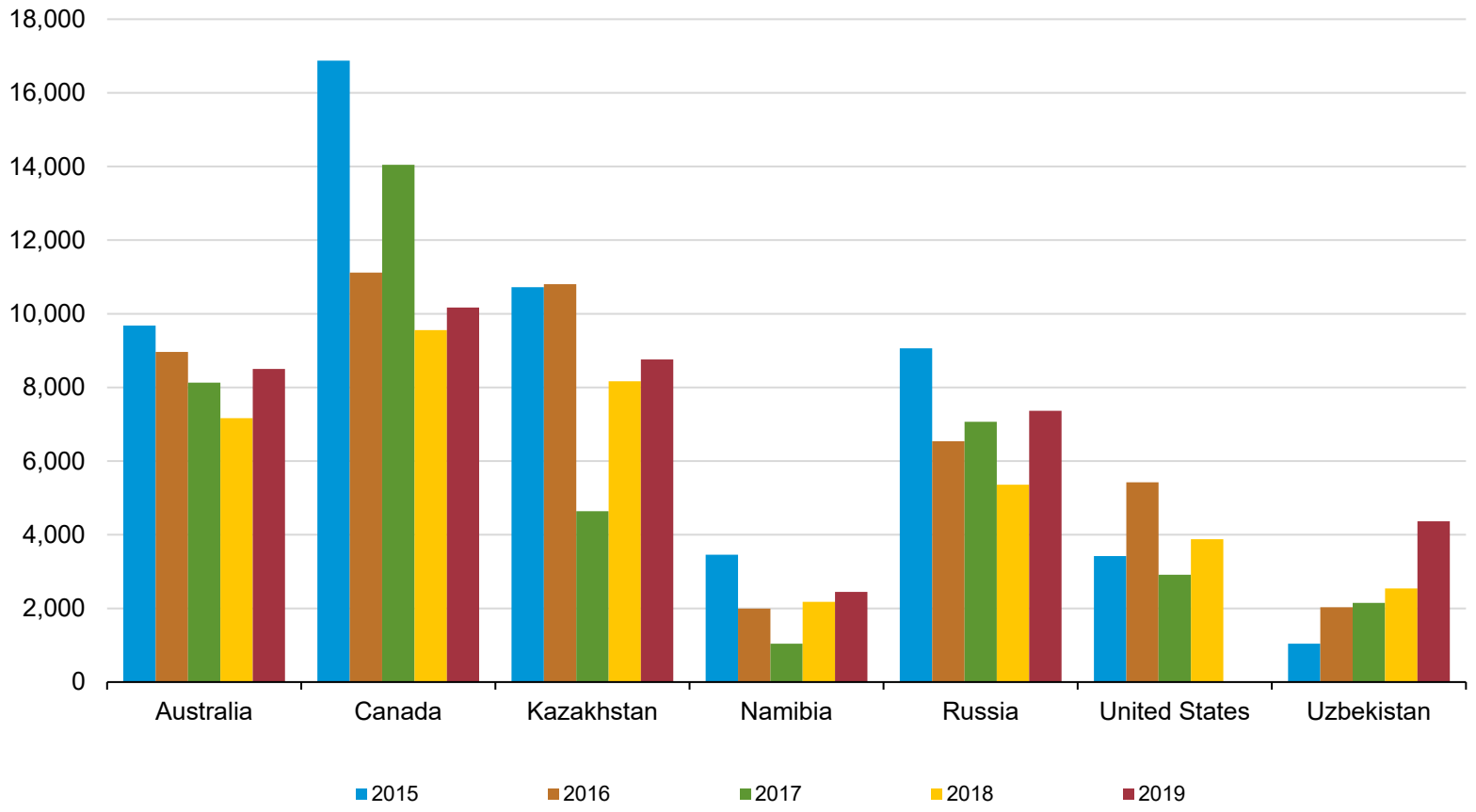
W = Data withheld to avoid disclosure of individual company data. -- = Not applicable.

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

Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2015–19)

Figure 5. Uranium purchased by owners and operators of U.S. civilian nuclear power reactors by selected origin country and delivery year, 2015–2019

thousand pounds U3O8 equivalent



Source: U.S. Energy Information Administration: Form EIA-858, *Uranium Marketing Annual Survey* (2015–2019)

Table 4. Uranium purchased by owners and operators of U.S. civilian nuclear power reactors by origin and material type, 2019 deliveries

thousand pounds U3O8 equivalent; dollars per pound U3O8 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	W
Weighted-average price	W	W	W	W	W
Foreign-origin uranium					
Purchases	W	W	W	W	W
Weighted-average price	W	W	W	W	W
Total					
Purchases	**26,650**	**10,299**	**11,379**	**21,678**	**48,328**
Weighted-average price	**34.59**	**38.10**	**35.68**	**36.83**	**35.59**

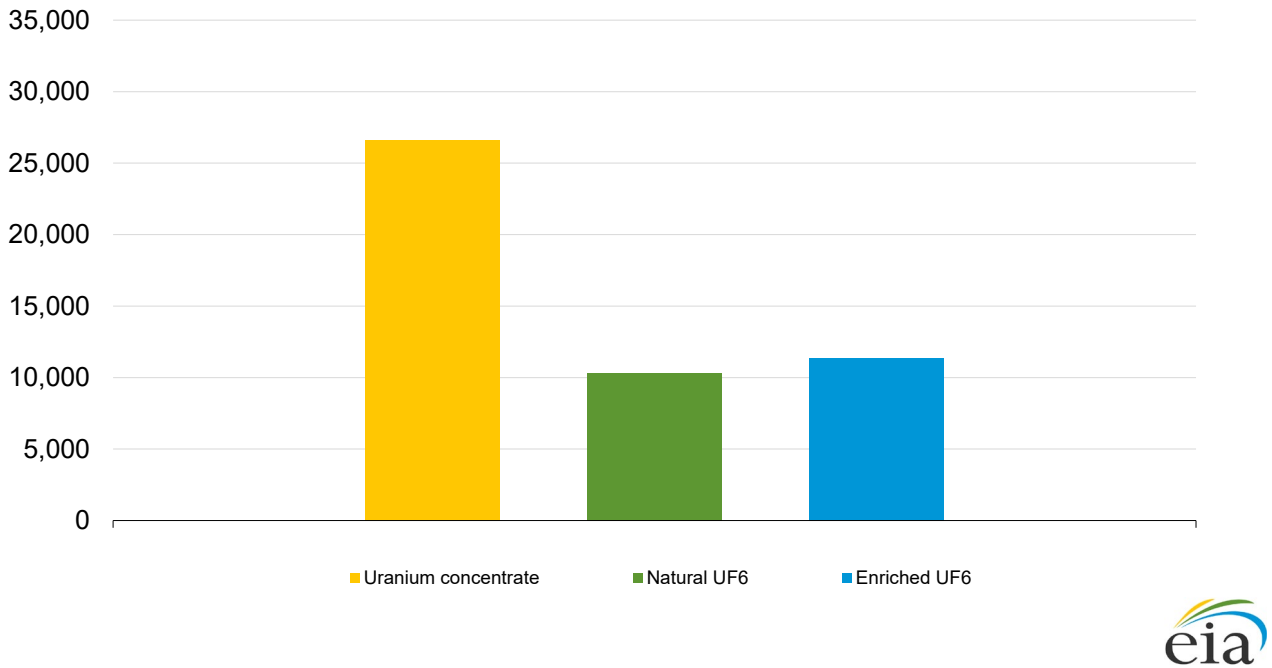
W = Data withheld to avoid disclosure of individual company data.

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.

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

Figure 6. Uranium purchased by owners and operators of U.S. civilian nuclear power reactors by material type, 2019 deliveries

thousand pounds U3O8 equivalent



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

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, 2018–2019

dollars per pound U3O8 equivalent; thousand pounds U3O8 equivalent

	Domestic purchases [1]		Foreign purchases [2]		Total purchases	
Pricing mechanisms	**2018**	**2019**	**2018**	**2019**	**2018**	**2019**
Contract-specified (fixed and base-escalated) pricing						
Weighted-average price	40.28	W	41.26	W	38.34	37.33
Quantity with reported price	7,545	W	14,669	W	27,221	30,294
Spot-market pricing						
Weighted-average price	W	W	W	W	29.82	25.03
Quantity with reported price	W	W	W	W	2,857	9,788
Other pricing						
Weighted-average price	W	W	W	W	42.72	41.77
Quantity with reported price	W	W	W	W	9,803	8,220
All pricing mechanisms						
Weighted-average price	**42.98**	**W**	**39.32**	**W**	**38.81**	**35.59**
Quantity with reported price	**11,120**	**W**	**23,246**	**W**	**39,881**	**48,303**
Total quantity	**11,145**	**W**	**23,246**	**W**	**40,293**	**48,328**

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

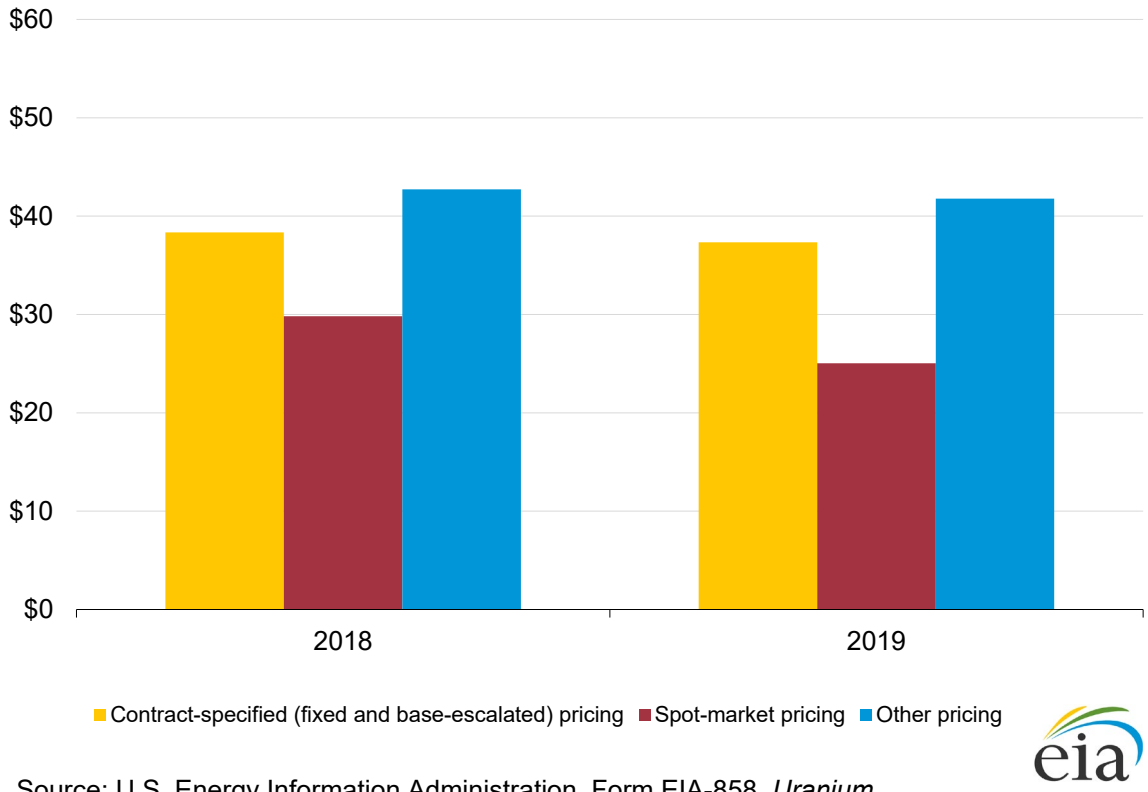
[2] A uranium purchase of foreign-origin uranium from a firm located outside of the United States.

