

# The Nuclear Review

December 2016 | Number 580

Spotlight on Mining—  
Vimy Resources

International Energy Agency  
Examines Global Energy Trends



# The Nuclear Review

December 2016 Number 580

## Departments

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- 2 Market Review  
*Market Values Summary / November Market Review / Current Market Data*
- 26 Nuclear Industry Calendar
- 27 Historical Market Data
- 33 Government Statistics
- 37 Uranium Market Statistics

## Features

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- 16 **Spotlight on Mining—Vimy Resources**  
Perth-based Vimy Resources is focused on developing its Mulga Rock Uranium Project, the third-largest, undeveloped uranium deposit in Australia. Located in the Great Victoria Desert in Western Australia, the project holds a 76.8 million-pound  $U_3O_8$  resource with an expected 17-year mine life. In this article, TradeTech presents a conversation with Vimy Resources Managing Director and CEO Mike Young.
- 22 **International Energy Agency Examines Global Energy Trends**  
The International Energy Agency released its *World Energy Outlook 2016* in November, forecasting energy supply and demand through 2040. The outlook examines energy trends among the 24 signatories of the Convention on the Organization for Economic Co-operation and Development (OECD) as well as non-OECD countries.

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**On the Cover**

Drilling activities at the Mulga Rock Uranium Project in Western Australia.

*Photo courtesy of Vimy Resources Limited*

# Recent Transactions

## Uranium Sales

Transaction Number	Delivery Period	Approximate Quantity (thousand pounds equivalent U <sub>3</sub> O <sub>8</sub> )	Price within Percentage Range of Current Exchange Value, or Long-Term U <sub>3</sub> O <sub>8</sub> Price Indicator, as Applicable <sup>1</sup>	Buyer	Seller	Remarks
10615U	2016	101-300	103-110	R	R	UF <sub>6</sub>
10616	2016	101-300	103-110	Intermediary	Intermediary	U <sub>3</sub> O <sub>8</sub>
10617	2016	51-100	103-110	Intermediary	Intermediary	U <sub>3</sub> O <sub>8</sub>
10618	2016	51-100	103-110	Utility	Intermediary	U <sub>3</sub> O <sub>8</sub>
10619	2016	51-100	103-110	Intermediary	Intermediary	U <sub>3</sub> O <sub>8</sub>
10620U	2016	101-300	R	Utility	R	UF <sub>6</sub>
10621	2016	101-300	103-110	Intermediary	Producer	U <sub>3</sub> O <sub>8</sub>
10622	2016	51-100	103-110	Intermediary	Producer	U <sub>3</sub> O <sub>8</sub>
10623U	2016	101-300	103-110	Utility	R	UF <sub>6</sub>
10624	2016	51-100	R	Intermediary	R	U <sub>3</sub> O <sub>8</sub>
10625	2016	51-100	R	R	Producer	U <sub>3</sub> O <sub>8</sub>
10626	2017	101-300	R	Producer	R	U <sub>3</sub> O <sub>8</sub>
10627	2017	101-300	R	Producer	R	U <sub>3</sub> O <sub>8</sub>
10628	2016	51-100	98-102	Intermediary	Intermediary	U <sub>3</sub> O <sub>8</sub>
10629	2016	51-100	103-110	R	Intermediary	U <sub>3</sub> O <sub>8</sub>
10630U	2016	101-300	103-110	Intermediary	Producer	UF <sub>6</sub>
10631	2016	51-100	103-110	Intermediary	Producer	U <sub>3</sub> O <sub>8</sub>
10632	2017	301-600	MR	Intermediary	Utility	U <sub>3</sub> O <sub>8</sub>
10633	2017	50 or less	98-102	Intermediary	Intermediary	U <sub>3</sub> O <sub>8</sub>
10634	2017	51-100	98-102	Utility	Intermediary	U <sub>3</sub> O <sub>8</sub>
10635	2017	50 or less	98-102	Intermediary	Intermediary	U <sub>3</sub> O <sub>8</sub>
10636	2018-2019	101-300	MR	Intermediary	Producer	U <sub>3</sub> O <sub>8</sub>
10637U	2019-2022	101-300	R	Utility	Intermediary	EUP

**R** TradeTech either does not know, or TradeTech has restricted information to protect client or source confidentiality. TradeTech may delay reporting some transactions in order to protect proprietary information.

**MR** Represents transactions with market-related pricing terms.

**FIXED** Represents transactions with fixed pricing terms.

<sup>1</sup> Price ranges *Below 90, 90-97, 98-102, 103-110, Above 110*, represent percentages (rounded to whole numbers) of the appropriate current Market Value. Endpoints of each range are included within that range.

# Recent Transactions

## Natural Uranium Loans

Transaction Number	Delivery Period	Approximate Quantity (thousand pounds equivalent U <sub>3</sub> O <sub>8</sub> )	Interest Rate within Percentage Range of Current Loan Rate <sup>1</sup>	Borrower	Lender	Remarks
No loans were reported.						

## Conversion Sales

Transaction Number	Delivery Period	Approximate Quantity (thousand kgU as UF <sub>6</sub> )	Price within Percentage Range of Current Conversion Value, or Long-Term Conversion Price Indicator, as Applicable <sup>1</sup>	Buyer	Seller	Remarks
10615C	2016	51-100	98-102	R	R	UF <sub>6</sub>
10620C	2016	51-100	R	Utility	R	UF <sub>6</sub>
10623C	2016	51-100	98-102	Utility	R	UF <sub>6</sub>
10630C	2016	51-100	98-102	Intermediary	Intermediary	UF <sub>6</sub>
10637C	2019-2022	51-100	R	Utility	Intermediary	

## Enrichment Sales

Transaction Number	Delivery Period	Approximate Quantity (thousand SWU)	Price within Percentage Range of Current SWU Value, or Long-Term SWU Price Indicator, as Applicable <sup>1</sup>	Buyer	Seller	Remarks
10637S	2019-2022	50 or less	R	Utility	Enricher	

**R** TradeTech either does not know, or TradeTech has restricted information to protect client or source confidentiality. TradeTech may delay reporting some transactions in order to protect proprietary information.

**MR** Represents transactions with market-related pricing terms.

**FIXED** Represents transactions with fixed pricing terms.

<sup>1</sup> Price ranges *Below 90, 90-97, 98-102, 103-110, Above 110*, represent percentages (rounded to whole numbers) of the appropriate current Market Value. Endpoints of each range are included within that range.

# Market Values Summary

## Spot Price Indicators

NUEXCO Market Values	Nov 30, 2016	Oct 31, 2016	Units
Exchange Value	\$17.75	\$18.75	US\$ / lb U <sub>3</sub> O <sub>8</sub>
Daily U <sub>3</sub> O <sub>8</sub> <sup>2</sup>	\$17.75	\$18.75	US\$ / lb U <sub>3</sub> O <sub>8</sub>
UF <sub>6</sub> Value	\$53.00	\$55.00	US\$ / kgU as UF <sub>6</sub>
Loan Rate	1.00	1.00	Percent / annum
Conversion Value			
– North American	\$6.00	\$6.00	US\$ / kgU as UF <sub>6</sub>
– European	\$6.50	\$6.50	US\$ / kgU as UF <sub>6</sub>
SWU Value	\$48.00	\$49.00	US\$ / SWU
Transaction Value	\$21.05	\$22.70	US\$ / lb U <sub>3</sub> O <sub>8</sub>
– Based on	45	38	Transactions
– Over	3	3	Months
– Involving	6.1	4.9	Million lbs U <sub>3</sub> O <sub>8</sub> Eq.
Uranium Supply & Demand			
– Active Supply	4.1	4.4	Million lbs U <sub>3</sub> O <sub>8</sub> Eq.
– Active Demand	3.7	2.7	Million lbs U <sub>3</sub> O <sub>8</sub> Eq.
– Supply/Demand Ratio	1.1	1.6	

## Mid-Term/Long-Term Price Indicators

Indicators	Nov 30, 2016	Oct 31, 2016	Units <sup>1</sup>
Mid-Term U <sub>3</sub> O <sub>8</sub>	\$19.00	\$20.50	US\$ / lb U <sub>3</sub> O <sub>8</sub>
Long-Term U <sub>3</sub> O <sub>8</sub>	\$34.00	\$35.00	US\$ / lb U <sub>3</sub> O <sub>8</sub>
Long-Term Conversion			
– North American	\$13.00	\$12.50	US\$ / kgU as UF <sub>6</sub>
– European	\$13.00	\$12.50	US\$ / kgU as UF <sub>6</sub>
Mid-Term SWU	\$50.00	\$53.00	US\$ / SWU
Long-Term SWU	\$55.00	\$59.00	US\$ / SWU

<sup>2</sup> The Daily U<sub>3</sub>O<sub>8</sub> Spot Price Indicator is not published on weekends or US bank holidays.

### Definitions

- The Exchange Value is our judgement of the price at which spot and near-term transactions for significant quantities of natural uranium concentrates could be concluded as of the last day of the month.
- The UF<sub>6</sub> Value is our judgement of the price at which spot and near-term transactions for significant quantities of natural uranium hexafluoride could be concluded as of the last day of the month.
- The Loan Rate is our judgement of the annual interest rate at which uranium loans could be concluded as of the last day of the month.
- The Conversion Value is our judgement of the price at which spot and near-term transactions for significant quantities of conversion services could be concluded as of the last day of the month.
- The SWU Value is our judgement of the price at which spot and near-term transactions for significant quantities of enrichment services could be concluded as of the last day of the month.
- The Transaction Value is a weighted average price of recent natural uranium sales transactions. The calculation is based on prices paid in:
  - Transactions closed within the previous three-month period for which delivery is scheduled within one year of the transaction date;
  - At least 10 transactions;
  - Transactions involving a sum total of at least 2 million pounds equivalent U<sub>3</sub>O<sub>8</sub>.
- The Mid-Term Price Indicators for U<sub>3</sub>O<sub>8</sub> and SWU are our judgement of the base price at which transactions for mid-term or intermediate delivery of U<sub>3</sub>O<sub>8</sub> or enrichment services could be concluded as of the last day of the month,

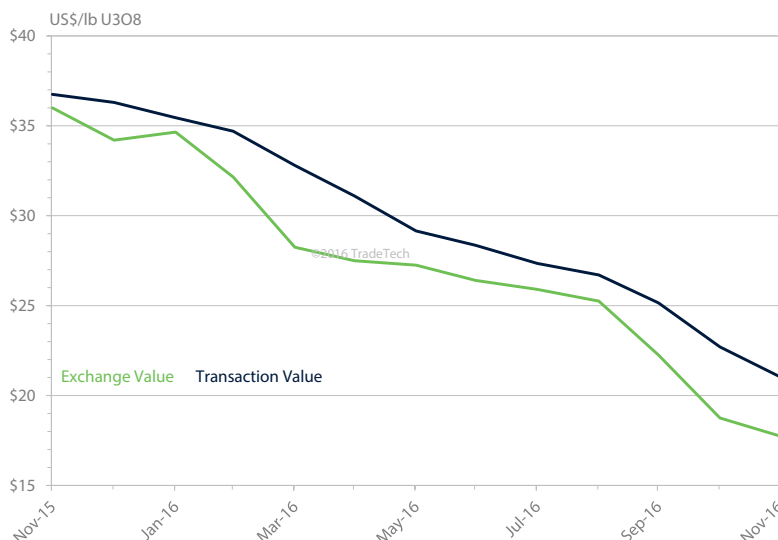
- for transactions in which the price at the time of delivery would be an escalation of the base price from a previous point in time.
- The Long-Term Price Indicators for U<sub>3</sub>O<sub>8</sub>, Conversion, or SWU are our judgement of the base price at which transactions for long-term delivery of that product or service could be concluded as of the last day of the month, for transactions in which the price at the time of delivery would be an escalation of the base price from a previous point in time.

### Derivations and Comments

- All Market Values are expressed in terms of US\$.
- All Market Values are based on:
  - Data from recently completed transactions.
  - Data from pending transactions.
  - Firm bids to buy or borrow, and firm offers to sell or lend.
  - Prices purchasers or rates borrowers have expressed a willingness to pay, but for which we are not aware of firm bids to buy or borrow and prices sellers or rates lenders have expressed a willingness to accept, but for which we are not aware of firm offers to sell or lend.
- In the determination of all Market Values, we do not consider:
  - Prices associated with deliveries under old or renegotiated contracts, or other than arm's-length transactions.
  - Charges for transportation other than that customarily provided by suppliers.
  - Prices of services or materials delivered under long-term contracts with primary suppliers.
- In calculating the Transaction Value, we do not account for the price of uranium delivered in connection with contracts which call for "market price" mechanisms. This exclusion applies particularly to contracts in which delivery prices are expressed as a function of future Exchange Values or any other indeterminate variable. Also excluded from the calculation are any other transactions in which the delivery price is defined in such a way that it cannot currently be determined.
- The sample time for the Transaction Value is extended for up to six months, if necessary to satisfy the minima for the number of transactions (10) and quantity of material (2 million pounds equivalent U<sub>3</sub>O<sub>8</sub>). The sample time is extended beyond six months only as necessary to include a minimum of five transactions and 1 million pounds equivalent U<sub>3</sub>O<sub>8</sub>. Any required currency conversions to US dollars are made on the basis of conversion rates in effect on or near the transaction date.

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Exchange Value & Transaction Value  
Nov 2015 - Nov 2016



# November Market Review

## Uranium

After showing signs of stabilizing during the month of November, the spot uranium price took another tumble as participants returned to the market following the US Thanksgiving holiday. TradeTech's Exchange Value dropped to \$17.75 per pound  $U_3O_8$ —a new 12-year low.

A total of over 3 million pounds  $U_3O_8$  equivalent changed hands over the course of the month involving 21 transactions; eight of this total were concluded during the last four working days of November. Traders were active as both purchasers and sellers of spot uranium and accounted for approximately one-half of the material sold and one-third of the total volume purchased during November. Utilities and producers also participated as buyers, and financial entities recorded some activity as well.

Year-end sales objectives, along with increasing buyer resistance to commit to transactions and seller uncertainty about an increase in near-term spot demand, were the primary factors driving sellers to lower offer prices as year end approaches.

TradeTech's **Exchange Value** declined to **\$17.75** per pound  $U_3O_8$ , a drop of \$1.00 from the October 31 Value of \$18.75 per pound  $U_3O_8$ .

The uranium spot price fell 4.1 percent between November 25 and month end. The spot price has been nearly halved in

2016, with the average weekly return to date this year standing at -1.2 percent. The November 30 Exchange Value marked the lowest uranium spot price since May 21, 2004. Consistent negative movement in the spot price since the Fukushima accident in March 2011, has resulted in a compound annual growth rate of -24 percent, for an overall reduction of 74 percent.

In the term uranium market, two transactions were reported for the month of November. One US utility, seeking up to 10 percent of its requirements as enriched uranium product (EUP) to be delivered between 2019 and 2022, selected a preferred supplier. At month end, one non-US utility was evaluating offers for up to 5,000 tU for delivery over 10 years. Another non-US utility was seeking offers for about 1 million pounds  $U_3O_8$  to be delivered next year. A third non-US utility requested offers in November seeking up to seven reloads of uranium contained in EUP.

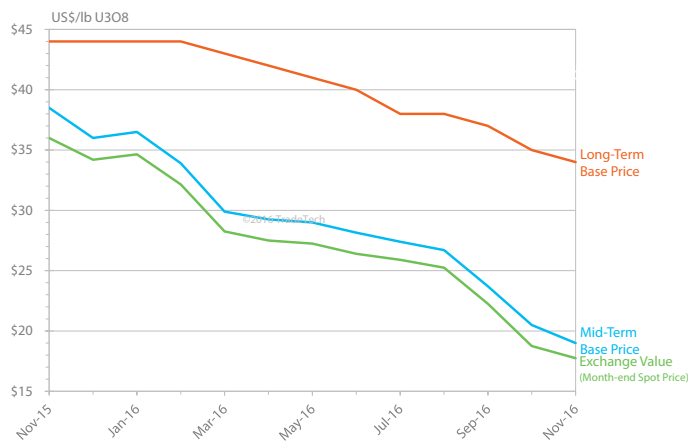
One US utility entered the term market in November requesting offers for up to approximately 4.8 million pounds equivalent to be delivered between 2023 and 2030 (the utility will consider offers for up

to 8 million pounds  $U_3O_8$  equivalent over the period); offers are due no later than January 4. One non-US utility was expected to enter the market seeking over 6 million pounds  $U_3O_8$  between 2017 and 2028.

Market participants continue to carefully watch the market as several utilities are considering mid- and long-term purchases. However, the previous lack of uncertainty over federal and state legislative policies in the USA regarding nuclear energy was mitigated on November 30, with Illinois' governor announcing that the State had reached agreement with Exelon and ComEd on the hotly contested nuclear energy legislation.

Utilities, particularly in the USA, are under increasing pressure to reduce costs in order to remain competitive, and the willingness of utilities to delay coming to the market for longer-term commitments has resulted in production-side postponements, delays, and curtailments, including a November 30 report that Cameco

U3O8 Prices  
Nov 2015 - Nov 2016





intends to halt production at its McArthur River mine in northern Saskatchewan for a six-week period starting in July 2017. The mine shutdown is reportedly intended “to help address economic challenges facing [the uranium mining] industry,” and will include a mandatory four-week vacation period for non-essential personnel, according to an internal memo obtained by the *Saskatoon StarPhoenix*.