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

Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2018–2019)

Figure 7. Average price for uranium purchased by owners and operators of U.S. civilian nuclear power reactors by pricing mechanisms and delivery year, 2018–2019

dollars per pound U3O8 equivalent



Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2018–2019)

Table 6a. Uranium purchased by owners and operators of U.S. civilian nuclear power reactors ranked by price and distributed by quantity, 2017–2019 deliveries

thousand pounds U3O8 equivalent; dollars per pound U3O8 equivalent

	Deliveries in 2017		Deliveries in 2018		Deliveries in 2019	
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	5,343	18.66	4,985	20.69	6,038	19.84
Second	5,343	23.10	4,985	26.13	6,038	24.69
Third	5,343	28.39	4,985	28.18	6,038	26.47
Fourth	5,343	33.67	4,985	33.78	6,038	28.69
Fifth	5,343	38.53	4,985	40.04	6,038	32.8
Sixth	5,343	43.65	4,985	44.93	6,038	41.2
Seventh	5,343	51.17	4,985	49.24	6,038	47.93
Eighth	5,343	73.22	4,985	67.46	6,038	63.14
Total	**42,747**	**38.80**	**39,881**	**38.81**	**48,303**	**35.59**

[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.

Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2017–2019)

Table 6b. Uranium purchased by owners and operators of U.S. civilian nuclear power reactors ranked by price and distributed by purchaser, 2017–2019 deliveries

thousand pounds U3O8 equivalent; dollars per pound U3O8 equivalent

	Deliveries in 2017			Deliveries in 2018			Deliveries in 2019		
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	17,802	31.75	7	5,654	25.84	7	15,010	25.84
Second	7	8,596	37.07	7	15,493	35.01	7	8,825	31.61
Third	7	10,669	40.18	7	10,507	41.81	7	14,352	40.73
Fourth	6	5,680	60.91	7	8,226	51.04	6	10,116	46.24
Total	**27**	**42,747**	**38.80**	**28**	**39,881**	**38.81**	**27**	**48,303**	**35.59**

Notes: Totals may not equal sum of components because of independent rounding. Weighted-average prices are not adjusted for inflation.
Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2017–2019)

Table 7. Uranium purchased by owners and operators of U.S. civilian nuclear power reactors by contract type and material type, 2019 deliveries

thousand pounds U3O8 equivalent; dollars per pound U3O8 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	6,941	28.78	19,684	36.64	26,625	34.59
Natural UF_6	W	W	W	W	10,299	38.10
Enriched UF_6	W	W	W	W	11,379	35.68
Total	**10,498**	**27.89**	**37,805**	**37.73**	**48,303**	**35.59**

[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.

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

Table 8. Contracts signed in 2019 by owners and operators of U.S. civilian nuclear power reactors by contract type

thousand pounds U3O8 equivalent; dollars per pound U3O8 equivalent

Purchase contract type (Signed in 2019)	Quantity of deliveries received in 2019	Weighted-average price	Number of purchase contracts for deliveries in 2019
Spot	W	W	W
Long-term	W	W	W
Total	**8,008**	**26.34**	**34**

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

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

Table 9. Contracted purchases of uranium by owners and operators of U.S. civilian nuclear power reactors, signed in 2019, by delivery year, 2020–2029

thousand pounds U3O8 equivalent

Year of delivery	Minimum	Maximum
2020	3,092	3,326
2021	2,366	2,556
2022	1,380	1,509
2023	2,012	2,358
2024	2,589	2,991
2025	2,291	3,033
2026	3,238	3,863
2027	2,738	4,916
2028	1,838	1,918
2029	1,638	1,718
Total	**23,182**	**28,188**

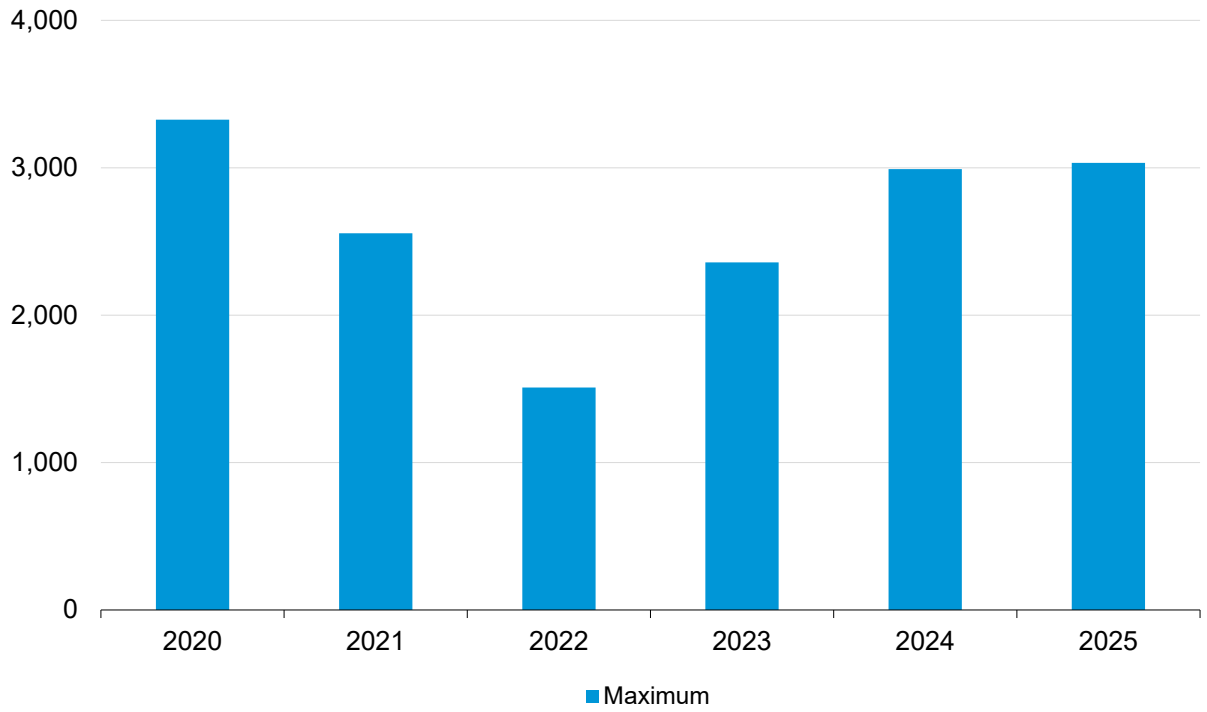
W = Data withheld to avoid disclosure of individual company data.

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

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

Figure 8. Contracted purchases of uranium by owners and operators of U.S. civilian nuclear power reactors, signed in 2019, by delivery year, 2020–2025

thousand pounds U3O8 equivalent



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

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 2019, by delivery year, 2020–2029

thousand pounds U3O8 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**
2020	4,051	5,708	31,478	34,324	35,529	40,032
2021	3,279	4,440	26,664	29,888	29,944	34,329
2022	1,968	2,613	19,607	22,555	21,575	25,168
2023	1,830	2,492	18,128	21,603	19,958	24,095
2024	1,602	2,152	14,450	17,784	16,052	19,936
2025	1,905	2,317	10,646	13,120	12,551	15,436
2026	W	W	W	W	5,664	7,575
2027	W	W	W	W	4,681	8,266
2028	0	0	2,688	3,229	2,688	3,229
2029	0	0	2,488	2,868	2,488	2,868
Total	**15,248**	**20,332**	**135,882**	**160,601**	**151,129**	**180,933**

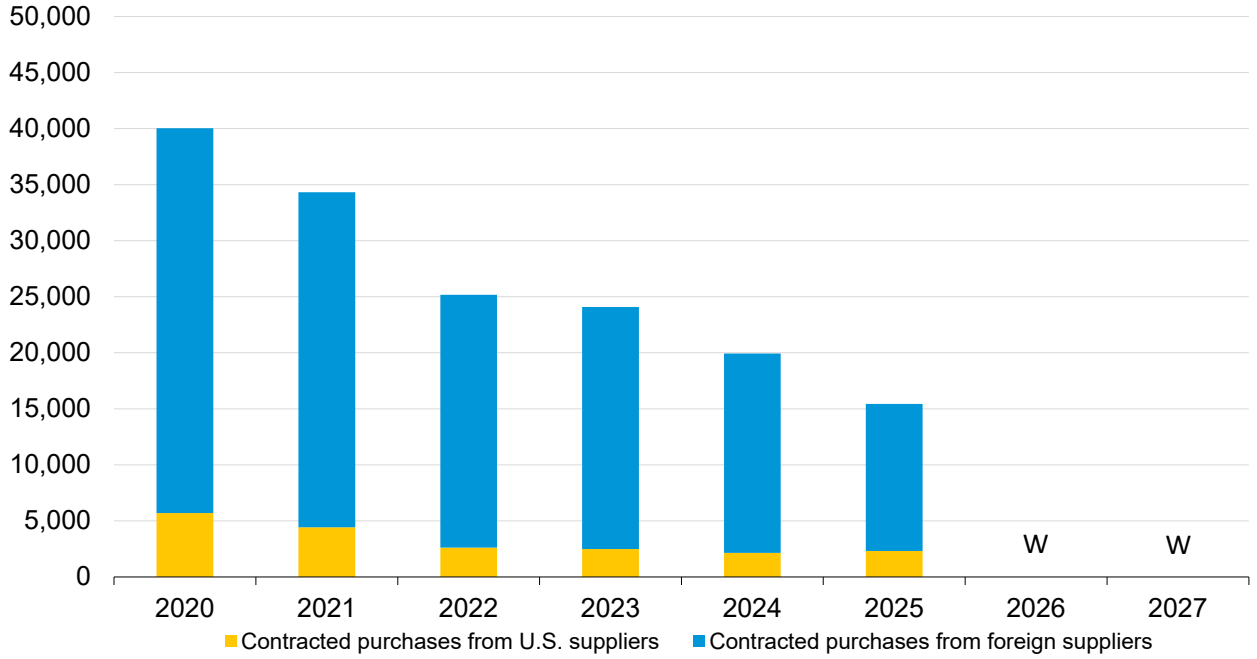
W = Data withheld to avoid disclosure of individual company data.