Term offer levels, solicited and unsolicited, continued to weaken in November, and TradeTech’s **Mid-Term U<sub>3</sub>O<sub>8</sub> Price Indicator** was **\$19.00** per pound U<sub>3</sub>O<sub>8</sub>, down \$1.50 per pound U<sub>3</sub>O<sub>8</sub>, from the October 31 Indicator. TradeTech’s **Long-Term U<sub>3</sub>O<sub>8</sub> Price Indicator** was **\$34.00** per pound U<sub>3</sub>O<sub>8</sub>, down \$1.00 from last month’s Indicator.

The UF<sub>6</sub> market was relatively quiet in November with four transactions, involving approximately 300 tU as UF<sub>6</sub>, concluded. TradeTech’s **UF<sub>6</sub> Value** for November 30 was **\$53.00** per kgU as UF<sub>6</sub>, down \$2.00 from the October 31 Value, representing the corresponding drop in the component price for uranium.

The **Transaction Value** dropped to **\$21.05** per pound U<sub>3</sub>O<sub>8</sub>, based on 45 transactions over 3 months involving 6.1 million pound U<sub>3</sub>O<sub>8</sub> equivalent. (Note: TradeTech’s Transaction Value is a weighted average price of recent natural uranium sales transactions, based on prices paid in: 1) transactions closed within the previous three-month period for which delivery is scheduled within one year of the

transaction date; 2) at least 10 transactions; and 3) transactions involving a total of at least 2 million pounds equivalent U<sub>3</sub>O<sub>8</sub>.)

**Active uranium supply** fell to **4.1 million pounds U<sub>3</sub>O<sub>8</sub> equivalent**.

**Active uranium demand** increased to **3.7 million pounds U<sub>3</sub>O<sub>8</sub> equivalent**. The corresponding **supply/demand ratio** was **1.1**.

The loan market was quiet in November with no transactions reported for the month. TradeTech’s November 30 **Loan Rate** remained at **1.00** percent per annum, unchanged from the October 31 Rate.

## Conversion

Five transactions were reported in the conversion market during November, which involve delivery of conversion contained in UF<sub>6</sub> or conversion contained in the form of EUP. Four of the transactions involve spot delivery while one deal involves deliveries in the long-term period.

One US utility, seeking up to 10 percent of its conversion requirements in the form of EUP for delivery over the 2019-2022 period, selected a preferred supplier. At month end, one non-US

## Near-Term Uranium Sales Summary

Nov 30, 2016

	# of Sales	Million lbs U <sub>3</sub> O <sub>8</sub> Eq.
U <sub>3</sub> O <sub>8</sub>	17	2.4
Natural UF <sub>6</sub>	4	0.9
EUP	0	0.0
Total	21	3.2 <sup>3</sup>

Year-to-Date 2016

	# of Sales	Million lbs U <sub>3</sub> O <sub>8</sub> Eq.
U <sub>3</sub> O <sub>8</sub>	243	33.3
Natural UF <sub>6</sub>	23	4.0
EUP	0	0.0
Total	266	37.3 <sup>3</sup>

<sup>3</sup> Due to independent rounding, total may not equal the sum of individual components.

utility was evaluating offers for up to seven reloads of conversion contained in EUP over the 2018-2023 period. One non-US utility entered the market seeking offers for up to 3,000 tU of conversion for delivery between 2021 and 2030; offers were due by December 13.

Additional demand emerged in the conversion market with a US utility issuing a Request for Proposals for approximately 1,800 tU of conversion contained in UF<sub>6</sub> for delivery between 2023 and 2030, although the utility has indicated it could accept up to 3,100 tU of conversion over the period; offers are due by January 4.

The conversion market continues to exhibit a wide range of prices, especially for offers and transactions with delivery in the very long-term (post-2020) period. Competition in the spot and near-term period remains quite intense as primary and other conversion sellers vie for business. However, the number of parties able and/or willing to commit to significant quantities of straight conversion in the long-term period is limited and, therefore, offers are significantly higher in this period than prices observed in the intermediate (pre-2020) time frame.

## Active Spot Supply & Demand<sup>4</sup>

Nov 30, 2016

	Available for Sale	Inquiries to Purchase	Units
U <sub>3</sub> O <sub>8</sub>	4.1	3.7	Million lbs U <sub>3</sub> O <sub>8</sub> Eq.
Conversion	2.2	0.6	Thousand tU as UF <sub>6</sub>
SWU	2.8	0.1	Million SWU

<sup>4</sup> For delivery within one year, measured from the date of this Review. This category excludes material deliverable within one year under other than spot or near-term contracts.

**NUEXCO SWU Value**

US\$ per SWU

	Nov 30, 2016	May 31, 2016	Nov 30, 2015
SWU Value	\$48	\$58	\$61

**Calculated Worth of Enriched UF<sub>6</sub>**US\$ per kgU as enriched UF<sub>6</sub>

Product Assay	This Month Nov 30, 2016	6 Months Ago May 31, 2016	12 Months Ago Nov 30, 2015
2.0 w/o <sup>235</sup> U	\$292	\$400	\$489
2.5 w/o <sup>235</sup> U	\$393	\$536	\$651
3.0 w/o <sup>235</sup> U	\$497	\$675	\$816
3.5 w/o <sup>235</sup> U	\$601	\$815	\$982
4.0 w/o <sup>235</sup> U	\$707	\$956	\$1,150
4.5 w/o <sup>235</sup> U	\$814	\$1,099	\$1,319
4.95 w/o <sup>235</sup> U	\$911	\$1,228	\$1,472

Primary converters are seeking to secure market share to support future production, while buyers move to diversify their conversion profiles to incorporate a variety of suppliers, forms, and time periods into their portfolios.

Primary supply sources continue to form the foundation of conversion supply, commanding higher prices than supply sources from UF<sub>6</sub> or EUP. Other factors affecting offer prices include volumes, delivery term, location, and a range of other contract terms and conditions. While some sellers are aggressive in pursuing business in the three- to five-year delivery window, some utilities are exhibiting an increased willingness to pay higher prices in the extended long-term delivery window for primary conversion, in recognition of increasing production, labor, and regulatory costs.

The **North American Conversion Value** for November 30 was unchanged at **\$6.00** per kgU as UF<sub>6</sub>. The **European Conversion Value** was **\$6.50** per kgU as UF<sub>6</sub>, also unchanged from the October 31 Value. TradeTech's **November 30 Long-Term Conversion Value for North American delivery** was **\$13.00** per kgU as UF<sub>6</sub>, up \$0.50 from the October 31 Indicator. The **Long-Term Conversion Price**

**Indicator for European delivery** was **\$13.00** per kgU as UF<sub>6</sub>, up \$0.50 from the October 31 Indicator.

## Enrichment

One transaction was reported in the enrichment market during November, with a US utility selecting a preferred supplier for up to 10 percent of its SWU requirements, contained in the form of EUP, to be delivered over a four-year period beginning in 2019. At month end, one US utility continued to evaluate offers for approximately 50,000 SWU for spot delivery. One non-US utility was evaluating offers for up to seven reloads of enrichment contained in EUP for delivery beginning in 2018 and extending until 2023.

The enrichment market continues to struggle with weak demand in the spot and near-term as a variety of sellers compete for each new sales opportunity that emerges. Primary enrichers are engaged in a fierce battle to retain market share, while intermediaries and inventory holders are slashing prices in an effort to secure sales. Sellers of EUP inventories continue to offer EUP at prices that represent a discount from its SWU and natural feed component price and the recent decline in the spot uranium

price has exerted additional downward pressure on EUP prices, especially in the spot and mid-term markets.

TradeTech's **SWU Value** was down \$1.00 to \$48.00 per SWU, a historic low. The previous floor was set more than 25 years ago, when the spot price was \$50.00 per SWU throughout much of 1990. The SWU Value climbed to \$94.00 per SWU in 1996, then entered a prolonged period of low volatility in the mid 1990s that extended through the mid 2000s. As with uranium prices, the SWU Value increased in the mid to late 2000s, reaching a high of \$165.00 per SWU in 2010. Since then, the SWU Value has steadily declined.

The competitive field in the very long-term delivery window (post 2020) is more limited as sellers are reticent to commit significant quantities at today's lower prices into the very long term. As a result, there is a wide spread of offer and transaction prices observed in the long-term enrichment market depending upon whether a buyer is willing to accept EUP, tails and product assay, delivery location, and the perceived financial stability and/or geopolitical diversity offered by an individual seller. Offers for very long-term delivery remain higher than prices observed in the spot and mid-term SWU markets, and straight SWU offers remain higher than offers for EUP. However, prices across the enrichment market, whether for spot, mid- or long-term delivery or from primary sources or other sellers, are all under downward price pressure.

TradeTech's **SWU Value** for November 30 is **\$48.00** per SWU, down \$1.00 from the October 31 Value. The **Mid-Term SWU Price Indicator** for November 30 fell to **\$50.00** per SWU, a \$3.00 decrease compared to the October 31 Indicator. The **Long-Term SWU Price Indicator** for November 30 was **\$55.00** per SWU, down \$4.00 from last month's Indicator.





# Uranium Supply and Demand

## Available for Sale

Project Number	Quantity (thousand pounds equivalent U <sub>3</sub> O <sub>8</sub> )		Delivery Period	Remarks
	Spot or Near-Term <sup>4</sup>	Intermediate or Long-Term <sup>5</sup>		
1377U	150	—	2016	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1385U	400	—	2016-2017	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1386U	600	—	2016	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1387	500	—	2016	U <sub>3</sub> O <sub>8</sub>
1388	400	—	2016	U <sub>3</sub> O <sub>8</sub>
1393U	800	—	2016	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1394	600	—	2016-2017	U <sub>3</sub> O <sub>8</sub>
1395	600	—	2016-2017	U <sub>3</sub> O <sub>8</sub>
1004U	—	550	2016-2018	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1007U	—	800	2016-2018	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1019	—	500	2016-2017	U <sub>3</sub> O <sub>8</sub>
1180U	—	800	2016-2018	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1184	—	300	2016-2017	U <sub>3</sub> O <sub>8</sub>
1189U	—	1,000	2016-2017	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1220U	—	500	2016-2018	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1222U	—	1,000	2016-2019	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1223U	—	1,568	2016-2017	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1243U	—	800	2016-2018	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1244	—	800	2016-2018	U <sub>3</sub> O <sub>8</sub>
1276	—	500	2016-2017	U <sub>3</sub> O <sub>8</sub>
1296	—	1,000	2016-2017	U <sub>3</sub> O <sub>8</sub>
1297	—	500	2016-2017	U <sub>3</sub> O <sub>8</sub>
1298	—	500	2016-2017	U <sub>3</sub> O <sub>8</sub>
1299	—	800	2016-2018	U <sub>3</sub> O <sub>8</sub>
1300U	—	400	2016-2018	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1301	—	600	2016-2018	U <sub>3</sub> O <sub>8</sub>
1317	—	1,000	2016-2018	U <sub>3</sub> O <sub>8</sub>
1342U	—	784	2016-2017	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1358U	—	700	2016-2019	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1359	—	1,200	2016-2018	U <sub>3</sub> O <sub>8</sub>
1365U	—	600	2016-2017	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1366U	—	800	2016-2018	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1367U	—	475	2016-2017	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1369	—	800	2016-2018	U <sub>3</sub> O <sub>8</sub>
1396*	—	800	2016-2017	U <sub>3</sub> O <sub>8</sub>
1397*	—	1,000	2016-2019	U <sub>3</sub> O <sub>8</sub>
<b>Total</b>	<b>4,050</b>			

\* New or revised since last month.

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5 For delivery within one year, measured from the date of this Review. This category excludes material deliverable within one year under other than spot or near-term contracts.

6 For delivery beyond one year, measured from the date of this Review.

Active projects removed since last month: 1272

# Uranium Supply and Demand

## Inquiries to Purchase

Project Number	Quantity (thousand pounds equivalent U <sub>3</sub> O <sub>8</sub> )		Delivery Period	Remarks
	Spot or Near-Term <sup>4</sup>	Intermediate or Long-Term <sup>5</sup>		
1042	300	—	2016	U <sub>3</sub> O <sub>8</sub>
1213	200	—	2016	U <sub>3</sub> O <sub>8</sub>
1320	200	—	2016	U <sub>3</sub> O <sub>8</sub>
1333	100	—	2016	U <sub>3</sub> O <sub>8</sub>
1343	200	—	2016	U <sub>3</sub> O <sub>8</sub>
1353U	261	—	2016	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1379	300	—	2016	U <sub>3</sub> O <sub>8</sub>
1380	250	—	2016	U <sub>3</sub> O <sub>8</sub>
1381	250	—	2016	U <sub>3</sub> O <sub>8</sub>
1398	500	—	2016	U <sub>3</sub> O <sub>8</sub>
1399U	100	—	2017	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1402*	R	—	2017	U <sub>3</sub> O <sub>8</sub>
1403*	R	—	2017	U <sub>3</sub> O <sub>8</sub>
1404*	R	—	2017	U <sub>3</sub> O <sub>8</sub>
1405*	1,000	—	2017	U <sub>3</sub> O <sub>8</sub>
1065	—	800	2017-2019	U <sub>3</sub> O <sub>8</sub>
1117	—	300	2016-2017	U <sub>3</sub> O <sub>8</sub>
1145U	—	1,000	2016-2019	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1225	—	2,100	2018-2022	U <sub>3</sub> O <sub>8</sub>
1226	—	2,000	2018-2021	U <sub>3</sub> O <sub>8</sub>
1269	—	450	2018-2020	U <sub>3</sub> O <sub>8</sub>
1313	—	1,500	2017-2020	U <sub>3</sub> O <sub>8</sub>
1372U	—	2,400	2018-2020	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1392U	—	13,064	2016-2025	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1400U	—	R	2018-2023	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub> /EUP
1406U*	—	4,703	2023-2030	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1407U*	—	6,600	2017-2028	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
<b>Total</b>	<b>3,661</b>			

\* New or revised since last month.

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<sup>5</sup> For delivery within one year, measured from the date of this Review. This category excludes material deliverable within one year under other than spot or near-term contracts.

<sup>6</sup> For delivery beyond one year, measured from the date of this Review.

Active projects removed since last month: 1373, 1391U

# Loan Supply and Demand

## Available for Loan

Project Number	Quantity (thousand pounds equivalent U <sub>3</sub> O <sub>8</sub> )		Delivery Period	Remarks
	Spot or Near-Term <sup>4</sup>	Intermediate or Long-Term <sup>5</sup>		
1024	—	500	2016-2017	U <sub>3</sub> O <sub>8</sub>
1025	200	500	2016-2017	UF <sub>6</sub>
1026	400	—	2016	U <sub>3</sub> O <sub>8</sub>
1027	500	—	2016	U <sub>3</sub> O <sub>8</sub>
1028	500	500	2016-2018	U <sub>3</sub> O <sub>8</sub>
1029	1,000	—	2016-2017	U <sub>3</sub> O <sub>8</sub>
<b>Total</b>	<b>2,600</b>			

## Inquiries to Borrow

Project Number	Quantity (thousand pounds equivalent U <sub>3</sub> O <sub>8</sub> )		Delivery Period	Remarks
	Spot or Near-Term <sup>4</sup>	Intermediate or Long-Term <sup>5</sup>		
1069	1,000	—	2016	UF <sub>6</sub>
<b>Total</b>	<b>1,000</b>			

\* New or revised since last month.

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5 For delivery within one year, measured from the date of this Review. This category excludes material deliverable within one year under other than spot or near-term contracts.

6 For delivery beyond one year, measured from the date of this Review.

Active projects removed since last month: *none reported*

# Conversion Supply and Demand

## Available for Sale

Project Number	Quantity (thousand kgU as UF <sub>6</sub> )		Delivery Period	Remarks
	Spot or Near-Term <sup>4</sup>	Intermediate or Long-Term <sup>5</sup>		
1004C	115	287	2016-2018	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1071	300	500	2016-2017	
1072	100	500	2016-2017	
1074	200	780	2016-2017	UF <sub>6</sub>
1187C	77	—	2016	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1273C	300	—	2016-2018	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1294C	230	—	2016	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1307	150	—	2016-2017	
1377C	57	—	2016	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1385C	153	—	2016-2017	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1386C	230	—	2016	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1393C	306	—	2016	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1007C	—	383	2016-2018	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1073	—	500	2016-2017	UF <sub>6</sub>
1075	—	1,000	2016-2017	
1076C	—	950	2016-2017	UF <sub>6</sub> /EUP
1180C	—	306	2016-2018	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1181C	—	383	2016-2019	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1189C	—	383	2016-2017	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1220U	—	192	2016-2018	UF <sub>6</sub>
1222U	—	383	2016-2019	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1223U	—	600	2016-2017	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1243C	—	306	2016-2018	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1261	—	1,000	2016-2018	
1300C	—	153	2016-2018	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1308	—	250	2016-2017	
1342C	—	300	2016-2017	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1365C	—	230	2016-2017	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1366C	—	306	2016-2018	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1367C	—	182	2016-2017	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
<b>Total</b>	<b>2,218</b>			

\* New or revised since last month.