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

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

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 2019, by delivery year, 2020–2027

thousand pounds U3O8 equivalent



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

Table 11. Unfilled uranium market requirements of owners and operators of U.S. civilian nuclear power reactors, 2019–2029

thousand pounds U3O8 equivalent

	As of December 31, 2018		As of December 31, 2019	
Year	Annual	Cumulative	Annual	Cumulative
2019	1,984	1,984	-	--
2020	4,358	6,342	2,562	2,562
2021	6,036	12,378	3,238	5,800
2022	10,518	22,896	9,446	15,246
2023	17,863	40,759	13,123	28,369
2024	25,004	65,763	22,526	50,895
2025	27,215	92,978	25,193	76,087
2026	33,359	126,336	28,887	104,974
2027	36,226	162,562	32,136	137,110
2028	38,498	201,060	35,938	173,049
2029	-	--	33,528	206,577

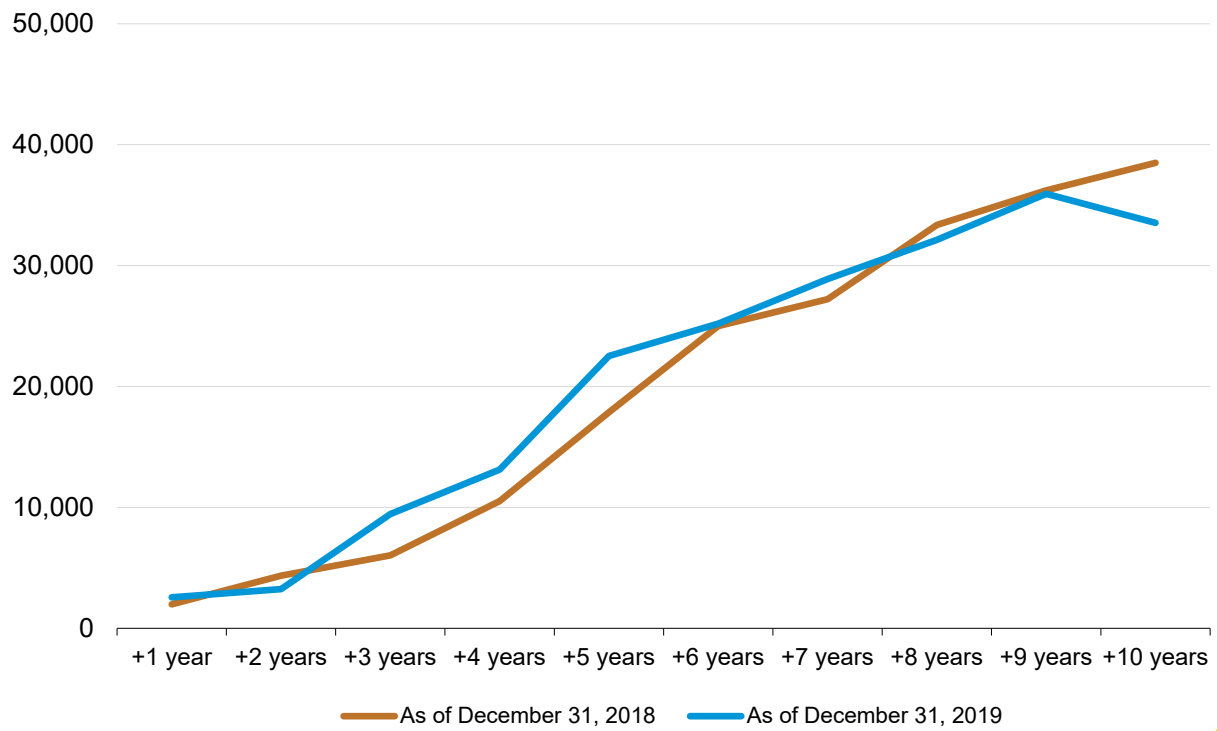
- = No data reported. -- = Not applicable.

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

Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2018–2019)

Figure 10. Annual unfilled uranium market requirements of owners and operators of U.S. civilian nuclear power reactors, at the end of 2018 and at the end of 2019

thousand pounds U3O8 equivalent



Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2018–2019)

Table 12. Maximum anticipated uranium market requirements of owners and operators of U.S. civilian nuclear power reactors, 2020–2029, at end of 2019

thousand pounds U3O8 equivalent

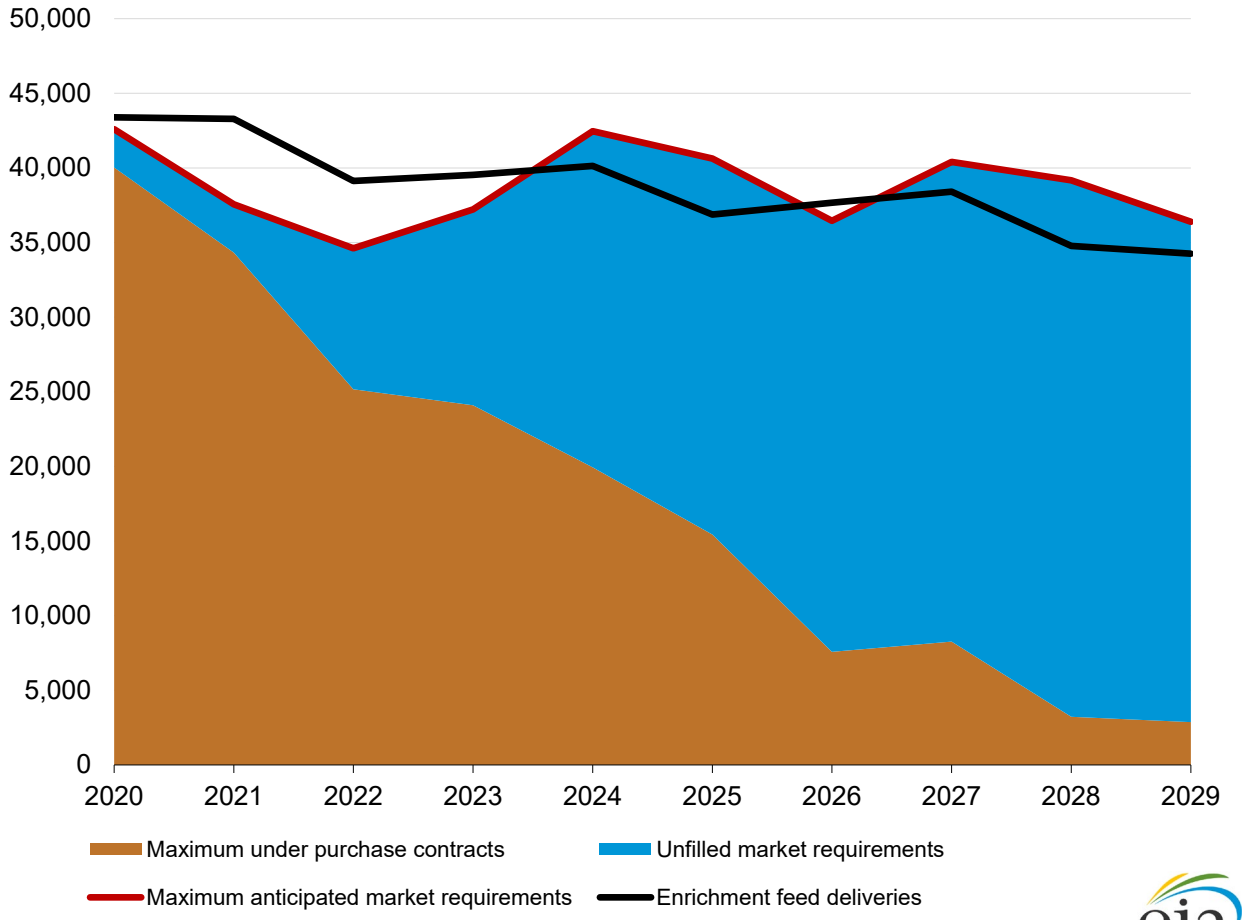
Year	Maximum under purchase contracts	Unfilled market requirements	Maximum anticipated market requirements	Enrichment feed deliveries
2020	40,032	2,562	42,593	43,390
2021	34,329	3,238	37,567	43,287
2022	25,168	9,446	34,614	39,122
2023	24,095	13,123	37,218	39,531
2024	19,936	22,526	42,462	40,134
2025	15,436	25,193	40,629	36,873
2026	7,575	28,887	36,461	37,673
2027	8,266	32,136	40,402	38,408
2028	3,229	35,938	39,167	34,773
2029	2,868	33,528	36,396	34,254
Total	**180,933**	**206,577**	**387,509**	**387,445**

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

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

Figure 11. Maximum anticipated uranium market requirements of owners and operators of U.S. civilian nuclear power reactors, 2020–2029, at end of 2019

thousand pounds U3O8 equivalent



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

Table 13. Deliveries of uranium feed by owners and operators of U.S. civilian nuclear power reactors by enrichment country and delivery year, 2017–2019

thousand pounds U3O8 equivalent

	Feed deliveries in 2017			Feed deliveries in 2018			Feed deliveries in 2019		
Enrichment country	**U.S.-origin**	**Foreign-origin**	**Total**	**U.S.-origin**	**Foreign-origin**	**Total**	**U.S.-origin**	**Foreign-origin**	**Total**
China	0	0	0	W	W	W	W	W	W
France	0	W	W	W	W	W	W	W	W
Germany	0	453	453	W	W	2,206	W	W	W
Netherlands	W	W	1,228	W	W	3,445	W	W	2,613
Russia	W	W	4,845	W	W	2,211	W	W	1,597
United Kingdom	W	W	W	W	W	W	W	W	3,818
Europe [1]	W	5,941	6,365	514	7,950	8,463	W	W	7,727
Foreign total	**1,994**	**13,961**	**15,954**	**876**	**16,422**	**17,298**	**W**	**W**	**18,732**
United States	5,155	12,698	17,853	3,861	12,285	16,146	W	W	19,536
Total	**7,149**	**26,659**	**33,808**	**4,737**	**28,707**	**33,444**	**4,427**	**33,841**	**38,267**

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

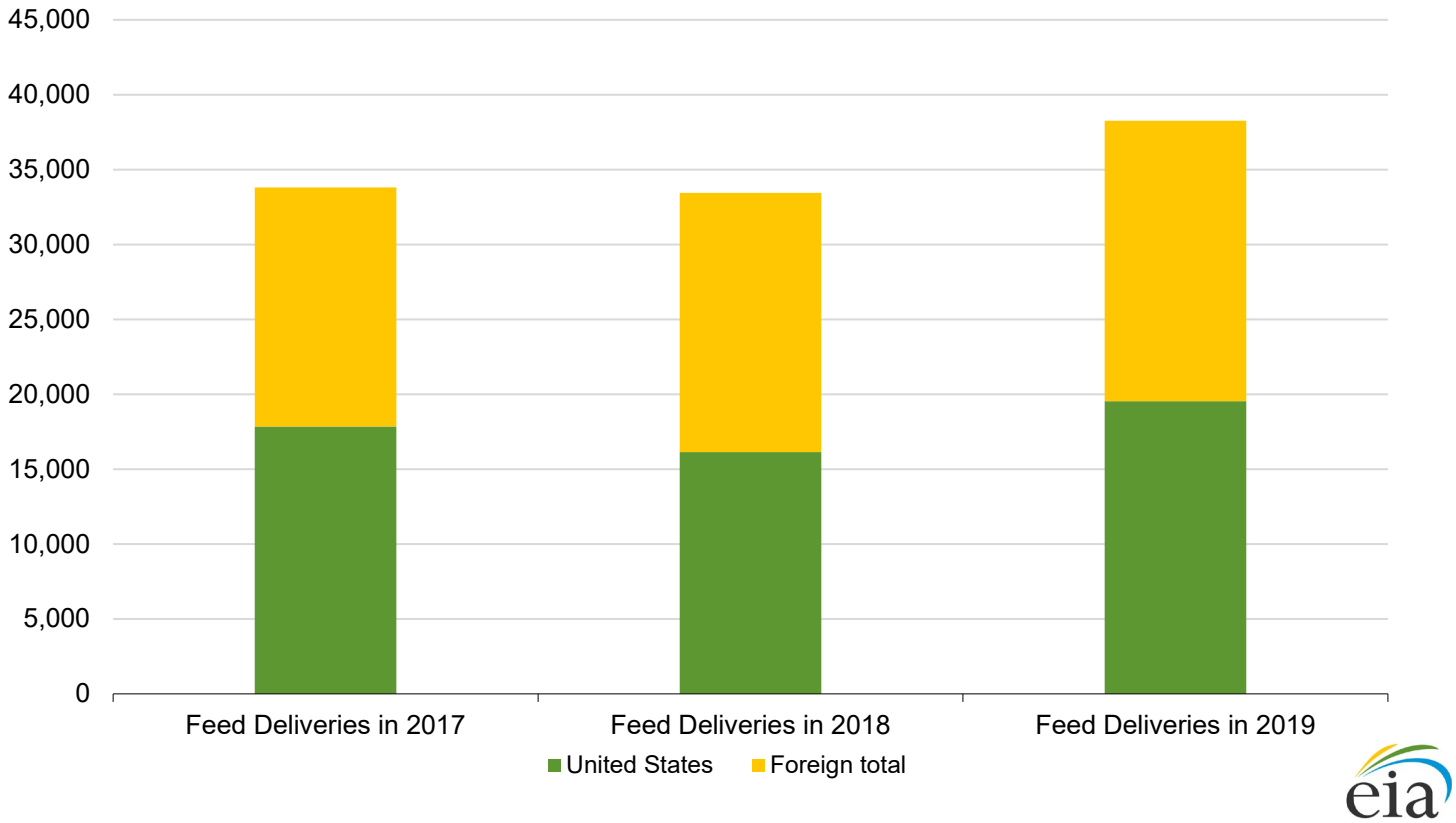
[1] Specific country in Europe was not reported.

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

Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2017–2019)

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, 2017–2019

thousand pounds U3O8 equivalent



Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2017–2019)

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, 2017–2019

thousand pounds U3O8 equivalent

	Deliveries in 2017			Deliveries in 2018			Deliveries in 2019		
Origin country of feed	**U.S. enrichment**	**Foreign enrichment**	**Total**	**U.S. enrichment**	**Foreign enrichment**	**Total**	**U.S. enrichment**	**Foreign enrichment**	**Total**
Australia	1,035	3,128	4,162	2,509	3,645	6,153	2,746	5,029	7,775
Brazil	0	0	0	W	W	W	0	0	0
Canada	7,327	4,611	11,938	4,460	4,691	9,151	6,424	6,640	13,064
China	0	0	0	0	0	0	0	0	0
Czech Republic	0	0	0	0	0	0	0	0	0
Kazakhstan	1,742	3,018	4,760	3,556	5,093	8,649	4,222	4,533	8,756
Malawi	0	W	W	W	W	W	W	W	W
Namibia	W	W	W	W	W	1,503	550	495	1,045
Niger	W	W	W	W	W	W	W	W	813
Portugal	0	0	0	0	0	0	0	0	0
Russia	960	1,089	2,049	W	W	779	W	W	W
South Africa	W	W	W	W	W	W	W	W	W
Ukraine	0	0	0	W	W	W	0	0	0
United Kingdom	0	0	0	0	0	0	0	0	0
Uzbekistan	W	W	W	572	612	1,184	1,028	544	1,572
unknown/other	W	W	W	W	W	W	W	W	W
Foreign total	**12,698**	**13,961**	**26,659**	**12,285**	**16,422**	**28,707**	**W**	**W**	**W**
United States	5,155	1,994	7,149	3,861	876	4,737	W	W	W
Total	**17,853**	**15,954**	**33,808**	**17,298**	**17,298**	**33,444**	**19,536**	**18,732**	**38,267**

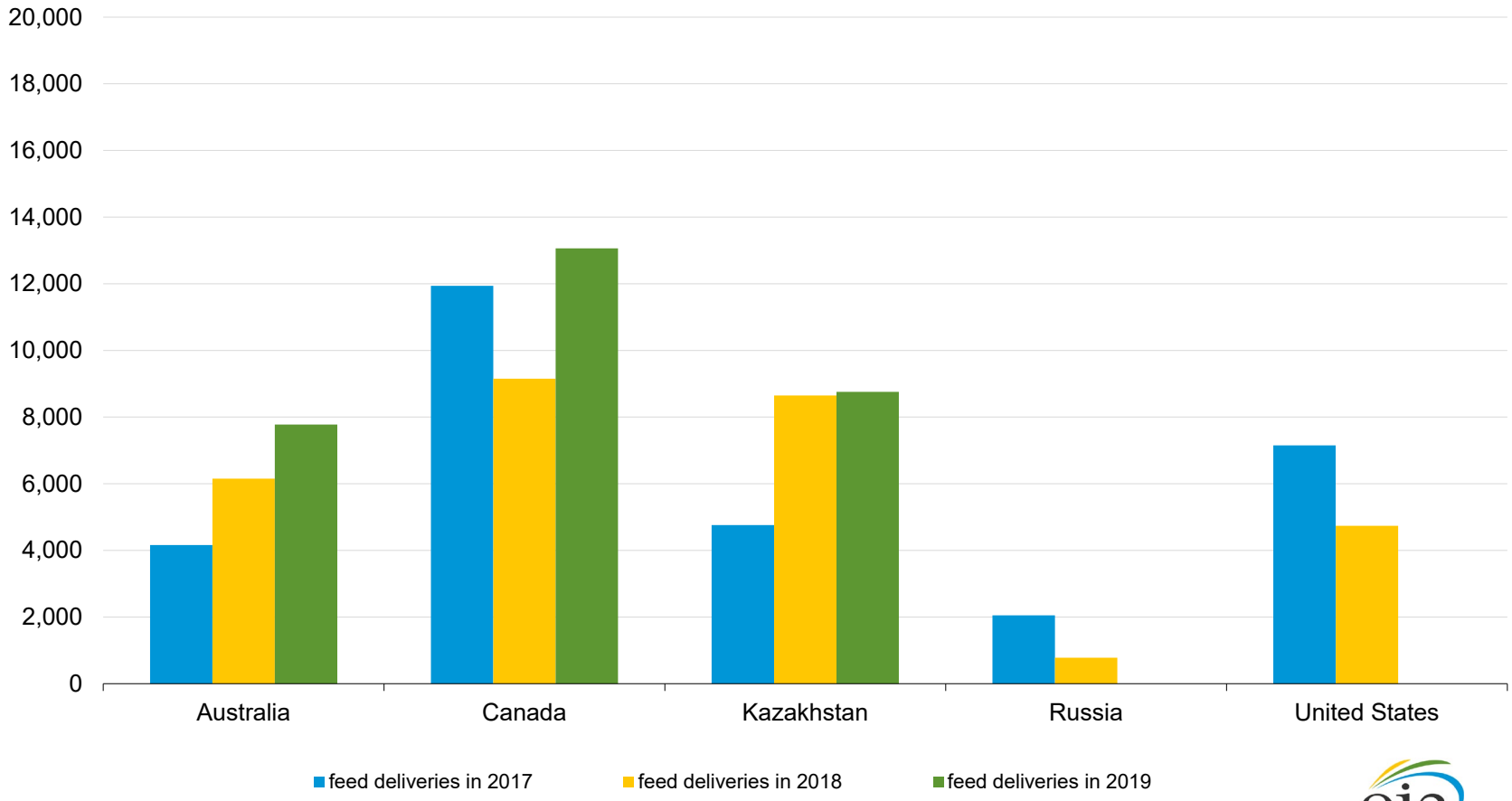
W = Data withheld to avoid disclosure of individual company data.