R TradeTech either does not know, or that TradeTech has restricted that information to protect client or source confidentiality. TradeTech may delay reporting some projects in order to protect proprietary information.

<sup>5</sup> For delivery within one year, measured from the date of this Review. This category excludes material deliverable within one year under other than spot or near-term contracts.

<sup>6</sup> For delivery beyond one year, measured from the date of this Review.

Active projects removed since last month: *none reported*

# Conversion Supply and Demand

## Inquiries to Purchase

Project Number	Quantity (thousand kgU as UF <sub>6</sub> )		Delivery Period	Remarks
	Spot or Near-Term <sup>4</sup>	Intermediate or Long-Term <sup>5</sup>		
1079	500	—	2016	
1353C	100	—	2016	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1399C	38	—	2017	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1145C	—	375	2016-2019	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1188	—	900	2017-2020	
1227	—	400	2017-2019	
1239	—	1,500	2017-2021	
1349	—	2,000	2019-2022	
1392C	—	5,000	2016-2025	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1400C	—	R	2018-2023	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub> /EUP
1406C*	—	1,800	2023-2030	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub>
1408*	—	3,000	2021-2030	
<b>Total</b>	<b>638</b>			

\* New or revised since last month.

R TradeTech either does not know, or that TradeTech has restricted that information to protect client or source confidentiality. TradeTech may delay reporting some projects in order to protect proprietary information.

<sup>5</sup> For delivery within one year, measured from the date of this Review. This category excludes material deliverable within one year under other than spot or near-term contracts.

<sup>6</sup> For delivery beyond one year, measured from the date of this Review.

Active projects removed since last month: 1391C



# Enrichment Supply and Demand

## Available for Sale

Project Number	Quantity (thousand SWU)		Delivery Period	Remarks
	Spot or Near-Term <sup>4</sup>	Intermediate or Long-Term <sup>5</sup>		
1094	800	2,000	2016-2018	
1096	100	—	2016-2017	
1284	300	—	2016	
1285	200	—	2016	
1286	400	—	2016	
1374	600	—	2016	
1375	400	—	2016	
1090	—	2,000	2016-2020	
1092	—	200	2016-2017	
1171	—	R	R	
1287	—	900	2016-2018	
1288	—	500	2016-2017	
1289	—	2,000	2016-2019	
1290	—	6,000	2016-2017	
1311	—	1,000	2016	
1376	—	2,000	2016-2018	
<b>Total</b>	<b>2,800</b>			

## Inquiries to Purchase

Project Number	Quantity (thousand SWU)		Delivery Period	Remarks
	Spot or Near-Term <sup>4</sup>	Intermediate or Long-Term <sup>5</sup>		
1401	50	—	2016	
1409*	50	—	2016	
1099	—	1,000	2016-2017	
1138	—	1,500	2016-2017	
1147	—	500	2018-2022	
1148	—	300	R	
1391S	—	230	2018-2019	
1400S	—	R	2018-2023	U <sub>3</sub> O <sub>8</sub> /UF <sub>6</sub> /EUP
<b>Total</b>	<b>100</b>			

\* New or revised since last month.

R TradeTech either does not know, or that TradeTech has restricted that information to protect client or source confidentiality. TradeTech may delay reporting some projects in order to protect proprietary information.

<sup>5</sup> For delivery within one year, measured from the date of this Review. This category excludes material deliverable within one year under other than spot or near-term contracts.

<sup>6</sup> For delivery beyond one year, measured from the date of this Review.

Active projects removed since last month: 1391S

# Market Values Expressed in Selected Currencies<sup>7</sup>

## Argentina to Kazakhstan

	Argentina (peso)	Australia (dollar)	Brazil (real)	Canada (dollar)	China (yuan)	Czech Rep. (koruna)	Euro. Union <sup>8</sup> (euro)	Hungary (forints)	India (rupee)	Japan (yen)	Kazakhstan (tenge)
<b>Exchange Value</b>											
<i>per pound equivalent U<sub>3</sub>O<sub>8</sub> as concentrates</i>											
Nov 30, 2016	281.64	24.04	60.07	23.85	122.38	453.42	16.76	5,243.35	1,217.62	2,031.67	6,027.55
Nov 30, 2015	347.76	49.81	139.28	48.11	230.31	260.04	34.08	10,598.04	2,392.65	4,431.96	11,073.24
<i>per kgU as concentrates</i>											
Nov 30, 2016	732.20	62.49	156.17	62.01	318.16	1,178.80	43.58	13,631.59	3,165.54	5,281.89	15,670.33
Nov 30, 2015	904.11	129.48	362.11	125.07	598.76	676.05	88.59	27,552.64	6,220.37	11,522.15	28,788.05
<b>UF<sub>6</sub> Value</b>											
<i>per kgU as UF<sub>6</sub></i>											
Nov 30, 2016	840.95	71.77	179.36	71.22	365.42	1,353.89	50.05	15,656.20	3,635.70	6,066.38	17,997.74
Nov 30, 2015	966.01	138.35	386.90	133.63	639.75	722.34	94.66	29,439.00	6,646.24	12,311.00	30,759.00
<b>Transaction Value</b>											
<i>per pound equivalent U<sub>3</sub>O<sub>8</sub> as concentrates</i>											
Nov 30, 2016	334.00	28.50	71.24	28.28	145.13	537.72	19.88	6,218.17	1,443.99	2,409.38	7,148.16
Nov 30, 2015	355.01	50.84	142.19	49.11	235.11	265.46	34.79	10,818.83	2,442.49	4,524.29	11,303.93
<i>per kgU as concentrates</i>											
Nov 30, 2016	868.33	74.10	185.20	73.53	377.32	1,397.96	51.68	16,165.91	3,754.06	6,263.88	18,583.68
Nov 30, 2015	922.95	132.18	369.65	127.67	611.23	690.14	90.44	28,126.65	6,349.96	11,762.19	29,387.81
<b>Conversion Value<sup>9,10</sup></b>											
<i>per kgU as UF<sub>6</sub></i>											
Nov 30, 2016 (NA)	95.20	8.12	20.31	8.06	41.37	153.27	5.67	1,772.40	411.59	686.76	2,037.48
Nov 30, 2016 (E)	103.14	8.80	22.00	8.73	44.82	166.04	6.14	1,920.10	445.89	743.99	2,207.27
Nov 30, 2015 (NA)	67.62	9.68	27.08	9.35	44.78	50.56	6.63	2,060.73	465.24	861.77	2,153.13
Nov 30, 2015 (E)	72.45	10.38	29.02	10.02	47.98	54.18	7.10	2,207.93	498.47	923.33	2,306.93
<i>per pound U as UF<sub>6</sub></i>											
Nov 30, 2016 (NA)	43.18	3.69	9.21	3.66	18.76	69.52	2.57	803.95	186.69	311.51	924.18
Nov 30, 2016 (E)	46.78	3.99	9.98	3.96	20.33	75.32	2.78	870.94	202.25	337.47	1,001.20
Nov 30, 2015 (NA)	30.67	4.39	12.28	4.24	20.31	22.94	3.01	934.73	211.03	390.89	976.64
Nov 30, 2015 (E)	32.86	4.71	13.16	4.55	21.76	24.57	3.22	1,001.50	226.10	418.81	1,046.40
<b>SWU Value</b>											
<i>per SWU</i>											
Nov 30, 2016	762	65	162	64	331	1,226	45	14,179	3,293	5,494	16,300
Nov 30, 2015	589	84	236	82	390	441	58	17,958	4,054	7,510	18,763

<sup>7</sup> Calculated using currency exchange rates for the last business day of the month, as published in *The Wall Street Journal*.

<sup>8</sup> The following European Union nations are using the Euro as their official currency: Belgium, Finland, France, Germany, Italy, The Netherlands, Slovak Republic, and Spain.

<sup>9</sup> North American delivery

<sup>10</sup> European delivery

<sup>11</sup> Although Namibia has its own national currency, the South African Rand remains a legal tender in Namibia, as the Namibia Dollar is linked to the South African Rand on a 1:1 basis.

<sup>12</sup> The following West African nations are using the CFA franc as their official currency: Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Sénégal, and Togo.

# Market Values Expressed in Selected Currencies<sup>7</sup>

## Mexico to W. Africa

	Mexico (peso)	Pakistan (rupee)	Russia (ruble)	S. Africa <sup>11</sup> (rand)	S. Korea (won)	Sweden (krona)	Switzerland (francs)	Taiwan (dollar)	UK (pound)	USA (dollar)	W. Africa <sup>12</sup> (CFA franc)
<b>Exchange Value</b>											
<i>per pound equivalent U<sub>3</sub>O<sub>8</sub> as concentrates</i>											
Nov 30, 2016	365.17	1,860.20	1,137.88	250.19	20,903	163.84	18.06	566.23	14.19	17.75	10,938.85
Nov 30, 2015	596.77	3,799.80	2,388.17	520.15	41,782	314.15	37.04	1,177.56	23.91	36.00	22,320.00
<i>per kgU as concentrates</i>											
Nov 30, 2016	949.37	4,836.12	2,958.25	650.44	54,343	425.96	46.95	1,472.06	36.90	46.15	28,438.66
Nov 30, 2015	1,551.47	9,878.67	6,208.73	1,352.27	108,624	816.73	96.31	3,061.40	62.16	93.59	58,027.22
<b>UF<sub>6</sub> Value</b>											
<i>per kgU as UF<sub>6</sub></i>											
Nov 30, 2016	1,090.37	5,554.40	3,397.62	747.05	62,414	489.23	53.92	1,690.70	42.38	53.00	32,662.47
Nov 30, 2015	1,657.69	10,555.00	6,633.80	1,444.85	116,061	872.65	102.90	3,271.00	66.42	100.00	62,000.00
<b>Transaction Value</b>											
<i>per pound equivalent U<sub>3</sub>O<sub>8</sub> as concentrates</i>											
Nov 30, 2016	433.06	2,206.04	1,349.43	296.70	24,789	194.31	21.42	671.50	16.83	21.05	12,972.55
Nov 30, 2015	609.20	3,878.96	2,437.92	530.98	42,652	320.70	37.82	1,202.09	24.41	36.75	22,785.00
<i>per kgU as concentrates</i>											
Nov 30, 2016	1,125.87	5,735.23	3,508.23	771.37	64,446	505.15	55.68	1,745.74	43.76	54.73	33,725.85
Nov 30, 2015	1,583.79	10,084.47	6,338.07	1,380.44	110,887	833.75	98.31	3,125.18	63.46	95.54	59,236.12
<b>Conversion Value</b>											
<i>per kgU as UF<sub>6</sub></i>											
Nov 30, 2016 (NA)	123.44	628.80	384.64	84.57	7,066	55.38	6.10	191.40	4.80	6.00	3,697.64
Nov 30, 2016 (E)	133.73	681.20	416.69	91.62	7,655	60.00	6.61	207.35	5.20	6.50	4,005.77
Nov 30, 2015 (NA)	116.04	738.85	464.37	101.14	8,124	61.09	7.20	228.97	4.65	7.00	4,340.00
Nov 30, 2015 (E)	124.33	791.63	497.54	108.36	8,705	65.45	7.72	245.33	4.98	7.50	4,650.00
<i>per pound U as UF<sub>6</sub></i>											
Nov 30, 2016 (NA)	55.99	285.22	174.47	38.36	3,205	25.12	2.77	86.82	2.18	2.72	1,677.22
Nov 30, 2016 (E)	60.66	308.99	189.01	41.56	3,472	27.22	3.00	94.05	2.36	2.95	1,816.99
Nov 30, 2015 (NA)	52.63	335.14	210.63	45.88	3,685	27.71	3.27	103.86	2.11	3.18	1,968.59
Nov 30, 2015 (E)	56.39	359.07	225.68	49.15	3,948	29.69	3.50	111.28	2.26	3.40	2,109.20
<b>SWU Value</b>											
<i>per SWU</i>											
Nov 30, 2016	988	5,030	3,077	677	56,526	443	49	1,531	38	48	29,581
Nov 30, 2015	1,011	6,439	4,047	881	70,797	532	63	1,995	41	61	37,820

<sup>7</sup> Calculated using currency exchange rates for the last business day of the month, as published in *The Wall Street Journal*.

<sup>8</sup> The following European Union nations are using the Euro as their official currency: Belgium, Finland, France, Germany, Italy, The Netherlands, Slovak Republic, and Spain.

<sup>9</sup> North American delivery

<sup>10</sup> European delivery

<sup>11</sup> Although Namibia has its own national currency, the South African Rand remains a legal tender in Namibia, as the Namibia Dollar is linked to the South African Rand on a 1:1 basis.

<sup>12</sup> The following West African nations are using the CFA franc as their official currency: Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Sénégal, and Togo.

# Spotlight on Mining— Vimy Resources



Perth-based uranium developer Vimy Resources Limited (Vimy) is focused on developing its Mulga Rock Uranium Project (MRP), the third-largest, undeveloped uranium deposit in Australia. The project, located near Kalgoorlie in the Great Victoria Desert in Western Australia (WA), is a 76.8 million-pound U<sub>3</sub>O<sub>8</sub> resource with an expected 17-year mine life (Figure 1). With environmental approvals well progressed and permission to begin preliminary site works, the company's directors have also made progress in securing financing arrangements with established funds.

The ASX-listed company, which has an environmental award nomination in hand and a commitment to "Mining a Cleaner Tomorrow," aims to make a final investment decision in early 2017. Although the project has progressed rapidly, uranium market conditions and Australian law pose potential delays to full development of the resource. In this article, TradeTech presents a conversation with Vimy Resources Managing Director and CEO Mike Young.

**TNR:** The MRP is expected to produce uranium for 17 years and create nearly 500 jobs in WA, yet uranium developers in the state face strong opposition from the Labor Party. With an election looming in March 2017, and Labor leading in the polls, it appears to be a race against time to gain final approvals. Where does MRP stand with respect to this potential shift in policy?

**Young:** The election of the Australian Labor Party (ALP) in WA is no certainty; while polls have shown a win for the ALP, recent events in America and Britain have shown how wrong the press and polls can be as well as a shift to the right.

The Public Environmental Review process conducted by the Office of the Environmental Protection Authority (EPA) is very thorough. In August this year, the EPA prepared an assessment report for the MRP and recommended its approval by the Minister.

The approval of both the state and federal Environment Ministers is expected to be received before the WA state election in March 2017. Vimy does not expect any change to that decision following the election, as it will be past Ministerial approval that would then require a change in law. The issue with this is it has never been illegal, it has only been a policy related to the ALP.

**TNR:** Mine approvals in Australia are subject to a bilateral assessment at

both state and federal levels. Can you describe Vimy's experience in navigating this dual auditing process? In your opinion, what can Australia do to create efficiency in its approval processes, or is there merit in the current regulatory structure?

**Young:** Australia has one of the highest environmental standards for mining resources in the world, and Vimy understands the importance of a thorough assessment and approval process, especially in relation to uranium mining. Furthermore, we are proud of that fact and use it as a point of difference.

Activities associated with the mining of uranium in Australia are governed

Resources <sup>1</sup>	Tonnes Ore (in millions)	Avg Grade (ppm U <sub>3</sub> O <sub>8</sub> )	U <sub>3</sub> O <sub>8</sub> (in million lbs)
<b>Mulga Rock East</b>			
Princess			
Indicated	1.3	690	1.9
Inferred	2.5	380	2.1
Ambassador			
Indicated	19.8	720	31.5
Inferred	10.4	330	7.7
<b>Sub-total</b>	<b>34.1</b>	<b>580</b>	<b>43.2</b>
<b>Mulga Rock West</b>			
Emperor			
Inferred	30.8	440	29.8
Shogun			
Indicated	1.9	680	2.9
Inferred	1.1	390	0.9
<b>Sub-total</b>	<b>33.7</b>	<b>450</b>	<b>33.6</b>
<b>Total Resource</b>	<b>67.8</b>	<b>510</b>	<b>76.8</b>

<sup>1</sup> Cut-off grade = 150 ppm

Figure 1 Resources Summary, Mulga Rock Uranium Project  
Source: Vimy Resources

by an integrated framework of legislation and policy guidelines across a multitude of agencies and organizations at both levels of federal and state government. While the federal government has specific regulatory powers that extend to environmental assessment, transportation and export control, day-to-day regulation of mining is a state responsibility under the relevant mining act legislation.

Vimy has confidence in the approvals process from the points of view of the government and proponent, but most importantly for the WA community.

The EPA acts as the assessment body for both state and federal environmental approvals, providing an efficient and streamlined process.

**TNR:** *Vimy recently received approval from the WA EPA to begin preliminary work at its MRP. With this permission in place, and in advance of ministerial approval, what does Vimy plan to accomplish at the site?*

**Young:** Preliminary works at the MRP include an upgrade to the existing site access road and construction and development of the Kakarook North borefield to supply water to the project. Vimy intends to be “shovel ready” when the final approval from the Environment Minister is published.

The approvals for clearance of the Princess deposit, accommodation village, and airstrip are being prepared for parallel assessment, which will ensure that Vimy can hit the ground running when both the state and federal approvals are received.

**TNR:** *WA's Department of Parks and Wildlife recently nominated Vimy for a "Golden Gecko Award" for its best practice fauna camera trapping program. What does the program entail, and how can this nomination benefit Vimy and other natural resource developers in the future?*

**Young:** The innovative fauna camera trapping program, which received praise from the various regulatory agencies, represents a new “best practice” for fauna monitoring. We were able to detect the presence of the Sandhill Dunnart—a small, carnivorous marsupial—within the region using this new technique, capturing footage of the species, which was previously unknown in the area.

The success of the program has now been adopted by the Department of Parks and Wildlife for their regional fauna study of the Great Victoria Desert, and we would like to see it become an industry standard.

**TNR:** *Can you tell us about Vimy's commitment to "Mining a Cleaner Tomorrow?"*

**Young:** Actually, the Vision statement has two meanings reflecting the low carbon dioxide (CO<sub>2</sub>) in power generation and also the low environmental impact we will have during and after mining.

Your readers will obviously know the benefits of nuclear base load power in terms of LCOE [levelized cost of electricity] and CO<sub>2</sub> emissions. On a like-for-like basis, that is, stripping away subsidies and prejudice towards intermittent renewable energy, nuclear is very competitive and clean.

The MRP will be a world-class mine with low environmental impact (**Figure 2**). Our mining method uses strip mining to remove overburden from the ore zone, then dump it into the previously excavated pit. This means our rehabilitation will be in “real time” and by the time we’ve exhausted the pit, rehab will be mostly complete. We will also be using our initial Princess Pit as a tailings storage facility, thus, entombing the tails for good. It is an excellent and sustainable solution for what is typically a major tailings management issue.



**Figure 2** Drilling at the Mulga Rock Project, Western Australia  
Source: Vimy Resources



Finally, we will produce enough uranium ore concentrate to power seven reactors. This will offset approximately 50 million tonnes of CO<sub>2</sub> per year, which is approximately 10 percent of Australia's total CO<sub>2</sub> emissions.

We are truly mining a cleaner tomorrow, with our aim to become a reliable and respected uranium producer.

**TNR:** *The MRP is situated on unallocated crown land in the Great Victoria Desert of WA. Does the isolated geography of the project provide any unique advantages to its development and eventual production? Does the remote location pose any particular disadvantages?*

**Young:** Unallocated Crown Land means that, except for the government of WA, no one owns the land or mineral rights and, therefore, there are no other competing land uses to the proposed mining operation.

Currently, no Native Title claims exist on the land but we acknowledge that the Wongatha People speak for the country and we consult with them as required under the WA Heritage Act.

The MRP is 240 kilometers (149 miles) east of Kalgoorlie in the Great Victoria Desert. While its location does present some unique issues, WA mining companies have the world's best experience in remote exploration and development. Sealed and all-weather roads provide access to our site including a significant private mine road to AngloGold Ashanti's Tropicana Gold Mine, some 20 kilometers (75 miles) northeast of us.

A natural gas pipeline to the Tropicana Gold Mine is close to the project area (<100 kilometers [62 miles]), providing a ready alternative fuel source for the MRP power needs. A local source of fresh water exists on the project area, which is more than sufficient to provide for the life-of-mine requirements of the MRP. We will build a camp including an airstrip capable of landing jet aircraft for our FIFO ("fly in, fly out") workforce. Remoteness is a state of mind.

**TNR:** *How does the composition and character of the deposit, from both a geological and metallurgical standpoint, lend itself to uranium production? Are there any opportunities for by-product credit (copper, zinc, nickel, cobalt)?*

**Young:** In our corporate video, available on our website, there is a single word that sums up the MRP: "Simple" (<http://www.vimyresources.com.au>). The geology is simple, the mining method is simple, and the metallurgy is simple, and it all just works. We are using coal strip mining

techniques, then we beneficiate the ore by removing the inert silica sand using gravity techniques from sand mining. The rest of the process comprises acid leach, ion exchange, and uranium elution and precipitation using "off the shelf" technology.

We have confirmed the low risk inherent in the proposed mining methods and metallurgical flowsheet. We did this by excavating two large test pit results at Mulga Rock East (**Figure 3**). The pits allowed us to assess the digability of the overburden (free digging), the trafficability of the ore (capable of supporting the mining fleet), the geological ore-forming processes (supergene enrichment at the redox-weathering boundary). We were also able to collect 150 tonnes of uranium ore, which was used in a pilot plant to assess our proposed flowsheet.

Importantly, we were able to confirm that the highest grades of uranium occur immediately below the redox boundary. We also found that the ore zones we encountered are slightly thinner but have more contained metal than we have identified by



**Figure 3 Mulga Rock East Test Pit, January 2016**  
Source: Vimy Resources

drilling alone; that is, we think we have more uranium metal than the model predicts. This provides some upside risk and is currently being assessed with an infill drilling program at Mulga Rock East as we speak.

The metallurgical test work, comprising an appropriately sized pilot plant, has confirmed suitability of the flowsheet design from the Prefeasibility Study (PFS) announced in November 2015. We now have uranium ore concentrate, which we plan to provide to the three Western converters for assessment. The results will be used in our marketing drive.

**TNR:** *How will in-pit tailings disposal and real-time rehabilitation support Vimy's vision of "Mining a Cleaner Tomorrow?" What expectation does Vimy have for this technique, with respect to the mining economics of the MRP?*

**Young:** Vimy proposes to employ large-scale, open-pit mining methods using highly mechanized strip-mining equipment supported by conventional truck and shovel. The simple, flat geometry of the uranium-bearing units and nature of the free-digging overburden, are very well suited for the use of strip mining methods.

Strip-mining advances systematically along the long-axis of the orebody, whereby previously mined areas are backfilled with waste from the active mining area. This eliminates the need for surface waste dumps and allows mining rehabilitation to progress while mining operations are ongoing, we refer to this as "real-time

rehab." The strip-mining and real-time rehab will significantly reduce the operational and long-term residual environmental impact of the project.

As the overburden is removed, ore mining will be carried out using a conventional truck and shovel fleet. This allows for very selective ore mining, which will minimize dilution and ore loss. The carbonaceous nature of the ore, and uranium mineralization, will allow very accurate visual and radiometric grade control techniques.

*"The [Mulga Rock] geology is simple, the mining method is simple, and the metallurgy is simple. Using coal strip mining techniques, we beneficiate the ore by removing inert silica sand using gravity techniques from sand mining. The rest of the process comprises acid leach, ion exchange, and uranium elution and precipitation using "off the shelf" technology."*

—Mike Young  
CEO & Managing Director  
Vimy Resources

The Princess deposit will be mined ahead of commissioning the process plant in order to create an in-pit tailings disposal, which effectively puts the ore back where it came from, but without the uranium and by-products.

**TNR:** *The MRP is the third-largest undeveloped uranium deposit in WA. Can we expect Resource Estimates at the Princess and Ambassador deposits (Mulga Rock East) to a measured level of confidence?*

**Young:** Vimy announced on September 23, 2016, completion of a A\$6.6 million (US\$4.9 million) placement. Funds will be used primarily for uranium grade

optimization drilling to determine if the variability in contained U<sub>3</sub>O<sub>8</sub> metal discovered in bulk samples from the Ambassador test pits is consistent across the project.

Completion of the uranium grade optimization drilling is expected to deliver Measured Resources for the Ambassador deposit that are anticipated to amount to more than two years of mining operations.

**TNR:** *Does Vimy have a scalable plant development plan, and if so, how could this change the economics of the Project? Alternately, could you describe Vimy's MRP development plan and timeline, in general?*

**Young:** The current schedule for the MRP shows two work streams for which we have high confidence of achieving on time and on budget; the current Definitive Feasibility Study

(DFS) and then the construction and commissioning of the plant (**Figure 4**). We have been deliberately vague about the timing of the funding as we just don't know how long it will take to complete the financing. I like to think that this is brutally honest, thus, not misleading investors.

**TNR:** *With prevailing uranium spot market prices at 11-year lows, term market prices currently below the production costs of many producers, and extensive supply-side contraction, Vimy has, nonetheless, attracted capital investments. What has made MRP an attractive investment in light of today's uranium market?*

**Young:** MRP is an attractive deposit with long mine life and long-term source of uranium: It is the third-largest undeveloped uranium deposit in Australia, with a total resource estimate of 67.8 million tonnes at 510ppm U<sub>3</sub>O<sub>8</sub> for a contained 76.8 million pounds U<sub>3</sub>O<sub>8</sub>. The PFS expected a Life of Mine (LoM) of 17 years with an estimated total production of 50.4 million pounds U<sub>3</sub>O<sub>8</sub>, and annual production of 3 million pounds U<sub>3</sub>O<sub>8</sub>. We expect that 77 percent of the uranium mining inventory for first five years will be derived from Indicated Resources.

The project has a low cash cost and robust financials, including:

- PFS C1 operating cost for LoM of US\$28 per pound U<sub>3</sub>O<sub>8</sub>, including by-product credits;
- robust PFS pre-tax Net Present Value<sub>10</sub> of A\$431 million (US\$320.9 million), 25% Internal Rate of Return, 3.9-year payback at US\$65 per pound U<sub>3</sub>O<sub>8</sub>; and a
- PFS break even price of \$50 per pound U<sub>3</sub>O<sub>8</sub> (capital payback @ a 10% discount rate).

It involves a low-risk and low-cost mining process, with:

- simple open-pit mining operation up to a maximum depth of 74 meters;
- process plant to use low-cost acid leaching and resin-in-pulp; and
- environmental approvals and permitting are well advanced.

**TNR:** *In Vimy's experience in the capital markets, has it been easier to attract debt, equity, or royalty arrangements, or has there been equal interest?*

**Young:** Vimy has been fortunate to attract significant investment in the MRP over the last few years in the form of debt, equity, and royalty arrangements. Given the exploration and evaluation activities of the company, Vimy has had a bias towards seeking equity investments. As the MRP moves into the development phase this focus has shifted to both debt and equity funding models.

In 2014, Vimy raised A\$12 million (US\$8.9 million) in equity from

Forrest Family Investments, which is an Andrew Forrest entity within the Munderoo Group. Andrew Forrest was the founding CEO of Fortescue Metals Group, the world's fourth-largest iron ore producer.

In 2015, Vimy secured a \$30 million (US\$22.3 million) funding package from Resource Capital Funds VI (RCF), consisting of \$5 million (US\$3.7 million) in equity, a \$10 million (US\$7.4 million) royalty payment (1.15% GSR), and a \$15 million (US\$11.2 million) bridging loan.

RCF is a group of commonly managed private equity funds, established in 1998, with a mining sector specific investment mandate spanning all hard mineral commodities and geographic regions. Since inception, RCF has supported 148 mining companies, with projects located in 47 countries and across 29 commodities.

RCF has invested in several well-known uranium juniors and has a very bullish view of the uranium market.

On September 23, 2016, Vimy announced a \$6.6 million (US\$4.9 million) equity placement and conversion of the RCF bridging loan into equity at \$0.26 (US\$0.19) per share, subject to shareholder approval. We certainly appreciate RCF's support and we work closely with them to maintain that support.

**TNR:** *What are Vimy's expectations for the uranium market and how are those expectations informing the company's marketing plan?*

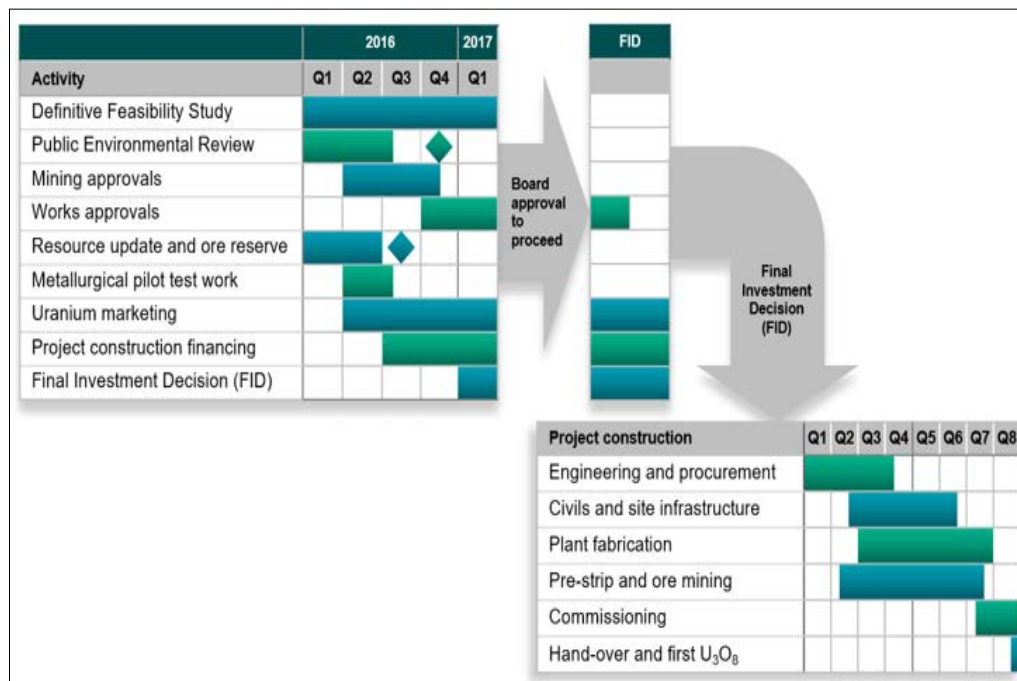


Figure 4 Mulga Rock Uranium Project, Schedule and Work Streams  
Source: Vimy Resources





Figure 5 **Mulga Rock Project Team, Western Australia**

Source: Vimy Resources

**Young:** Vimy expects a supply shortage of uranium in the mid to long term, driven by an increase in demand for nuclear energy.

This future supply shortage for uranium is expected to result in higher prices.

Australia is a reliable and secure supplier of uranium to the world market and is well placed to meet a significant proportion of the increased demand for uranium for use as an energy resource.

**TNR:** *Has the company found an appetite for offtake arrangements, pre-production contracts, or equity-sharing arrangements among banks, traders, or utilities?*

**Young:** Vimy has engaged with nuclear utilities around the world in order to be able to commence offtake discussions as project certainty develops. Obtaining final environmental approvals and the commencement of initial minor works will both result in a reduction of the risks associated with the development of the project. The completion of the DFS will be a further step in reducing risks.

With regulatory approvals obtained, minor early works commenced and the capital and operating costs associated with production established, Vimy expects to be able to move into the detailed discussions stage of offtake contract negotiations by the end of Q1 2017.

The primary off-market contract nature of uranium procurement provides an inextricable link between uranium marketing and bank funding. Cognizant of this fact, Vimy has sought early engagement with banking institutions and will continue to assess banking capabilities for advisory, arranging, and lead management of bank funding for a uranium mine. Our intention is to have our advisory bank provide a floor price at which funding is possible then engage with utilities armed with that information.

**Editor's Note:** Vimy announced on December 19, that the Western Australian Minister for Environment, the Hon. Albert Jacob MLA, has decided to approve implementation of the company's Mulga Rock Project, subject to implementation conditions.

The Minister's statement represents the State's final primary approval for the project and enables Vimy to commence work once the appropriate secondary approvals (licenses and permits) are granted and once Federal approval is achieved; Federal approval of the project is expected before March 2017, according to Vimy.



# International Energy Agency Examines Global Energy Trends

The International Energy Agency (IEA) released its "World Energy Outlook 2016" (WEO 2016) in November, forecasting energy supply and demand through 2040. The outlook examines energy trends among the 24 signatories of the Convention on the Organization for Economic Co-operation and Development (OECD) as well as non-OECD countries.

Forecasts in the report are centered around multiple scenarios, each with specific economic and political constraints. The New Policies Scenario is the report's central scenario and incorporates Nationally Determined Contributions submitted at the COP21 meetings in Paris last year, while the Current Policies Scenario assumes policies enacted as of mid 2016. Three Decarbonization scenarios feature in the report: the 450 Scenario takes into account policies that aim to limit the rise in global average temperature to +2 degree Celsius (C), while two additional scenarios provide insight into a pathway that would achieve reductions of "well below 2 degree C" and to 1.5 degree C. The 2016 report also includes a comprehensive review of the nexus between energy and water.

## Developments and Trends

The report notes that growth in energy-related CO<sub>2</sub> emissions flatlined in 2015, marking a significant achievement for energy efficiency measures and the wide adoption of renewables. Recognizing the fundamental shift this outcome represents, the report's central theme is that of transformative change in the energy sector. Scenarios presented in this year's report integrate various energy-sector dimensions, including trends in investment, energy security, and energy access.

While fossil-fuel prices have declined sharply in recent years, fossil-fuel subsidy reform has also gained momentum; at the same time, investment dollars have migrated further toward renewables. Global energy demand is expected to rise 30 percent in the report's main scenario, and much of this growth is

seen in the renewables sector. Expansion in nuclear power output is largely driven by new reactor build projects in China.

The report points out that energy demand is set to decline in OECD countries and increase in India, Southeast Asia, and parts of Africa, signaling a shift in the geography of energy consumption; the IEA also predicts progress in energy accessibility, positing that the 1.2 billion people without power today will decline to 500 million by 2040.