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

Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2017–19)

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, 2017–2019

thousand pounds U3O8 equivalent



Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2017–19)

Table 15. Shipments of uranium feed by owners and operators of U.S. civilian nuclear power reactors to domestic and foreign enrichment suppliers, 2020–2029

thousand pounds U3O8 equivalent

	Amount of feed to be shipped		Change from 2018 to 2019	
Year of shipment	As of December 31, 2018	As of December 31, 2019	Annual	Cumulative
2020	43,565	43,390	-175	-175
2021	42,371	43,287	916	741
2022	43,034	39,122	-3,912	-3,171
2023	41,999	39,531	-2,468	-5,639
2024	39,759	40,134	375	-5,264
2025	38,012	36,873	-1,139	-6,403
2026	39,605	37,673	-1,932	-8,335
2027	39,248	38,408	-840	-9,175
2028	37,354	34,773	-2,581	-11,756
2029	-	34,254	--	--

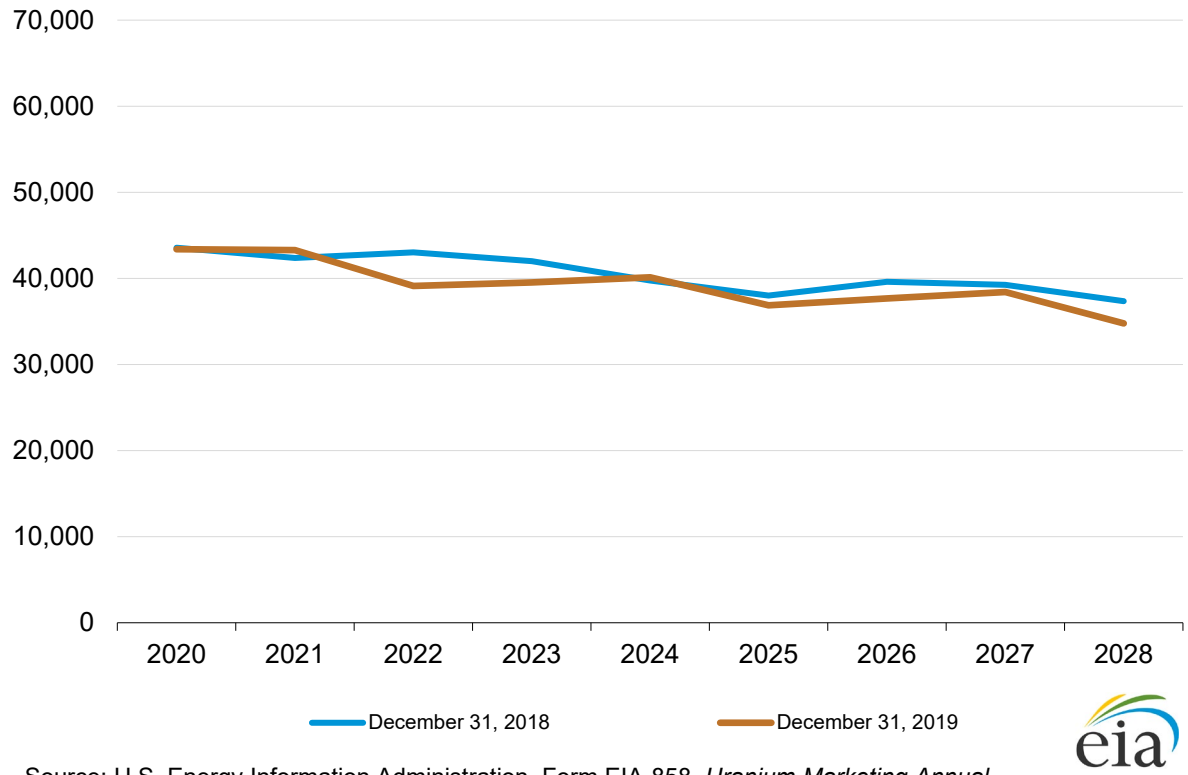
- = No data reported. -- = Not applicable.

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

Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2018–19)

Figure 14. Shipments of uranium feed by owners and operators of U.S. civilian nuclear power reactors to domestic and foreign enrichment suppliers, 2020–2028

thousand pounds U3O8 equivalent



Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2018–19)

Table 16. Purchases of enrichment services by owners and operators of U.S. civilian nuclear power reactors by origin country and year, 2015–2019

thousand separative work units (SWU)

Country of enrichment service (SWU-origin)	2015	2016	2017	2018	2019
China	318	W	W	W	W
France	0	0	W	0	W
Germany	1,281	1,636	437	1,444	1,238
Netherlands	2,385	2,546	1,183	2,864	1,367
Russia	2,234	3,188	2,912	3,473	3,087
United Kingdom	2,522	1,003	1,525	1,544	1,262
Europe [1]	W	W	W	W	W
Other [2]	W	W	W	W	W
Foreign total	**8,769**	**9,524**	**7,305**	**10,034**	**7,992**
United States	4,146	4,756	5,572	4,979	5,289
Total	**12,914**	**14,280**	**12,877**	**15,013**	**13,281**
Average price (US$ per SWU)	**136.88**	**131.00**	**125.43**	**115.42**	**109.54**

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

[1] Specific country in Europe was not reported.

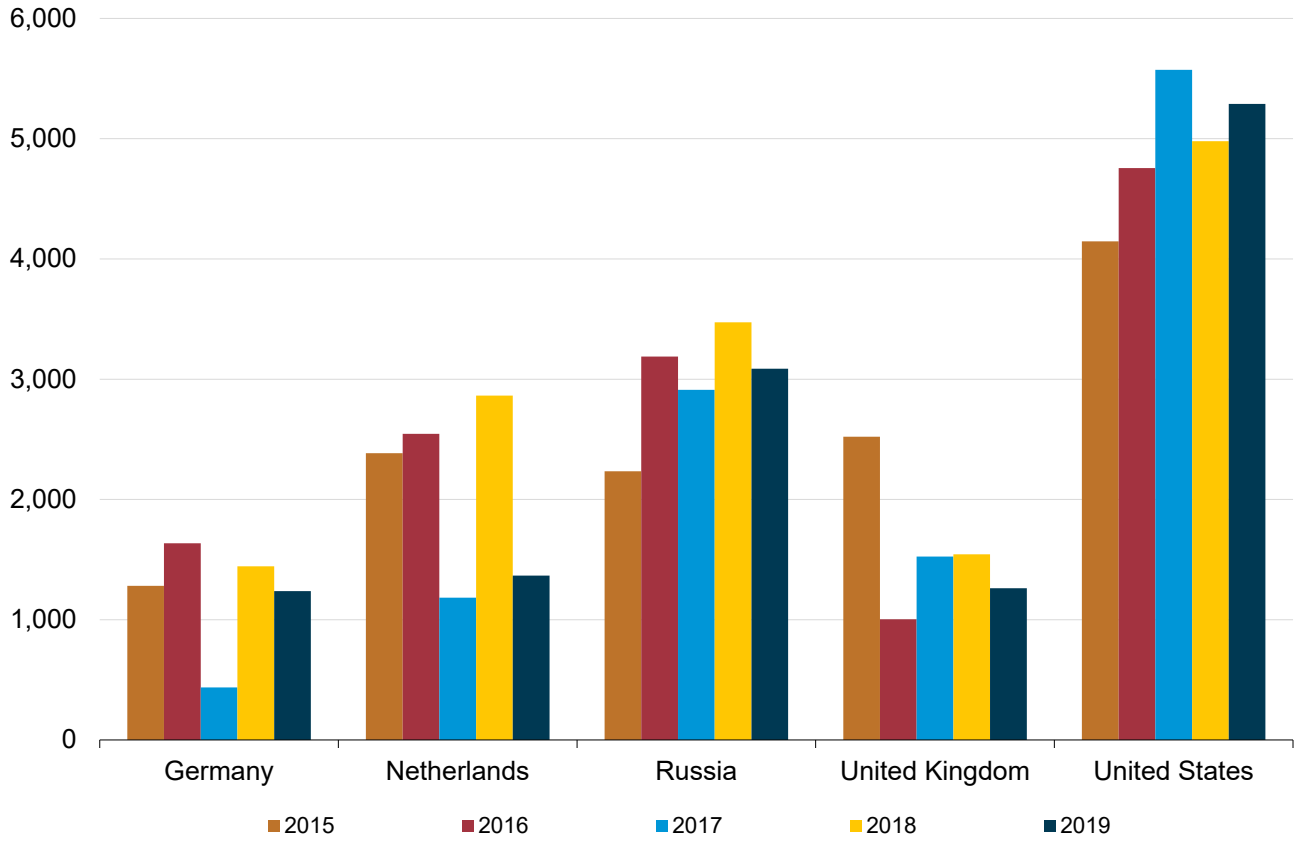
[2] Specific country was not reported.

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

Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2015–19)

Figure 15. Purchases of enrichment services by owners and operators of U.S. civilian nuclear power reactors by selected origin country and year, 2015–2019

thousand separative work units (SWU)



Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2015–19)

Table 17. Purchases of enrichment services by owners and operators of U.S. civilian nuclear power reactors by contract type in delivery year, 2019

thousand separative work units (SWU)

Enrichment service contract type	U.S. enrichment	Foreign enrichment	Total
Spot	W	W	198
Long-term	W	W	13,083
Total	**5,289**	**7,992**	**13,281**

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

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

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

Table 18. Uranium in fuel assemblies loaded into U.S. civilian nuclear power reactors by year, 2015–2019

thousand pounds U3O8 equivalent

Origin of uranium	2015	2016	2017	2018	P2019
Domestic-origin uranium	4,050	3,204	5,734	4,957	4,051
Foreign-origin uranium	43,381	38,455	39,807	45,399	39,184
Total	**47,431**	**41,659**	**45,541**	**50,355**	**43,234**