Commitments set forth at the 2015 United Nations Climate Change Conference (COP 21), held in Paris last year, have been integrated into the study's main scenario, which signals some confidence that the pledges signed by nations at COP 21 will be implemented. Noting that while many countries already have policies in place that will slow projected rises in greenhouse gas emissions to levels set

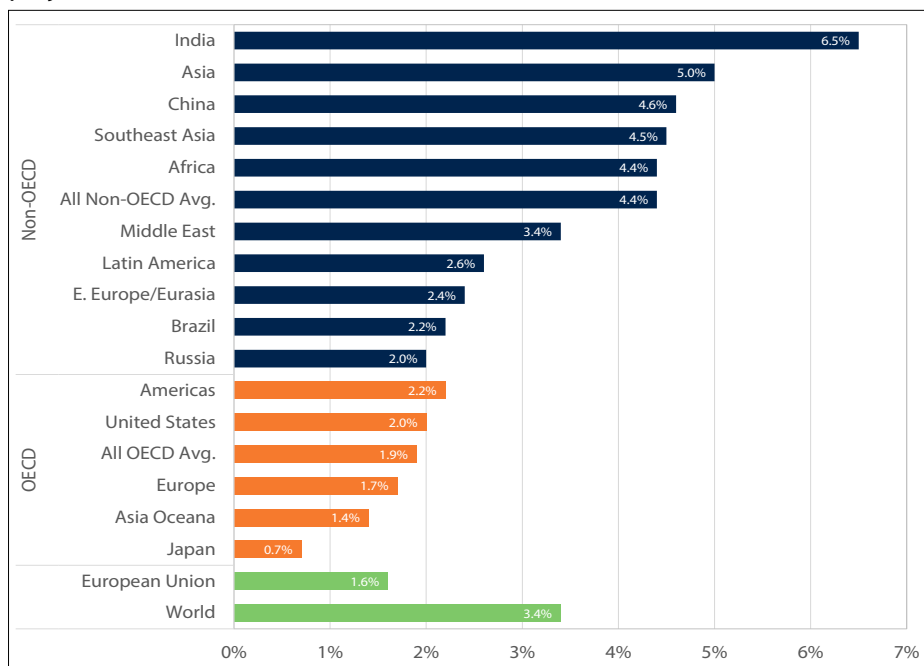


Figure 1 Forecast GDP Growth Among OECD & Non-OECD Countries & Regions, 2014 – 2040

Source: International Energy Agency



forth in their commitments, the report states these policies are “not nearly enough” to limit emissions to less than 2 degrees C. Furthermore, the report points to “frontlines for additional emissions reductions” in the energy sector, with efficiency, increased use of renewables, and nuclear power playing key roles.

### Economics Continue to Drive Increases in Energy Demand

Although energy savings are emerging due to a fundamental shift in the energy-economy dynamic among OECD nations, economic growth remains the primary driver of increases in energy demand in many countries. In total, the report states that for every one percent rise in non-OECD Gross Domestic Product (GDP) from 2000 through 2014, energy demand increased 0.7 percent.

Looking to the future, the IEA projects a worldwide compound average annual growth rate of 3.4 percent in GDP through 2040, in each of its

scenarios (**Figure 1**). The result is a global economy that is over twice as large as today. For non-OECD nations, the growth rate is slightly higher at 4.4 percent annually, down from 6 percent.

The services sector, which is the least-energy intensive of all major economic categories, accounts for 62 percent of GDP and is expected to rise to 64 percent by 2040. This is especially notable in China, where industrial contribution to GDP is expected to fall from 42 percent to 34 percent by 2040. India is expected to lead all countries in terms of economic growth, with an average annual growth rate of 6.5 percent, due largely to significant expansion of its manufacturing sector.

### Global Energy Demand and Investment Forecast

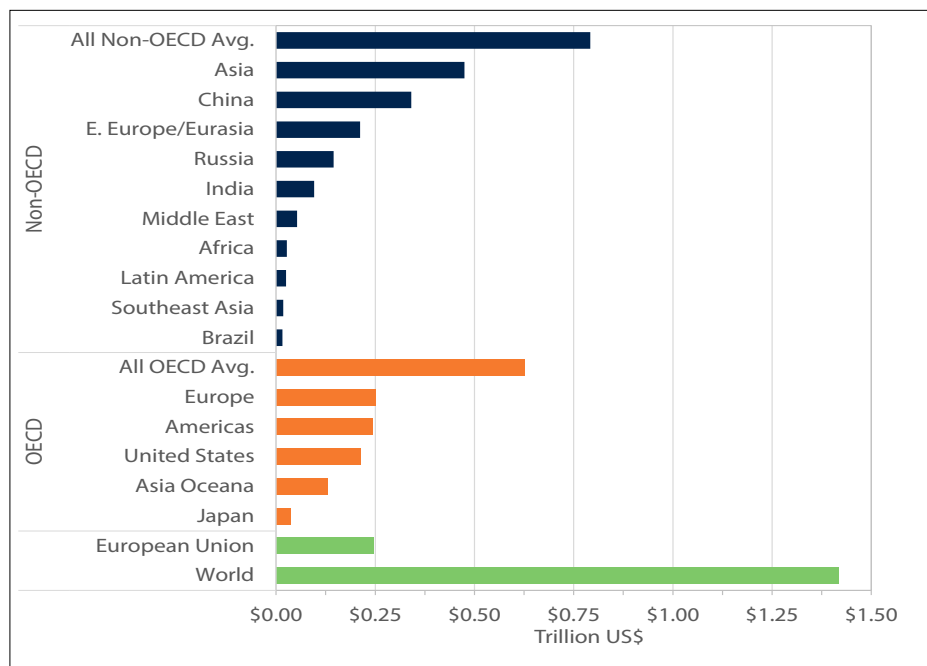
Total primary energy demand worldwide is expected to grow 31 percent by 2040, in the WEO New Policies Scenario, due mainly to growth in China, India, and other

developing Asian nations. Electricity generation is forecast to grow on a compound annual basis at 1.9 percent worldwide by 2040, with increases in generation by fuel type largely defined by growth in renewable energy types. Demand for nuclear generation is expected to increase at a compound annual growth rate of 2.3 percent.

Installed generating capacity is expected to grow from 6,400 GWe in 2015, to 11,200 GWe in 2040. Total nuclear power generating capacity is forecast to increase 54 percent to 606 GWe, though nuclear power’s market share marginally declines from 6.5 percent to 5.4 percent.

In the New Policies Scenario, investment in the power sector is expected to total US\$19.2 trillion over the period, including investment in fossil fuels (14%), transmission and distribution (42%), and nuclear (7%). Investment is related to development, and developed nations with low forecast demand growth account for only one-quarter of the expected outlay, according to the report. Notably, and including infrastructure spending, renewables account for around 60 percent of expected investment through 2040.

Of the investment dollars dedicated to new power generation, 37 percent (\$7.1 trillion) is aimed at renewable energy technologies, and those technologies will, in turn, account for nearly one-half of all growth in generation over the period. Seven percent (\$1.4 trillion) of investment dollars is expected to be directed toward nuclear, with 56 percent of this total dedicated to programs in non-OECD countries (**Figure 2**).



**Figure 2 Forecast Investment in Nuclear Power Among OECD & Non-OECD Countries & Regions, 2015 – 2040**  
Source: International Energy Agency

Cumulative nuclear power plant capacity retirements in the New Policies scenario total 148 GWe, accounting for six percent of all capacity reductions through 2040; balancing this reduction is a cumulative total of 351 GWe of new generation, accounting for five percent of all new capacity additions and a net gain of just over 200 GWe in new nuclear generating capacity.

On a percentage basis, renewables represent the largest increase in electricity generation for both OECD and non-OECD groups (**Figure 3**).

The largest increase in nuclear power's contribution to electricity generation is among non-OECD countries, where nuclear power is expected to generate 2,217 TWh in 2040—a 300 percent increase over 2014's contribution of 555 TWh (a compound annual growth rate [CAGR] of 5.5%); among OECD nations, nuclear power is expected to generate 2,315 TWh in 2040—a 17 percent increase over the 1,981 TWh generated in 2014 (a CAGR of just 0.6%). Globally, electricity generated by nuclear power is forecast to increase 79 percent from 2,535 TWh in 2014 to 4,532 TWh in 2040.

In terms of installed electrical capacity, renewables are expected to continue making large gains against fossil fuels, while decreases in installed nuclear capacity result in lower overall market share for nuclear power in OECD nations (**Figure 4**). OECD countries are expected to reduce installed nuclear capacity from 315 GWe in 2014, to 307 GWe in 2040 (a CAGR of -0.1%); the share of total capacity allocated to nuclear power falls from 11 to 8 percent in that same period. Among the non-OECD group, installed nuclear capacity is forecast to rise from 83 GWe in 2014, to 300 GWe in 2040 (a CAGR of 5.1%), bringing nuclear power's share of the energy mix from 3 to 4 percent. This difference in capacity forecasts highlights non-OECD nations as growth leaders in nuclear power development in the coming decades. Globally, installed nuclear capacity is expected to increase 52 percent from 398 GWe to 604 GWe by 2040.

Further, the WEO notes that 19 new nuclear power plants commenced operation between 2015 and late 2016, while construction began on nine plants (with an estimated total capacity of 64 GWe) in that time, one-third of which are in China. The WEO's New Policies Scenario predicts

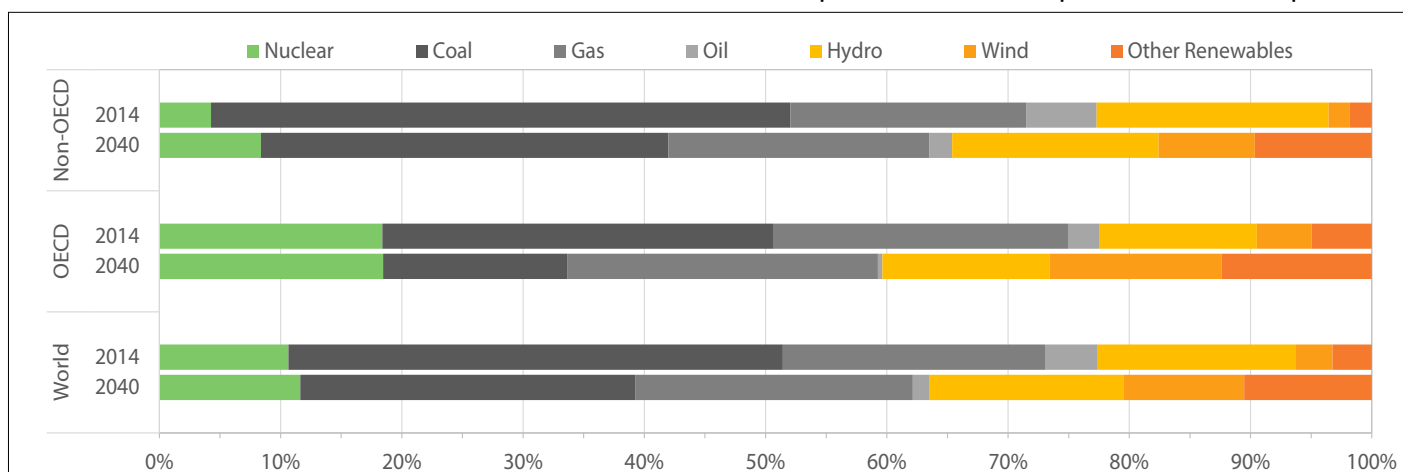
that while nuclear power capacity in the USA will increase slightly, a more significant decline is seen within the European Union (EU).

### USA

Electricity demand has slowed in the USA in recent years while the country's energy mix has shifted away from coal toward natural gas and renewables. Central to the country's forward-looking energy strategy is the Clean Power Plan, an all-of-the-above policy aimed at reducing carbon emissions. The plan specifically identifies nuclear power as a contributor to this goal. The WEO's New Policies Scenario accounts for this policy, among others, and predicts a six percent increase in installed nuclear capacity between 2014 and 2040. Nuclear power's share of the energy mix in the USA is expected to decrease slightly to eight percent, equaling 18 percent of generation by 2040.

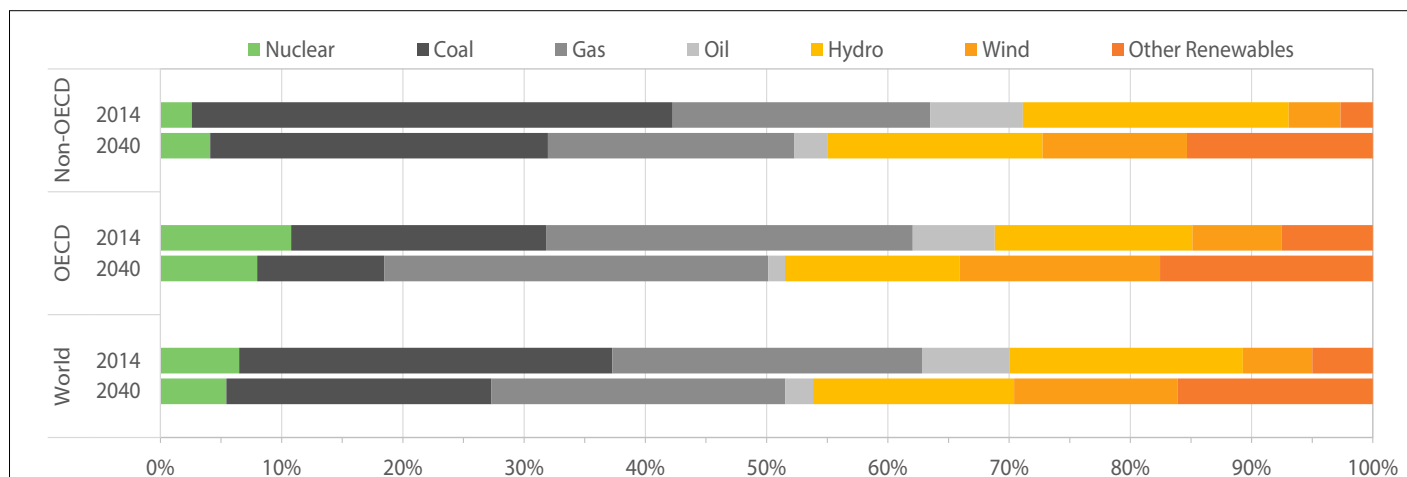
### European Union

Electricity demand has also declined in the EU, where energy policy is being steered by goals related to reductions in greenhouse gas emissions. In this region, nuclear power's share of generation is expected to decrease from 13 percent in 2014, to 8 percent



**Figure 3 Forecast Share of Electricity Generation (TWh) by Fuel Type Among OECD & Non-OECD Countries & Regions, 2014 v. 2040**

Source: International Energy Agency



**Figure 4 Forecast Share of Electrical Capacity by Fuel Type Among OECD & Non-OECD Countries & Regions, 2014 v. 2040**

Source: International Energy Agency

in 2040, due to a decline in installed capacity from 129 GWe in 2013, to 102 GWe by 2040. Nuclear power's share of generation is forecast to decline from 28 percent to 21 percent over the same time frame, which is primarily due to the completion of Germany's nuclear phaseout program by 2022.

### China

China, already the world's largest power producer, becomes the global leader in electricity generated by variable renewables, with 38 percent of the country's generation mix by 2040. Forecasted growth in energy demand (2.4% per year over the period, one-half the rate of expected GDP growth) is predicated on a fundamental shift away from industrial production and toward the less energy-intensive services sector.

The *WEO 2016* forecasts China's installed nuclear capacity to grow from 20 GWe in 2014, to 155 GWe by 2040 (a CAGR of 8.1%). Nuclear power's share of the energy mix in China is expected to be over 5 percent by 2040. With this contribution, over one-half of the nation's electricity will be supplied by low-carbon sources by 2040—a goal that is important to China as it continues to face growing air pollution concerns.

### India

In 2014, India became the world's third-largest power producer, although structural issues continue to challenge the country's energy economy. India's power demand is expected to triple by 2040, while electricity demand is forecast to rise 174 percent from 30 Mtoe (million tonnes of oil equivalent) in 2014, to 80 Mtoe by 2040. Meeting that demand is a capacity increase of over 300 percent from 295 GWe in 2014, to 1,102 GWe in 2040. Nuclear power is expected to account for nearly four percent (39 GWe) of India's installed capacity by 2040.

### In Conclusion ...

Under the WEO's New Policies Scenario, renewables see the greatest gains, and the most ambitious carbon-reduction goals will require a great re-allocation of investment capital. Nuclear power can play a key role in the decarbonization of the global energy mix, however, the prospects for nuclear power appear to be related, in general, to location. This may ultimately speak to the political acceptability of nuclear power, and the varied capacity forecasts in the *WEO 2016* indicate a wide spectrum.

In the various *WEO 2016* scenarios, nuclear power either expands, contracts, or is phased out entirely; this disparity is especially evident between OECD and non-OECD groups. Further, overall growth in nuclear power is concentrated in comparatively smaller markets, the obvious exception being China, which the report predicts will increase its installed nuclear capacity nearly eight-fold in the next 25 years.

Still, global electricity demand is expected to increase at a compound annual growth rate of 1.4 percent between 2014 and 2040, growing from 343 to 491 Mtoe over the period.

With nuclear power accounting for 12 percent of generation by 2040, under the New Policies Scenario, installed capacity must grow from 398 GWe in 2014, to 606 GWe. Keeping pace with nuclear power's modest share of the global energy mix will require substantial increases in installed capacity—52 percent more than is available today.

**Editor's Note:** The IEA *WEO 2015* is available for purchase at

<http://www.worldenergyoutlook.org/>



# Calendar of Events

## 2016–2017

### Jan 24

#### Nuclear Fuel Supply Forum

The W Hotel  
Washington, DC, USA  
Sponsor: Nuclear Energy Institute  
Contact: Denise Bell  
Phone: +1-202-739-8039  
Fax: +1-202-785-4019  
Email: [registrar@nei.org](mailto:registrar@nei.org)  
<http://www.nei.org/Conferences>

### Mar 1-2

#### 4<sup>th</sup> Nuclear Decommissioning & Waste Management Summit

London, UK  
Organized by: Active Communications International  
Contact: Claire Taylor-Payne  
Phone: +44-0-20-3141-0601  
Email: [claire@acieu.net](mailto:claire@acieu.net)  
<http://www.wplgroup.com/aci/event/nuclear-decommissioning-waste-management-summit/>

### Mar 5-8

#### PDAC 2017

Metro Toronto Convention Center  
Toronto, Ontario, Canada  
Organized by: Prospectors & Developers Association of Canada  
Phone: +1-416-362-1969  
Fax: +1-416-362-0101  
Email: [info@pdac.ca](mailto:info@pdac.ca)  
<http://www.pdac.ca/convention>

### Mar 5-9

#### WM Symposia 2017

Phoenix Convention Center  
Phoenix, Arizona, USA  
Contact: Selly Soetarso  
Conference Registration  
Phone: +1-480-557-0263  
Fax: +1-520-829-3550  
Email: [selly@wmarizona.org](mailto:selly@wmarizona.org)  
<http://www.wmsym.org/>

### Mar 7-8

#### 8<sup>th</sup> Annual Nuclear Power Asia

Kuala Lumpur, Malaysia  
Contact: Clarion Events  
Phone: +65-6590-3970  
Email: [info@clarionevents.asia](mailto:info@clarionevents.asia)  
<http://www.nuclearpowerasia.com>

### Apr 24-28

#### 2017 International Conference on Advances in Nuclear Power Plants (ICAPP2017)

Fukui & Kyoto, Japan  
Contact: ICAPP2017 Registration Desk  
c/o Japan Convention Services, Inc.  
Email: [icapp2017registrar@convention.co.jp](mailto:icapp2017registrar@convention.co.jp)  
<http://icapp2017.org/>

### Apr 25-27

#### World Nuclear Fuel Cycle Conference

Delta Toronto Hotel  
Toronto, Canada  
Co-organizers: Nuclear Energy Institute & World Nuclear Association  
Contact: Michael Jordan, NEI  
Phone: +1-202-739-8000  
Fax: +1-202-785-4019  
Email: [mjj@nei.org](mailto:mjj@nei.org)  
-or-  
Sharan Gallagher, WNA  
Phone: +44-0-20-7451-1520  
Fax: +44-0-20-7839-1501  
Email: [events@world-nuclear.org](mailto:events@world-nuclear.org)  
<http://www.wnfc.info>

### Apr 25-28

#### 2017 Nuclear Nonoperating Owners' Group Conference

Renaissance Phoenix Downtown Hotel  
Phoenix, Arizona, USA  
Hosts: Salt River Project & El Paso Electric  
Contact: Steve Ruppel,  
Steering Committee Chair  
Phone: +1-407-355-7767  
<http://www.nnog.com/>

### May 22-24

#### 64<sup>th</sup> Annual Industry Conference & Supplier Expo:

**Nuclear Energy Assembly**  
Westin Kierland  
Scottsdale, Arizona, USA  
Sponsor: Nuclear Energy Institute  
Contact: Denise Bell  
Phone: +1-202-739-8039  
Fax: +1-202-785-4019  
Email: [registrar@nei.org](mailto:registrar@nei.org)  
<http://www.nei.org/Conferences>

### Jun 4-6

#### 2017 WNFM Annual Meeting

Marriott Budapest  
Budapest, Hungary  
Sponsor: World Nuclear Fuel Market  
Contact: WNFM/NAC International  
Phone: +1-678-328-1344  
Fax: +1-678-328-1544  
<http://wnfm.com/>

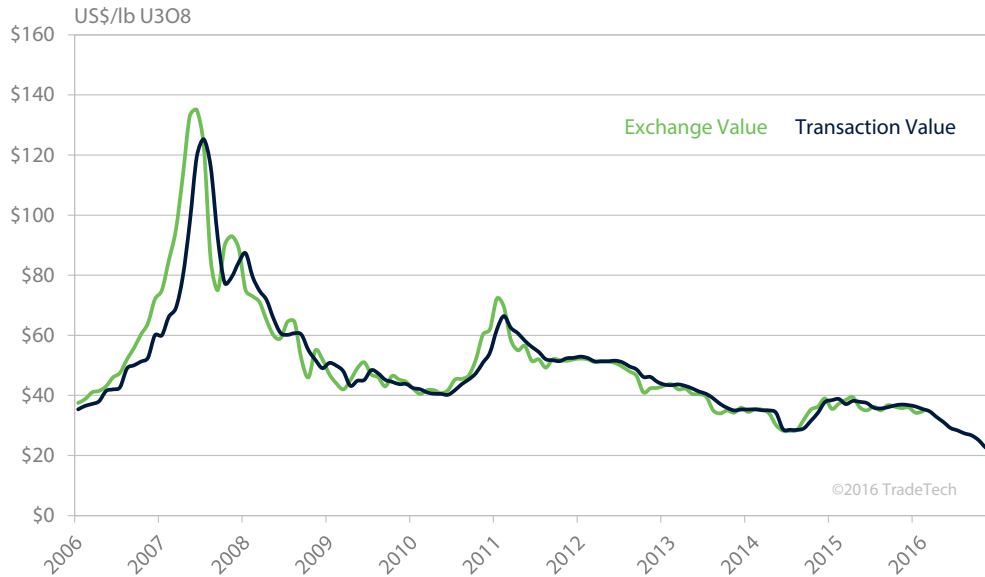
### Jun 11-15

#### 2017 ANS Annual Meeting

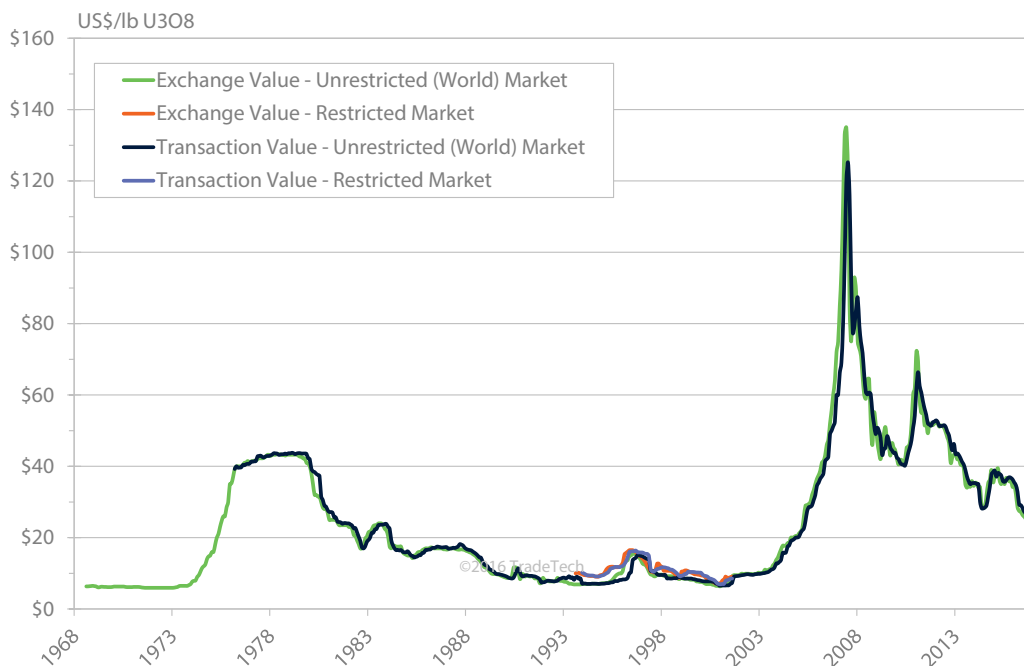
Hyatt Regency San Francisco  
San Francisco, California, USA  
Sponsor: American Nuclear Society  
Phone: +1-800-323-3044  
Fax: +1-708-352-0499  
Email: <http://www.ans.org/contact/form.php?r=meetings>  
[http://www.ans.org/meetings/c\\_1](http://www.ans.org/meetings/c_1)

# Historical Exchange & Transaction Values

Exchange Value & Transaction Value  
2005-2016



Exchange Value & Transaction Value  
1968-2016





# Historical Market Values & Indicators<sup>1</sup>

## Exchange Value<sup>2</sup>

Determined as of the last day of the month indicated (US\$ / lb U<sub>3</sub>O<sub>8</sub>)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2004	15.60	16.75	17.75	17.75	17.75	18.50	18.50	20.00	20.00	20.20	20.50	20.50
2005	21.20	21.75	22.60	26.00	29.00	29.00	29.50	30.00	32.00	33.25	35.00	36.50
2006	37.50	38.75	41.00	41.50	43.00	46.00	47.50	52.00	55.75	60.25	64.00	72.00
2007	75.00	85.00	95.00	113.00	133.00	135.00	123.00	85.00	75.00	90.00	93.00	89.00
2008	75.00	73.00	71.00	65.00	60.00	59.00	64.50	64.50	52.00	46.00	55.00	52.00
2009	47.00	44.00	42.00	45.00	49.00	51.00	47.00	46.00	43.00	46.50	45.25	44.50
2010	42.25	40.50	41.75	41.75	40.75	41.75	45.25	45.50	46.75	52.00	60.25	62.00
2011	72.25	69.50	58.50	55.00	56.50	51.50	52.00	49.25	52.00	51.75	51.50	52.00
2012	52.25	52.00	51.10	51.50	51.25	50.75	49.50	48.00	46.50	41.00	42.50	43.25
2013	43.75	42.00	42.25	40.50	40.40	39.55	35.00	34.00	35.00	34.25	35.90	34.50
2014	35.40	35.25	34.00	30.10	28.25	28.20	28.50	32.00	35.30	36.25	39.00	35.50
2015	37.25	38.50	39.40	36.00	35.00	36.25	35.00	36.75	36.25	35.75	36.00	34.20
2016	34.65	32.15	28.25	27.50	27.25	26.40	25.90	25.25	22.25	18.75	17.75	

## Transaction Value<sup>3</sup>

Determined as of the last day of the month indicated (US\$ / lb U<sub>3</sub>O<sub>8</sub>)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2004	13.25	13.75	15.75	15.75	15.85	17.50	17.85	19.05	19.30	19.60	20.05	20.05
2005	20.30	21.35	22.05	22.60	24.75	27.45	28.55	28.65	29.10	30.55	31.95	34.55
2006	35.35	36.50	37.15	38.05	41.45	42.00	42.70	48.95	50.00	51.25	52.50	60.00
2007	60.00	66.20	69.05	79.55	97.55	119.45	125.25	116.00	92.55	77.45	79.40	84.20
2008	87.30	79.50	74.80	71.75	65.55	60.80	60.15	60.70	60.30	55.05	51.80	49.05
2009	50.80	49.90	48.00	43.20	44.85	45.15	48.40	47.30	45.20	44.50	43.75	43.80
2010	42.45	42.05	41.00	40.55	40.50	40.20	41.75	43.80	45.35	47.40	50.90	54.20
2011	61.90	66.40	62.50	60.70	58.20	56.15	54.45	52.05	51.70	51.40	52.35	52.50
2012	52.90	52.45	51.35	51.30	51.35	51.55	51.00	49.65	48.65	46.15	44.50	43.60
2013	43.40	43.65	43.15	42.30	41.25	40.50	39.00	37.15	35.85	35.00	35.30	35.30
2014	35.35	35.05	35.00	34.20	28.75	28.55	28.50	29.05	31.55	34.20	37.75	38.40
2015	38.80	37.10	38.15	37.85	37.45	35.90	35.65	36.05	36.65	36.95	36.75	36.30
2016	35.45	34.70	32.80	31.10	29.15	28.35	27.35	26.70	25.15	22.70	21.05	

1 Complete definitions, including derivations and comments, can be found on page 4.

2 The Exchange Value is TradeTech's judgement of the price at which spot and near-term transactions for significant quantities of natural uranium concentrates could be concluded as of the last day of the month.

3 The Transaction Value is a weighted average price of recent natural uranium sales transactions. The calculation is based on prices paid in:  
 a) transactions closed within the previous three-month period for which delivery is scheduled within one year of the transaction date;  
 b) at least 10 transactions; and  
 c) transactions involving a sum total of at least 2 million pounds equivalent U<sub>3</sub>O<sub>8</sub>.

## UF<sub>6</sub> Value<sup>4</sup>

Determined as of the last day of the month indicated (US\$ / kgU as UF<sub>6</sub>)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2004	48.50	51.50	53.50	53.50	53.75	56.10	56.10	61.00	61.00	62.00	63.00	63.00
2005	67.00	68.00	70.00	80.00	88.00	87.25	87.25	87.25	94.75	98.25	103.00	106.00
2006	108.00	112.00	119.00	120.00	124.00	132.00	136.00	148.00	157.00	169.00	179.00	199.00
2007	199.00	230.00	260.00	306.00	358.00	358.00	325.00	225.00	207.00	245.00	240.00	241.00
2008	204.00	199.00	195.00	178.00	166.00	163.00	178.00	178.00	145.00	125.00	150.00	140.00
2009	131.00	124.00	121.00	126.00	135.00	137.00	128.00	126.00	117.00	127.00	123.00	120.00
2010	118.00	110.00	115.00	114.00	112.00	116.00	129.00	131.00	135.00	149.00	170.00	173.00
2011	200.00	195.00	164.50	155.75	157.40	145.50	145.50	139.00	144.00	143.50	141.25	143.25
2012	141.50	141.00	137.00	139.00	139.00	139.00	136.00	133.00	130.00	117.00	120.50	123.50
2013	124.75	120.00	120.75	116.00	115.00	113.50	100.00	98.00	100.00	98.50	102.50	98.65
2014	100.75	100.00	96.00	86.50	81.50	80.75	81.50	90.00	99.00	102.25	109.50	100.50
2015	105.25	108.30	109.25	101.75	98.75	101.50	98.50	102.50	100.00	100.00	100.00	98.50
2016	97.00	91.00	81.00	78.25	77.25	75.50	73.50	72.00	64.25	55.00	53.00	

## Loan Rate<sup>5</sup>

Determined as of the last day of the month indicated (percent / annum)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2004	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
2005	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
2006	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	7.50	7.50	7.50
2007	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50
2008	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50
2009	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50
2010	6.00	4.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	2.50	2.00	2.00
2011	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	1.75	1.75	1.75
2012	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
2013	1.75	1.75	1.75	1.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2014	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2015	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2016	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

<sup>4</sup> The UF<sub>6</sub> Value is TradeTech's judgement of the price at which spot and near-term transactions for significant quantities of natural uranium hexafluoride could be concluded as of the last day of the month.

<sup>5</sup> The Loan Rate is TradeTech's judgement of the annual interest rate at which uranium loans could be concluded as of the last day of the month.