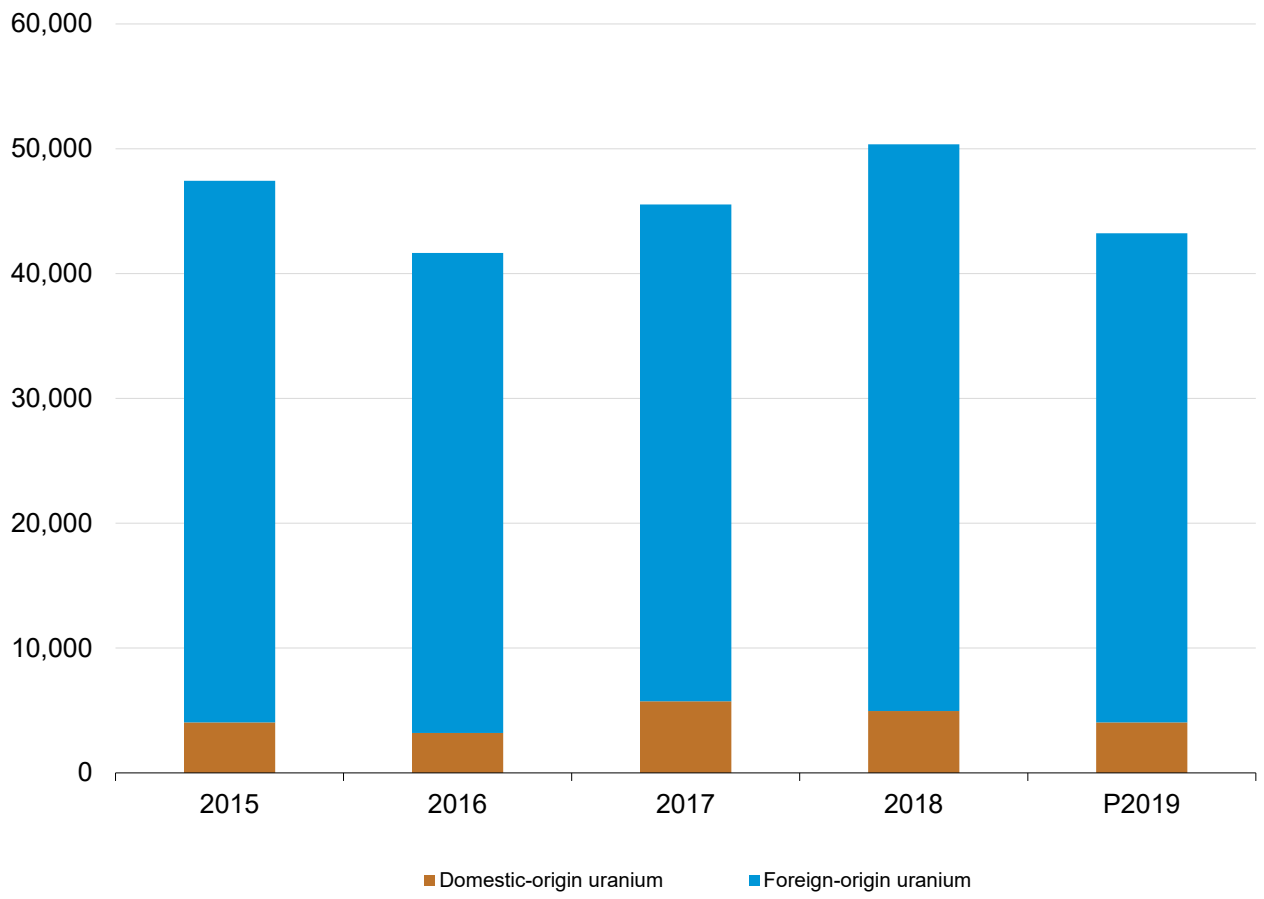
P = Preliminary data. Final 2018 fuel assembly data reported in the 2019 survey.

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.

Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2015–2019)

Figure 16. Uranium in fuel assemblies loaded into U.S. civilian nuclear power reactors by year, 2015–2019

thousand pounds U3O8 equivalent



P = Preliminary data. Final 2018 fuel assembly data reported in the 2019 survey.
Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2015–2019)

Table 19. Foreign purchases of uranium by U.S. suppliers and owners and operators of U.S. civilian nuclear power reactors by delivery year, 2015–2019

thousand pounds U3O8 equivalent; dollars per pound U3O8 equivalent

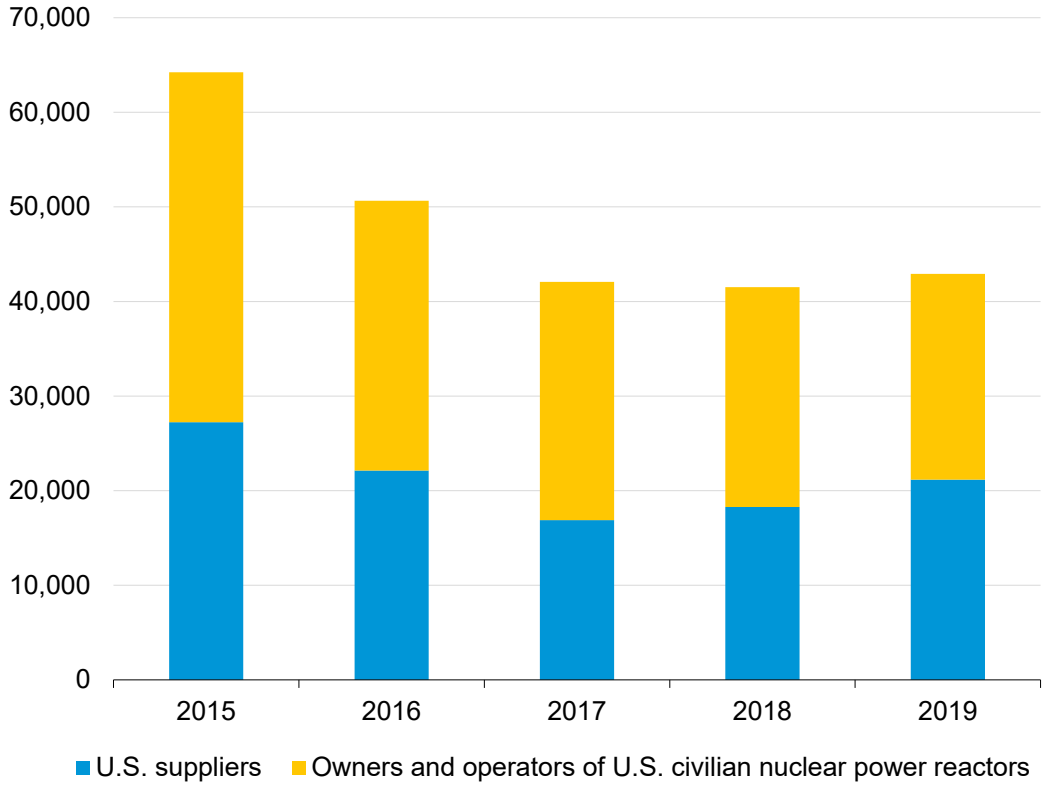
Deliveries	2015	2016	2017	2018	2019
U.S. suppliers					
Foreign purchases	27,233	22,138	16,891	18,278	21,160
Weighted-average price	40.68	36.03	31.11	30.93	33.17
Owners and operators of U.S. civilian nuclear power reactors					
Foreign purchases	37,001	28,512	25,187	23,246	21,763
Weighted-average price	44.67	44.08	41.12	39.32	36.28
Total					
Foreign purchases	64,234	50,650	42,078	41,524	42,923
Weighted-average price	42.95	40.45	37.09	35.73	34.77

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.

Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2015–2019)

Figure 17. Foreign purchases of uranium by U.S. suppliers and owners and operators of U.S. civilian nuclear power reactors by delivery year, 2015–2019

thousand pounds U3O8 equivalent



Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2015–2019)

Table 20. U.S. broker and trader purchases of uranium by origin, supplier, and delivery year, 2015–2019

thousand pounds U3O8 equivalent; dollars per pound U3O8 equivalent

Deliveries	2015	2016	2017	2018	2019
Received U.S.-origin uranium					
Purchases	2,702	3,266	3,501	1,765	W
Weighted-average price	35.04	26.31	19.88	28.20	W
Received foreign-origin uranium					
Purchases	33,014	34,046	35,156	34,400	W
Weighted-average price	39.58	32.71	24.83	30.61	W
Total received by U.S. brokers and traders					
Purchases	**35,716**	**37,312**	**38,657**	**36,165**	**38,394**
Weighted-average price	**39.24**	**32.11**	**24.38**	**30.49**	**33.09**
Received from foreign suppliers					
Purchases	26,069	22,088	14,060	18,870	20,757
Weighted-average price	40.77	36.09	29.93	30.84	33.43

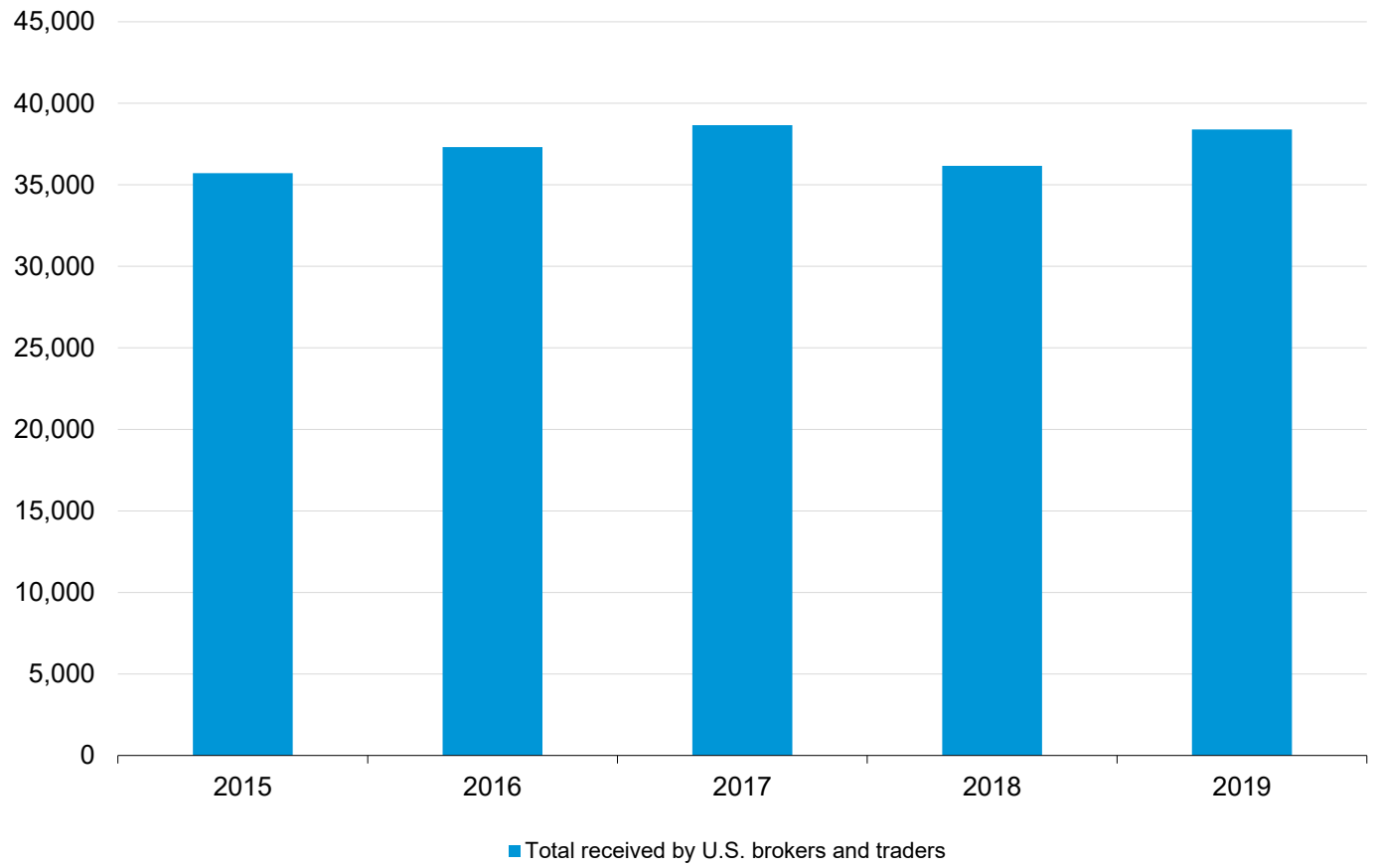
W = Data withheld to avoid disclosure of individual company data.