## Conversion Value<sup>6</sup>

Determined as of the last day of the month indicated (US\$ / kgU as UF<sub>6</sub>)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2004 - NA <sup>7</sup>	6.80	7.00	7.00	7.00	7.25	7.75	7.75	9.00	9.00	9.00	9.00	9.00
2004 - E <sup>8</sup>	7.50	8.00	8.00	8.00	8.50	9.00	9.00	10.00	10.00	10.00	10.00	10.00
2005 - NA	11.00	12.00	12.00	12.00	12.00	11.50	11.50	11.50	11.50	11.50	11.50	11.50
2005 - E	12.00	12.00	12.00	12.00	12.00	11.50	11.50	11.50	11.50	11.50	11.50	11.50
2006 - NA	11.00	11.50	11.50	11.75	11.75	11.75	11.75	11.75	11.75	11.75	11.75	11.75
2006 - E	11.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.25	12.25
2007 - NA	11.75	11.75	11.75	11.75	11.75	11.75	11.75	10.75	10.75	10.75	8.00	8.00
2007 - E	11.15	11.15	11.15	11.15	11.15	11.15	11.15	11.15	11.15	11.15	10.00	10.00
2008 - NA	8.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	8.00	8.50	8.50
2008 - E	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	9.00	9.50	9.50
2009 - NA	8.50	8.50	8.50	8.50	8.50	7.50	6.50	6.50	6.25	6.00	5.50	5.50
2009 - E	9.50	9.50	9.50	9.50	9.50	8.50	8.00	8.00	8.00	8.00	8.00	8.00
2010 - NA	5.50	5.00	5.50	5.50	5.50	7.00	10.50	13.00	13.00	13.00	12.50	12.50
2010 - E	8.00	7.50	7.50	7.50	7.50	8.00	11.00	12.00	12.00	12.00	12.00	12.00
2011 - NA	13.00	13.00	12.00	12.00	11.00	11.00	10.50	10.00	9.50	9.00	8.50	7.50
2011 - E	12.50	13.00	12.00	12.00	11.00	11.00	10.50	10.00	9.50	9.00	8.50	8.00
2012 - NA	7.00	7.00	6.75	6.75	6.75	6.75	7.25	9.00	9.50	10.50	10.50	10.50
2012 - E	7.50	7.50	7.00	7.00	7.00	7.00	8.00	9.25	10.00	11.00	11.00	11.00
2013 - NA	10.50	10.50	10.50	10.50	10.00	10.00	9.25	9.00	9.00	9.00	8.50	8.50
2013 - E	11.00	11.00	11.00	11.00	10.50	10.50	9.75	9.50	9.50	9.50	9.00	9.00
2014 - NA	8.25	8.25	7.50	7.50	7.50	7.25	7.25	7.25	7.25	7.60	7.60	8.50
2014 - E	8.75	8.75	8.00	8.00	7.75	7.50	7.50	7.50	7.50	8.00	8.00	9.00
2015 - NA	8.50	7.75	7.50	7.50	7.50	7.50	7.50	7.00	7.00	7.00	7.00	7.00
2015 - E	9.00	8.50	8.00	8.00	8.00	8.00	8.00	7.50	7.50	7.50	7.50	7.50
2016 - NA	7.00	7.00	7.00	7.00	7.00	7.00	6.50	6.00	6.00	6.00	6.00	6.00
2016 - E	7.50	7.50	7.50	7.50	7.50	7.50	7.00	6.50	6.50	6.50	6.50	6.50

<sup>6</sup> The Conversion Value is TradeTech's judgement of the price at which spot and near-term transactions for significant quantities of conversion services could be concluded as of the last day of the month.

<sup>7</sup> North American delivery

<sup>8</sup> European delivery

## SWU Value<sup>9</sup>

Determined as of the last day of the month indicated (US\$ / SWU)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2004 - U <sup>10,12</sup>	88	88	88	88	88	88	88	88	88	88	88	88
2004 - R <sup>11,12</sup>	110	110	110	110	110	110	111	111	111	111	111	111
2005 - U	88	88	88	88	88	90	90	90	90	90	90	90
2005 - R	113	113	113	113	113	113	113	113	113	113	113	113
2006 - U	90	105	105	105	107	107	110	115	117	120	124	126
2006 - R	118	120	122	124	125	125	128	129	131	134	135	135
2007 - U	128	133	133	133	133	135	137	137	138	141	141	141
2007 - R	136	140	140	140	140	140	140	140	141	143	143	143
2008 - U	141	143	143	145	147	149	153	155	156	157	158	158
2008 - R	143	145	145	147	149	151	156	158	159	159	160	160
2009 - U	158	159	160	161	162	162	162	162	162	162	162	162
2009 - R	160	162	163	164	165	165	165	165	165	165	165	165
2010 - U	165	162	160	158	153	153	153	153	153	155	155	155
2010 - R	165	162	160	158	153	153	153	153	153	155	155	155
2011	155	155	155	153	153	153	150	148	146	144	140	140
2012	140	139	138	138	134	134	125	125	125	120	120	120
2013	120	117	115	112	110	110	110	105	101	100	100	99
2014	98	98	96	96	96	93	90	89	89	89	89	88
2015	88	82	79	75	72	70	68	66	62	61	61	61
2016	61	60	60	59	58	58	57	55	52	49	48	

<sup>9</sup> The SWU Value is TradeTech's judgement of the price at which spot and near-term transactions for significant quantities of enrichment services could be concluded as of the last day of the month.

<sup>10</sup> Unrestricted

<sup>11</sup> Restricted

<sup>12</sup> The designation of Unrestricted/Restricted Market Values for SWU products was dropped in Review No. 510, since the Unrestricted Market distinction had become irrelevant with the revision to the US-Russian Suspension Agreement, which allows Russia to provide up to 20 percent of US utility enrichment requirements in 2014-2020, at which time the Suspension Agreement is scheduled to be terminated.

## Mid-Term/Long-Term Price Indicators<sup>13</sup>

Determined as of the last day of the month indicated

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>2014</b>												
<b>Mid-Term U<sub>3</sub>O<sub>8</sub> (\$ / lb U<sub>3</sub>O<sub>8</sub>)</b>	38.50	37.75	37.00	33.00	31.00	31.00	31.00	34.50	37.75	38.75	42.00	39.00
<b>Long-Term U<sub>3</sub>O<sub>8</sub> (\$ / lb U<sub>3</sub>O<sub>8</sub>)</b>	50.00	50.00	45.00	45.00	45.00	44.00	44.00	44.00	45.00	45.00	50.00	50.00
<b>Long-Term Conversion (\$ / kgU as UF<sub>6</sub>)</b>												
<i>N.American</i>	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
<i>European</i>	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00
<b>Long-Term SWU (\$ / SWU)</b>	114	102	99	99	99	95	92	90	90	90	90	90
<b>2015</b>												
<b>Mid-Term U<sub>3</sub>O<sub>8</sub> (\$ / lb U<sub>3</sub>O<sub>8</sub>)</b>	41.25	42.50	43.50	40.25	39.00	39.50	38.25	40.00	39.50	38.75	38.50	36.00
<b>Long-Term U<sub>3</sub>O<sub>8</sub> (\$ / lb U<sub>3</sub>O<sub>8</sub>)</b>	50.00	50.00	50.00	49.00	46.00	46.00	45.00	44.00	44.00	44.00	44.00	44.00
<b>Long-Term Conversion (\$ / kgU as UF<sub>6</sub>)</b>												
<i>N.American</i>	16.00	16.00	16.00	16.00	16.00	16.00	16.00	15.00	15.00	14.00	14.00	14.00
<i>European</i>	17.00	17.00	17.00	17.00	17.00	17.00	17.00	16.50	16.50	15.00	15.00	15.00
<b>Mid-Term SWU (\$ / SWU)</b>	—	—	—	—	—	—	—	—	—	—	—	65
<b>Long-Term SWU (\$ / SWU)</b>	90	90	87	85	82	82	82	80	75	72	69	72
<b>2016</b>												
<b>Mid-Term U<sub>3</sub>O<sub>8</sub> (\$ / lb U<sub>3</sub>O<sub>8</sub>)</b>	36.50	33.90	29.90	29.25	29.00	28.15	27.40	26.70	23.70	20.50	19.00	
<b>Long-Term U<sub>3</sub>O<sub>8</sub> (\$ / lb U<sub>3</sub>O<sub>8</sub>)</b>	44.00	44.00	43.00	42.00	41.00	40.00	38.00	38.00	37.00	35.00	34.00	
<b>Long-Term Conversion (\$ / kgU as UF<sub>6</sub>)</b>												
<i>N.American</i>	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	13.00	
<i>European</i>	14.00	14.00	14.00	14.00	14.00	14.00	14.00	13.00	13.00	12.50	13.00	
<b>Mid-Term SWU (\$ / SWU)</b>	65	65	65	64	64	62	59	57	56	53	50	
<b>Long-Term SWU (\$ / SWU)</b>	70	70	70	70	70	69	67	63	62	59	55	

<sup>13</sup> The Mid-Term Price Indicator for U<sub>3</sub>O<sub>8</sub> is TradeTech's judgement of the base price at which transactions for mid-term or intermediate delivery of natural uranium concentrates could be concluded as of the last day of the month, for transactions in which the price at the time of delivery would be an escalation of the base price from a previous point in time. The Long-Term Price Indicators for U<sub>3</sub>O<sub>8</sub>, Conversion, or SWU are TradeTech's judgement of the base price at which transactions for long-term delivery of that product or service could be concluded as of the last day of the month, for transactions in which the price at the time of delivery would be an escalation of the base price from a previous point in time.



# Australia

Year	Period	Consumer Price Index <sup>1</sup> (1989/1990 = 100) (2011/2012=100)	Producer Price Index Final Commodities <sup>2</sup> (1998/1999 = 100)	Average Weekly Ordinary Time Earnings Adult Australia <sup>3</sup> (Australian Dollars)	Wage Price Index — Australia <sup>4</sup> (2003-04 = 100)
2002	Avg	138.1	110.0	868.44	94.0
2003	Avg	141.9	111.1	923.25	98.3
2004	Avg	145.2	114.1	958.43	101.8
2005	Avg	149.1	118.0	1,007.90	105.9
2006	Avg	154.4	122.6	1,047.28	110.2
2007	Avg	158.0	125.8	1,093.78	114.7
2008	Avg	164.8	132.5	1,141.38	119.5
2009	Avg	167.9	134.0	1,201.45	112.6
2010	Avg	172.6	136.0	1,257.83	105.0
2011	Avg	178.5	140.1	1,312.40	109.0
2012	Avg	180.0/ 101.9 <sup>5</sup>	121.0	1,373.30	112.9
2013	Avg	103.5	102.2	1,430.20	116.1
2014	Avg	106.1	104.0	1,465.10	119.1
2015	Avg	107.7	105.4	1,491.90	121.7
Jan	2015	—	—	—	—
Feb	2015	—	—	—	—
Mar	2015	106.8	104.6	—	120.7
Apr	2015	—	—	—	—
May	2015	—	—	1,484.50	—
Jun	2015	107.5	104.9	—	121.2
Jul	2015	—	—	—	—
Aug	2015	—	—	—	—
Sep	2015	108.0	105.8	—	122.2
Oct	2015	—	—	—	—
Nov	2015	—	—	1,499.30	—
Dec	2015	108.4	106.1	—	122.7
Jan	2016	—	—	—	—
Feb	2016	—	—	—	—
Mar	2016	108.2	105.9	—	123.2
Apr	2016	—	—	—	—
May	2016	—	—	1,516.00	—
Jun	2016	108.6	106.0	—	123.7
Jul	2016	—	—	—	—
Aug	2016	—	—	—	—
Sep	2016	109.4	106.3	—	124.6
Oct	2016	—	—	—	—

P = Preliminary R = Revised since last month

- 1 Weighted average of eight capital cities of Australia; through the June 2012 quarter, the Base Year was the Financial Year July 1989 to June 1990 = 100.0. Starting with September 2012 quarter, the Base Year was adjusted to Financial Year July 2011-June 2012 = 100.0
- 2 Australian Bureau of Statistics: "Producer Price Indexes, Australia, Final Commodities." From the September quarter 1999 through the July quarter 2012, the Base Year was 1998-99; beginning in the September quarter of 2012, the Base Year was adjusted to new index reference period of 2011-12.
- 3 Australian Bureau of Statistics: "Average Weekly Earnings, States & Australia"
- 4 Australian Bureau of Statistics: 2001-August 2004 data from "Wage Cost Index of Total Hourly Rates of Pay, Excluding Bonuses - Sector Mining" report; from September 2004 to the present data from "Wage Cost Index of Total Hourly Rates of Pay, Excluding Bonuses" was changed to the Labor Price Index, Australia, with a new base year of 2003-04; changed to Wage Price Index in September 2012
- 5 Average Consumer Price Index for first two quarters/last two quarters of 2012, due to Base Year change starting with the September 2012 quarter.

# Canada

Year	Period	Industrial Products Price Index: All Commodities <sup>6</sup> (2010 = 100) <sup>7</sup>	Consumer Price Index: All Items <sup>6</sup> (2002=100) <sup>8</sup>	Wage-earner Data: Average Hourly Earnings (C\$) <sup>9,11</sup>			
				Metal Ore Mining <sup>10</sup> (NAICS 2122)	Mining, Quarrying, & Oil & Gas Extraction (NAICS 21)	Fabricated Metal Products Manufacturing (NAICS 332)	Other Chemical Products Manufacturing (NAICS 3259)
2002	Avg	100.0	100.0	23.60	22.83	18.04	19.78
2003	Avg	98.8	102.8	22.88	23.12	18.85	20.21
2004	Avg	102.0	104.7	21.75	23.70	18.92	20.07
2005	Avg	103.6	107.0	23.77	26.06	19.23	20.22
2006	Avg	106.0	109.1	23.10	26.48	19.06	20.20
2007	Avg	107.6	111.8	23.71	27.74	19.24	22.18
2008	Avg	112.3	114.1	26.62	28.80	22.24	21.64
2009	Avg	108.4	114.4	30.89	30.99	23.24	20.21
2010	Avg	109.4	116.5	30.72	31.59	21.31	20.82
2011	Avg	114.5	119.9	34.99	35.09	23.71	22.42
2012	Avg	115.1	121.6	37.93	36.35	23.95	26.65
2013	Avg	116.1 / 111.2 <sup>7</sup>	122.8	38.36	40.92	24.64	27.65
2014	Avg	111.3	125.2	40.83	41.12	24.89	26.73
2015	Avg	110.3	126.6	37.79	39.33	25.73	27.30
Jan	2015	108.3	124.3	39.48	42.68	25.11	27.80
Feb	2015	110.2	125.4	39.56	41.89	25.42	31.94
Mar	2015	110.6	126.3	40.75	41.89	24.86	25.17
Apr	2015	109.6	126.2	40.58	41.22	26.60	26.10
May	2015	110.2	126.9	37.78	40.78	25.77	34.06
Jun	2015	110.8	127.2	36.98	38.61	25.21	22.67
Jul	2015	111.6	127.3	36.26	38.92	25.37	28.71
Aug	2015	111.3	127.3	34.17	37.17	25.01	25.58
Sep	2015	110.9	127.1	34.64	36.53	26.13	25.52
Oct	2015	110.3	127.2	35.50	36.12	26.07	29.34
Nov	2015	110.0	127.1	38.07	36.16	26.69	26.18
Dec	2015	109.8	126.5	39.71	39.97	26.48	24.49
Jan	2016	110.1	126.8	44.49	38.92	26.36	27.08
Feb	2016	109.2	127.1	38.14	39.32	24.34	26.02
Mar	2016	108.5	127.9	41.84	39.31	27.33	25.23
Apr	2016	107.9	128.3	38.26	37.84	24.48	23.72
May	2016	109.2	128.8	33.31	36.62	25.46	23.59
Jun	2016	110.1	129.1	34.19	36.64	26.29	32.12
Jul	2016	110.3	128.9	40.07	38.95	25.78	28.50
Aug	2016	109.9	128.7	38.45 <b>P</b>	39.03 <b>P</b>	25.31 <b>P</b>	25.61 <b>P</b>
Sep	2016	110.4 <b>R</b>	128.8	42.38 <b>P</b>	40.53 <b>R</b>	24.85 <b>R</b>	24.70 <b>R</b>
Oct	2016	111.2	129.1	43.68 <b>P</b>	41.14 <b>P</b>	26.28 <b>P</b>	24.98 <b>P</b>

**P**=Preliminary **R**=Revised since last month

6 Statistics Canada: "Industry Price Indexes." Indexes for the most recent six months shown are subject to revision.

7 The Base Year changed from 1997 to 2002 as of August 1, 2010. The Base Year changed from 2002 to 2010 as of October 1, 2013.

8 The Base Year changed from 1992 to 2002 as of April 1, 2007.

9 Statistics Canada: "Employment, Earnings and Hours"

10 As of April 1992, Statistics Canada no longer provides specific information on uranium mine wages. The data has been included with Metal Ore Mining.

11 2009 average hourly earnings represents partial year (January - October) as data for November and December was too unreliable to be published by Statistics Canada.

# South Africa

Year	Period	Average Declared Working Costs/ Operating Costs per Metric Ton of Gold Ore Milled <sup>12</sup> (Rand)	Average Operating Profit per Metric Ton of Gold Ore Milled <sup>12</sup> (Rand)	Consumer Price Index <sup>13</sup> (Dec 2012 = 100)	Production Price Index All Group <sup>14</sup> (2012 = 100)
2002	Avg	258.57	--	72.1	123.8
2003	Avg	314.64	--	76.3	125.9
2004	Avg	335.97	--	77.4	126.7
2005	Avg	376.59	--	80.0	130.6
2006	Avg	374.44	--	83.7	140.6
2007	Avg	405.87	210.28	89.7	154.7
2008	Avg	449.47	327.98	78.9	180.8
2009	Avg	405.78	255.20	84.6	180.7
2010	Avg	388.74	230.80	88.2	191.6
2011	Avg	405.60	324.34	92.6	207.6
2012	Avg	507.63	323.88	97.8	220.5
2013	Avg	424.15	200.06	103.4	106.0
2014	Avg	466.1	151.9	109.7	113.9
2015	Avg	—	—	114.7	118.0
Jan	2015	—	—	110.8	113.8
Feb	2015	—	—	111.5	114.2
Mar	2015	451.59	104.96	113.1	116.2
Apr	2015	—	—	114.1	117.2
May	2015	—	—	114.4	118.1
Jun	2015	—	—	114.9	118.5
Jul	2015	—	—	116.1	118.7
Aug	2015	—	—	116.1	118.8
Sep	2015	—	—	116.1	119.1
Oct	2015	—	—	116.4	120.2
Nov	2015	—	—	116.5	120.3
Dec	2015	—	—	116.8	120.6
Jan	2016	—	—	117.7	122.5
Feb	2016	—	—	119.3	123.5
Mar	2016	—	—	120.2	124.4
Apr	2016	—	—	121.2	125.4
May	2016	—	—	121.4	125.8
Jun	2016	—	—	122.1	126.5
Jul	2016	—	—	123.1	127.5
Aug	2016	—	—	123.0	127.4
Sep	2016	—	—	123.2	127.0
Oct	2016	—	—	123.8	128.1
Nov	2016	—	—	124.2	128.6

P = Preliminary R = Revised since last month

<sup>12</sup> Chamber of Mines of South Africa, Johannesburg: "Analysis of Working Results," published quarterly

<sup>13</sup> Consumer Price Index represents all income groups-weighted average; base year changed from 2000 to 2008 in *The NUCLEAR Review*, Report no. 487; base year changed from 2008 to December 2012 in *The NUCLEAR Review*, Report no. 534

<sup>14</sup> Producer Price Index represents all commodities for consumption in South Africa; base year changed from 1995 to 2000 in *The NUCLEAR Review*, Report no. 393; base year changed from 2000 to 2012 in *The NUCLEAR Review*, Report no. 537.