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

Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2015–2019)

Figure 18. U.S. broker and trader purchases of uranium by delivery year, 2015–2019

thousand pounds U3O8 equivalent



Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2015–2019)

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, 2015–2019

thousand pounds U3O8 equivalent; dollars per pound U3O8 equivalent

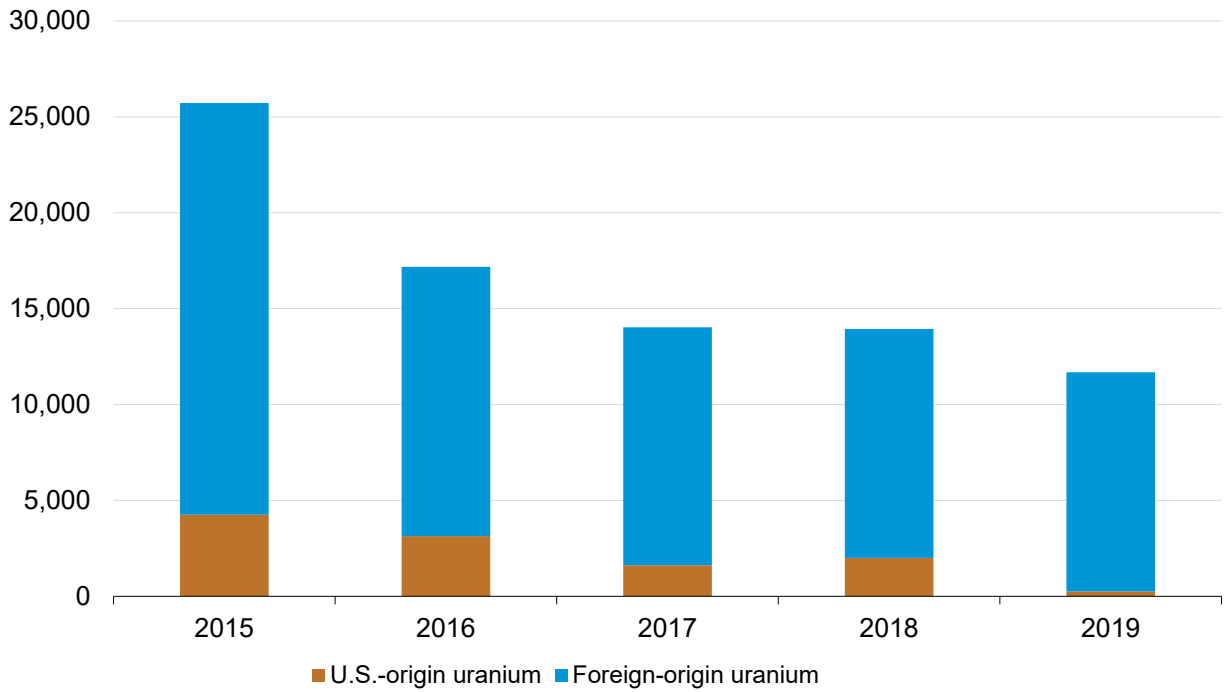
Deliveries to foreign suppliers and utilities	2015	2016	2017	2018	2019
U.S.-origin uranium					
Foreign sales	4,258	3,142	1,617	2,004	255
Weighted-average price	37.85	25.99	27.61	27.66	25.49
Foreign-origin uranium					
Foreign sales	21,465	14,034	12,408	11,942	11,424
Weighted-average price	39.58	35.38	24.88	25.75	27.20
Total sent:					
Foreign sales	**25,723**	**17,176**	**14,025**	**13,947**	**11,679**
Weighted-average price	**39.29**	**33.66**	**25.19**	**26.02**	**27.16**
From owners and operators of U.S. civilian nuclear power reactors, U.S. producers, and other U.S. suppliers					
Foreign sales	6,022	3,153	3,505	2,589	3,466
Weighted-average price	38.77	30.26	29.55	28.97	25.76
From U.S. brokers and traders					
Foreign sales	19,700	14,023	10,520	11,358	8,213
Weighted-average price	39.45	34.43	23.74	25.35	27.75

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.

Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2015–2019)

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, 2015–2019

thousand pounds U3O8 equivalent



Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2015–2019)

Table 22. Inventories of natural and enriched uranium by material type as of end of year, 2015–2019

thousand pounds U3O8 equivalent

	Inventories at the end of the year				
Type of uranium inventory owned by	**2015**	**2016**	**2017**	**2018**	**P2019**
Owners and operators of U.S. civilian nuclear power reactors inventories	**121,131**	**127,964**	**123,850**	**111,174**	**112,801**
Uranium concentrate (U_3O_8)	20,635	20,790	20,612	19,270	24,233
Natural UF_6	48,136	53,602	50,615	43,312	40,375
Enriched UF_6	41,557	43,743	43,451	40,107	35,715
Fabricated fuel (not inserted into a reactor)	10,803	9,829	9,173	8,485	12,478
U.S. supplier inventories	**14,340**	**16,667**	**17,818**	**19,345**	**14,327**
Uranium concentrate (U_3O_8)	6,289	7,185	7,174	7,754	6,857
Natural UF_6	W	W	4,364	W	W
Enriched UF_6	W	W	6,280	W	W
Fabricated fuel (not inserted into a reactor)	0	0	0	0	0
Total Commercial Inventories	**135,471**	**144,631**	**141,668**	**130,519**	**127,128**

P = Preliminary data. Final 2018 inventory data reported in the 2019 survey.

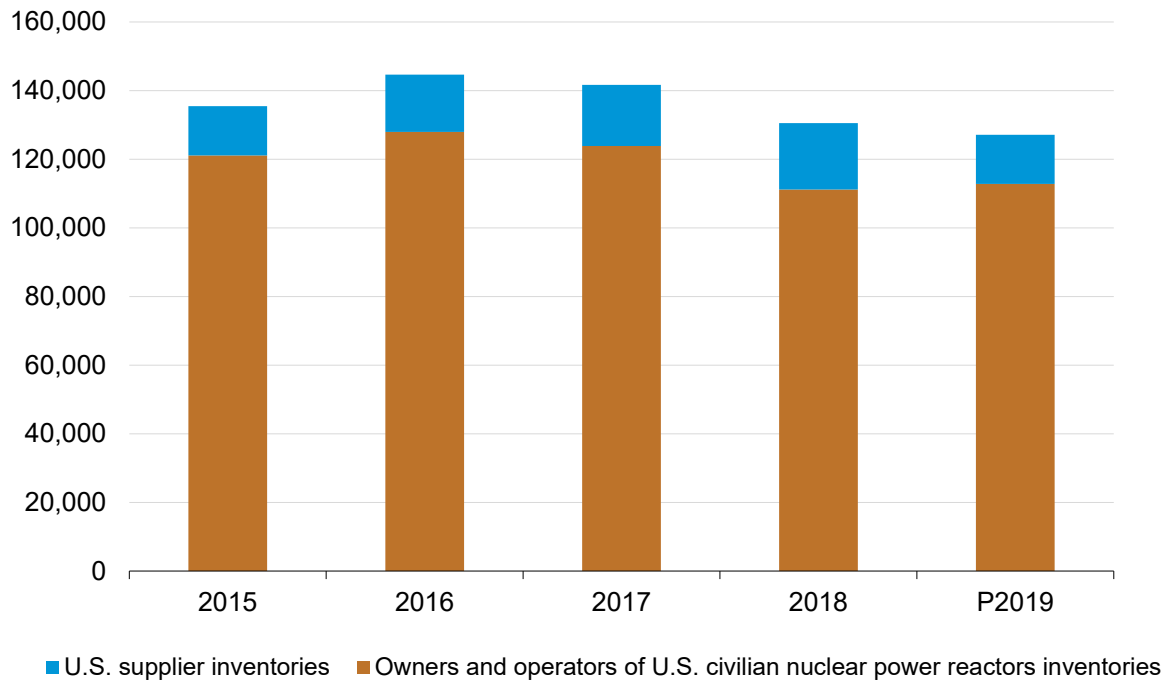
W = Data withheld to avoid disclosure of individual company data.

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

Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2016–2019)

Figure 20. Commercial inventories of natural and enriched uranium as of end of year, 2015–2019

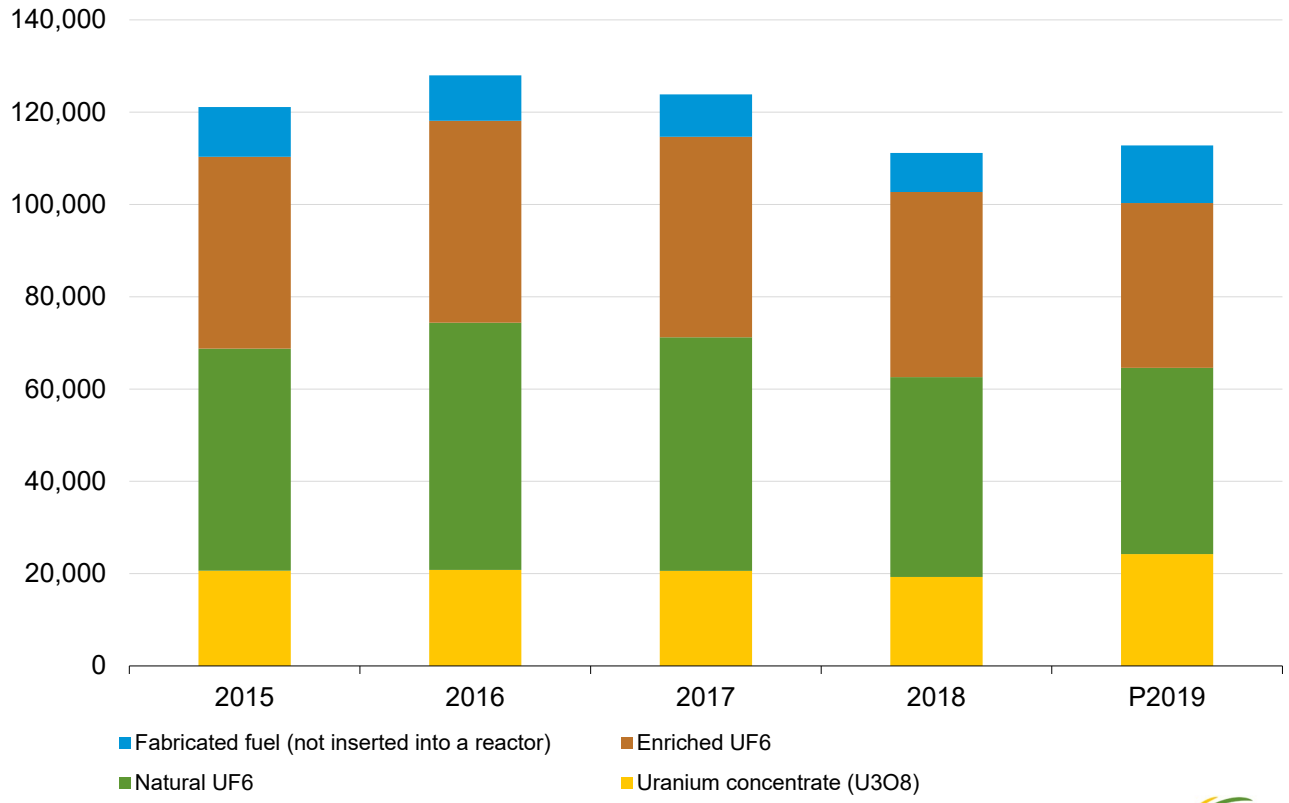
thousand pounds U3O8 equivalent



P = Preliminary data. Final 2018 inventory data reported in the 2019 survey.
Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2016–2019)

Figure 21. Owners and operators of U.S. civilian nuclear power reactors inventories by material type as of end of year, 2015–2019

thousand pounds U3O8 equivalent



P = Preliminary data. Final 2018 inventory data reported in the 2019 survey.
Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2016–2019)

Table 23. Inventories of uranium by owner as of end of year, 2015–2019

thousand pounds U3O8 equivalent

	Inventories at the End of Year				
Owner of uranium inventory	**2015**	**2016**	**2017**	**2018**	**P2019**
Owners and operators of U.S. civilian nuclear power reactors	121,131	127,964	123,850	111,174	112,801
U.S. brokers and traders	5,678	7,772	8,519	10,601	9,385
U.S. converter, enrichers, fabricators, and producers	8,662	8,895	9,299	8,743	4,942
Total commercial inventories	**135,471**	**144,631**	**141,668**	**130,519**	**127,128**

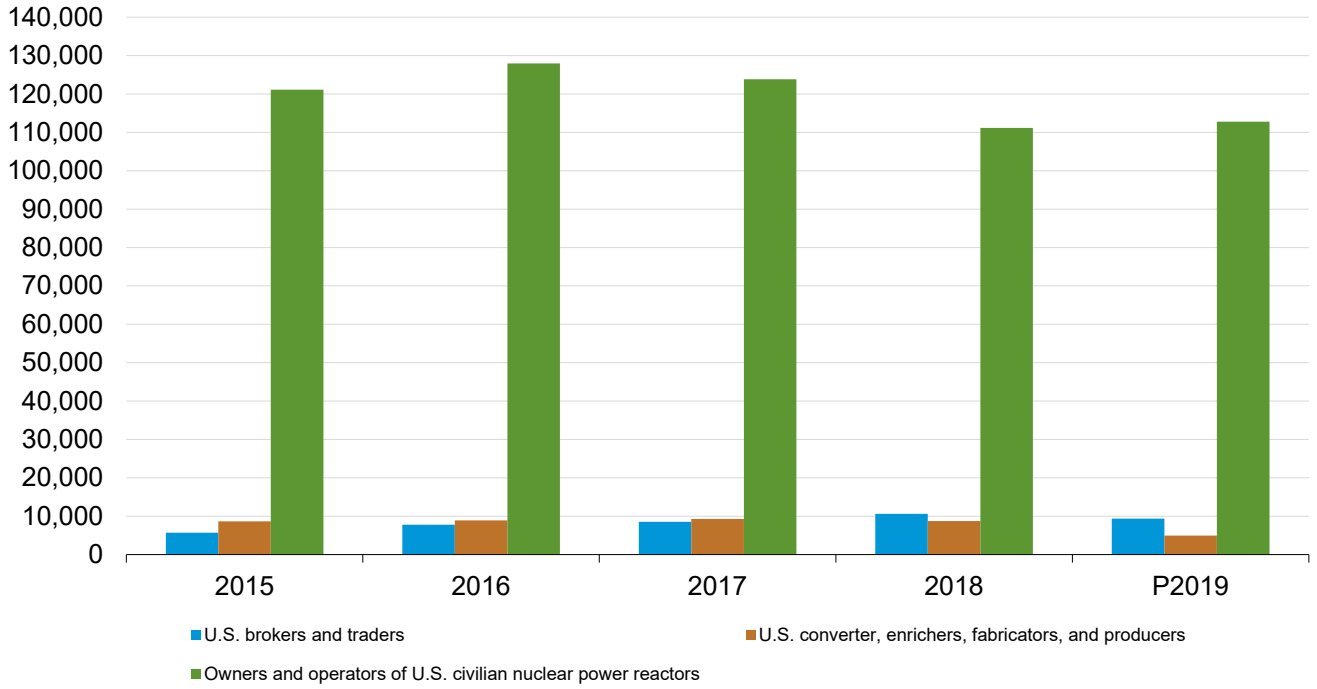
P = Preliminary data. Final 2018 inventory data reported in the 2019 survey.

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

Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2016–2019)

Figure 22. Commercial inventories of uranium by owner as of end of year, 2015–2019

thousand pounds U3O8 equivalent



P=Preliminary data. Final 2018 inventory data reported in the 2019 survey.
Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2016–2019)

Table 24. Uranium sellers to owners and operators of U.S. civilian nuclear power reactors, 2017–2019

2017	2018	2019
AREVA / AREVA NC, Inc.	AREVA / AREVA NC, Inc./ AREVA Resources Canada	AREVA / AREVA NC, Inc./ AREVA Resources Canada
ARMZ (AtomRedMetZoloto)	ARMZ (AtomRedMetZoloto)	ARMZ (AtomRedMetZoloto)
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	CGN Global Uranium Limited
ConverDyn	ConverDyn	ConverDyn
Deutsche Bank	Curzon Uranium Trading Limited	Deutsche Bank
Duke Energy Florida, Inc.	Energy Northwest	Duke Energy Florida, Inc.
Energy Fuels Resources	Energy USA, Inc.	Energy Fuels Resources, Inc.
Energy Resources of Australia Ltd.	Idemitsu	Energy Northwest
Energy USA, Inc.	Itochu Corporation / Itochu International	Energy USA, Inc.
Itochu Corporation / Itochu International	Kazatomprom	Itochu Corporation / Itochu International
Kazatomprom	Macquarie Bank	Kazatomprom
Langer Heinrich Uranium Ltd (Paladin Energy)	Mitsui & Co.	Macquarie Bank
Macquarie Bank	MTM Trading, LLC	Mitsui & Co.
Mitsui & Co.	Nufcor International Limited	MTM Trading, LLC
MTM Trading, LLC	NUKEM, Inc. / RWE Nukem	Nufcor International Limited
Nufcor International Limited	NYNCO Trading, Ltd.	NUKEM, Inc. / RWE Nukem
NUKEM, Inc. / RWE Nukem	Paladin Resources Limited / Paladin Energy	NYNCO Trading, Ltd.
NYNCO Trading, Ltd.	Orano, USA	Paladin Resources Limited / Paladin Energy
Paladin Resources Limited / Paladin Energy	Peninsula Energy / Strata Energy	Peninsula Energy / Strata Energy
Rio Tinto Uranium Limited	Quasar Resources	Rio Tinto Uranium Limited
Rossing Uranium Limited	Rio Tinto Uranium Limited	Rossing Uranium Limited
SOPAMIN (Société de Patrimoine des Mines du Niger "Heritage Society of Mines in Niger")	Rossing Uranium Limited	SOPAMIN (Société de Patrimoine des Mines du Niger "Heritage Society of Mines in Niger")
Southern Cross Resources Australia Pty. Ltd.	TENAM Corporation	Southern Cross Resources Australia
TENAM Corporation	TENEX (Techsnabexport)	TENAM Corporation
TENEX (Techsnabexport)	TEPCO Resources	TENEX(Techsnabexport)
Traxys North America, LLC	Traxys North America, LLC	Traxys North America, LLC
UG U.S.A., Inc.	UG U.S.A., Inc.	UG U.S.A., Inc.
Uranerz Energy Corporation	USEC, Inc. (United States Enrichment Corporation)	USEC, Inc. (United States Enrichment Corporation)
Uranium One	Uranerz Energy Corporation	Uranerz Energy Corporation
UrAsia Energy Ltd.	Uranium One	Uranium One
URENCO, Inc.	URENCO, Inc.	URENCO, Inc.
Ur-Energy / Ur-Energy USA Inc	Ur-Energy / Ur-Energy USA Inc	Ur-Energy / Ur-Energy USA Inc
USEC, Inc. (United States Enrichment Corporation)	Western Uranium Corporation	Westinghouse Electric Company, LLC
Westinghouse Electric Company, LLC	Westinghouse Electric Company, LLC	

Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2017–2019)

Table 25. Enrichment service sellers to owners and operators of U.S. civilian nuclear power reactors, 2017–2019

2017	2018	2019
AREVA Enrichment Services, LLC / AREVA NC, Inc.	Advance Uranium Asset Management	AREVA Enrichment Services, LLC / AREVA NC, Inc.
CAMECO	AREVA Enrichment Services, LLC / AREVA NC, Inc.	CNEIC (China Nuclear Energy Industry Corporation)
CNEIC (China Nuclear Energy Industry Corporation)	CNEIC (China Nuclear Energy Industry Corporation)	Energy Northwest
Energy Northwest	Energy Northwest	LES, LLC (Louisiana Energy Services)
LES, LLC (Louisiana Energy Services)	LES, LLC (Louisiana Energy Services)	TENAM Corporation
TENAM Corporation	Nukem, Inc.	TENEX (Techsnabexport Joint Stock Company)
TENEX (Techsnabexport Joint Stock Company)	NYNCO Trading, LTD	TENAM Corporation
UG U.S.A., Inc.	TENAM Corporation	UG USA
URENCO, Inc. (Deutschland GmbH, Nederland B.V., UK Limited)	TENEX (Techsnabexport Joint Stock Company)	URENCO, Inc. (Deutschland GmbH, Nederland B.V., UK Limited)
URENCO USA, Inc.	URENCO, Inc. (Deutschland GmbH, Nederland B.V., UK Limited)	URENCO USA, Inc.
USEC, Inc. (United States Enrichment Corporation)	URENCO USA, Inc.	USEC, Inc. (United States Enrichment Corporation)
Westinghouse Electric Company, LLC	USEC, Inc. (United States Enrichment Corporation)	Westinghouse Electric Company, LLC
	Westinghouse Electric Company, LLC	

Source: U.S. Energy Information Administration, Form EIA-858, *Uranium Marketing Annual Survey* (2017–2019)