# United States

Year	Period	Producer Price Index <sup>15</sup>		Consumer Price Index <sup>16</sup> (1982-84=100)	GNP Implicit Price Deflator <sup>17</sup> (2005 = 100)	GDP Implicit Price Deflator <sup>17</sup> (2005 = 100)	Gross Average Hourly Earnings of Production or Non-supervisory Workers (US\$) <sup>18</sup>			
		Industrial Commodities (1982 = 100)	All Commodities (1982 = 100)				Mining, Except Oil & Gas (NAICS212) <sup>20</sup>	Primary Metal Manufacturing (NAICS 331) <sup>19</sup>	Chemical Products Manufacturing (NAICS 325)	Electrical Equipment & Appliances (NAICS335) <sup>21</sup>
2002	Avg	132.4	131.1	179.9	92.1	92.1	18.81	19.77	19.17	15.00
2003	Avg	139.1	138.1	184.0	94.1	94.1	21.90	18.69	18.52	14.75
2004	Avg	147.6	146.7	188.9	96.8	96.8	22.91	19.49	19.16	15.27
2005	Avg	160.2	157.4	195.3	100.0	100.0	22.66	20.08	19.67	15.75
2006	Avg	168.8	164.7	201.6	103.3	103.3	22.39	19.95	19.60	15.82
2007	Avg	175.1	172.6	207.3	106.2	106.2	23.50	19.46	19.56	16.71
2008	Avg	192.3	189.6	215.3	108.5	108.5	25.94	19.35	19.49	16.69
2009	Avg	174.8	172.9	214.5	109.8	109.8	25.93	18.72	20.30	17.25
2010	Avg	187.0	184.7	218.1	111.0	111.0	28.85	19.46	21.08	17.82
2011	Avg	202.0	201.0	224.9	113.4	113.4	29.96	20.84	21.46	18.50
2012	Avg	202.1	202.2	229.6	115.4	115.5	31.75	21.57	21.45	18.73
2013	Avg	203.0	203.4	233.0	106.7	106.6	31.30	21.46	21.40	18.87
2014	Avg	204.2	205.3	236.7	108.4	108.3	32.20	22.40	21.49	19.32
2015	Avg	173.1	191.0	237.0	109.0	109.8	31.66	22.44	21.76	20.07
Jan	2015	189.8	192.0	233.7	—	—	31.49	22.52	21.59	19.79
Feb	2015	189.6	191.1	234.7	—	—	32.58	22.63	21.55	20.01
Mar	2015	190.0	191.5	236.1	109.1	109.1	32.50	22.58	21.60	20.14
Apr	2015	189.3	190.9	236.6	—	—	30.81	22.33	21.66	20.42
May	2015	191.8	193.4	237.8	—	—	30.71	22.47	21.80	20.03
Jun	2015	193.2	194.8	238.6	109.8	109.7	30.53	22.12	21.60	20.05
Jul	2015	192.3	193.9	238.7	—	—	31.09	22.36	21.80	20.06
Aug	2015	190.1	199.1	238.3	—	—	31.48	22.38	21.73	20.24
Sep	2015	187.4	189.1	237.9	110.1	110.0	32.53	22.73	22.04	20.07
Oct	2015	186.0	187.5	237.8	—	—	31.84	22.36	21.82	19.88
Nov	2015	184.2	185.7	237.3	—	—	32.27	22.29	22.02	19.99
Dec	2015	182.3	183.5	236.5	110.4	110.3	32.06	22.46	21.85	20.15
Jan	2016	180.9	182.6	236.9	—	—	26.69	22.42	21.99	19.12
Feb	2016	179.4	181.3	237.1	—	—	26.97	22.58	21.73	19.07
Mar	2016	180.4	182.1	238.1	110.7	110.6	26.98	22.86	21.94	19.12
Apr	2016	181.9	183.2	239.3	—	—	26.34	22.98	22.11	19.21
May	2016	184.0	185.3	240.2	—	—	26.44	22.86	22.43	19.36
Jun	2016	186.3	187.6	241.0	111.3	111.3	26.24 <b>R</b>	23.18	22.83 <b>R</b>	19.21 <b>R</b>
Jul	2016	186.7 <b>R</b>	187.7 <b>R</b>	240.6	—	—	26.41	23.24	23.24 <b>R</b>	19.35 <b>R</b>
Aug	2016	185.8 <b>P</b>	186.2 <b>P</b>	240.9	—	—	26.13	23.19	23.08	19.27
Sep	2016	187.0 <b>P</b>	187.0 <b>P</b>	241.4	111.7	111.6 <b>R</b>	26.45	23.73	23.26	19.42
Oct	2016	187.4 <b>P</b>	186.8 <b>P</b>	241.7	—	—	26.69 <b>P</b>	23.17 <b>P</b>	23.41 <b>P</b>	19.53 <b>P</b>
Nov	2016	186.6 <b>P</b>	186.4 <b>P</b>	241.4	—	—	—	23.55 <b>P</b>	23.21 <b>P</b>	19.28 <b>P</b>

P= Preliminary R= Revised since last month

15 US Bureau of Labor Statistics, "Producer Prices and Price Indexes;" Producer Price Indexes are revised four months after they are first released, to reflect the availability of late reports and corrections by respondents.

16 US Bureau of Labor Statistics: Consumer Price Index for All Urban Consumers, US City Average

17 US Department of Commerce: Bureau of Economic Analysis; the Gross National Product (GNP) and Gross Domestic Product (GDP) Implicit Price Deflators (IDP) are published quarterly, and seasonally adjusted; base year change from 2000 to 2005 in *The NUCLEAR Review*, no. 492; base year change from 2005 to 2009 in *The NUCLEAR Review*, no. 540

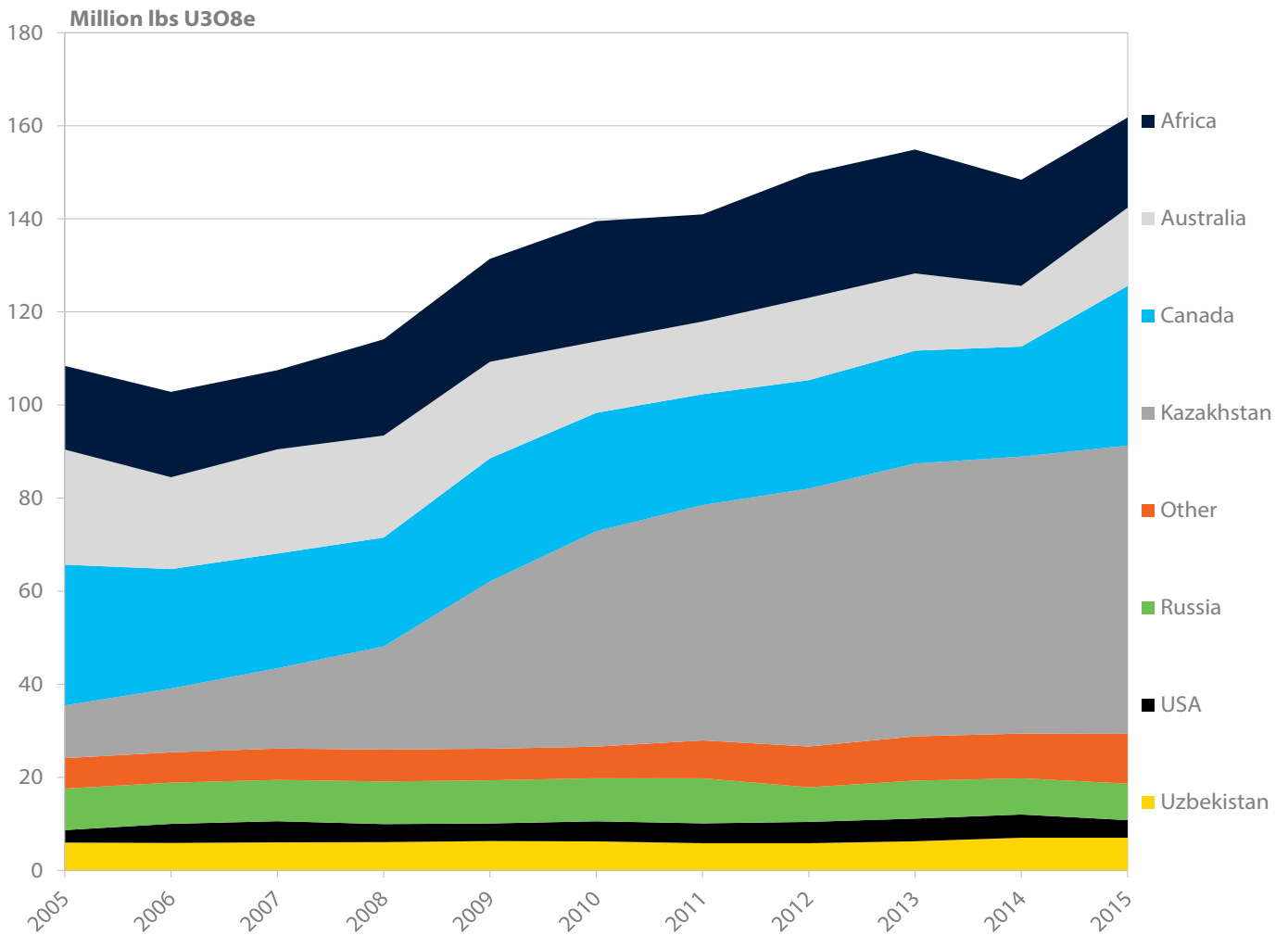
18 US Bureau of Labor Statistics: "Employment and Earnings." 2002 data based on 1972 revision of SIC Manual; 2003 to present, data reflects new NAICS industry classification

19 Category change in January 2014, to Primary Metal Manufacturing (NAICS 331); includes previously reported subcategory Other Nonferrous Metal Production (NAICS 3314) discontinued in February 2014

20 Category change in January 2016, to Mining, Except Oil & Gas (NAICS 212); includes previously reported subcategory Metal Ore Mining (NAICS 2122) discontinued in December 2015

21 Category change in January 2016, to Electrical Equipment & Appliances (NAICS 335); includes previously reported subcategory Other Electrical Equipment & Components (NAICS 3359) discontinued in December 2015

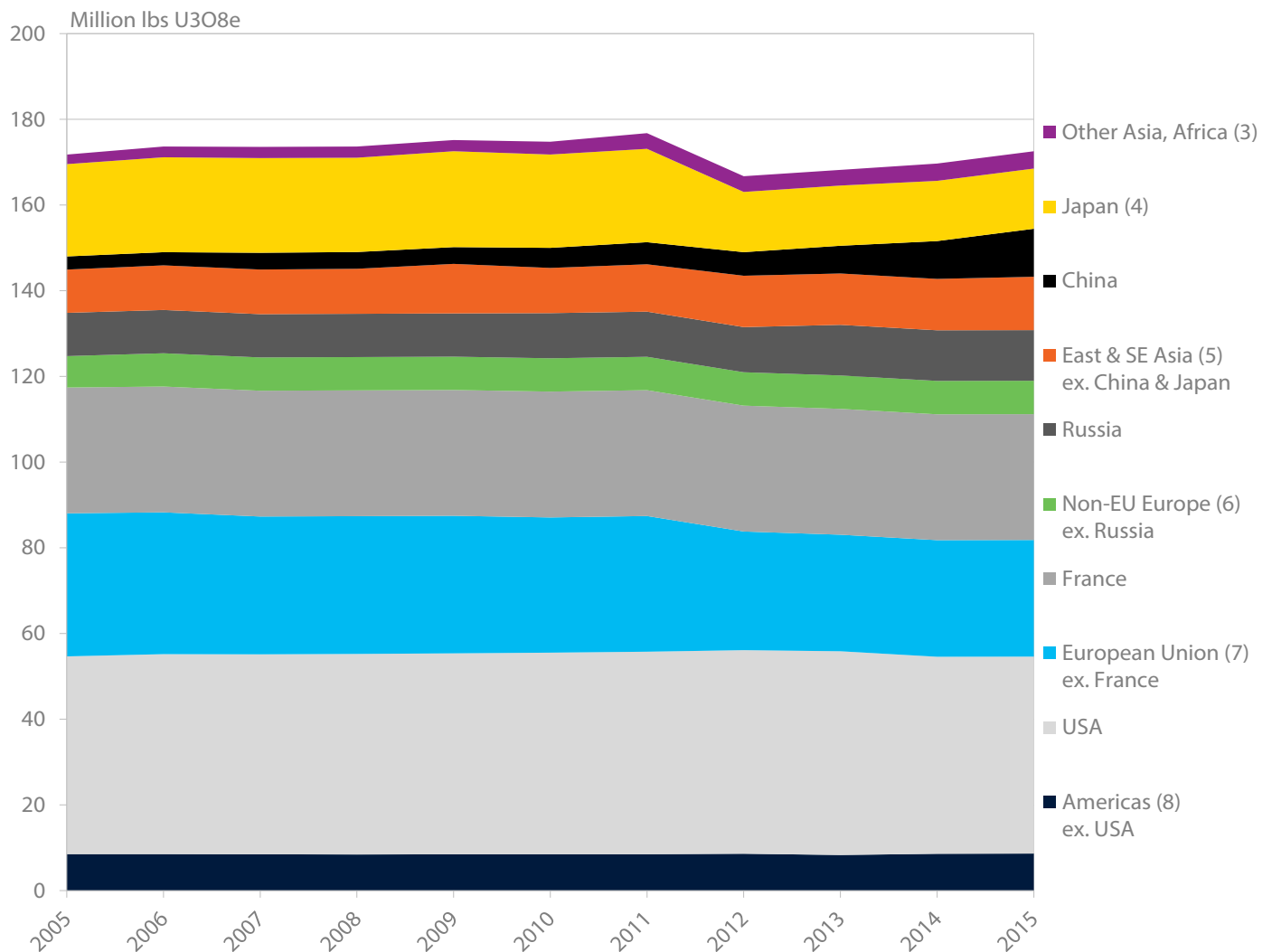
# World Uranium Production<sup>1</sup> 2005-2015



<sup>1</sup> World uranium production in 2015 totaled 161.8 million pounds equivalent U<sub>3</sub>O<sub>8</sub>.



# World Uranium Requirements<sup>2</sup> 2005-2015



2 Calculated by TradeTech, based on installed capacity available for commercial operation (GWe). Uranium requirements are calculated from a generic set of assumptions (Thermal Efficiency = 33%, Load Factor = 90%, Product Assay = 4.25%, Tails Assay = 0.25%, Discharge Burn-up Rate = 50 GWD/pound U<sub>3</sub>O<sub>8</sub>).

3 Other Asian, Africa includes: India, Iran, Pakistan, and South Africa.

4 Not all installed capacity in Japan was available for commercial operation in 2011-2014.

5 East & SE Asia includes: South Korea and Taiwan.

6 Non-EU Europe includes: Armenia, Switzerland, and Ukraine.

7 European Union includes: Belgium, Bulgaria, Czech Republic, Finland, Germany, Hungary, Lithuania, Netherlands, Romania, Slovakia, Slovenia, Spain, Sweden, and the UK.

8 Americas includes: Argentina, Brazil, Canada, and Mexico.

# World Historical Uranium Production

(thousand pounds U<sub>3</sub>O<sub>8</sub>)

Region/ Country	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Africa	18,337	17,001	20,676	22,115	25,861	23,037	26,743	26,619	22,786	19,391
Australia	19,742	22,387	21,917	20,752	15,339	15,524	17,710	16,600 R	13,061	16,809
Canada	25,642	24,636	23,399	26,448	25,434	23,800	23,281	24,243	23,640	34,300
Kazakhstan	13,725	17,255	22,153	35,929	46,284	50,570	55,424	58,625	59,506	61,944
Russia	8,839	8,873	9,154	9,266	9,260	9,675	7,441	8,151	7,776	7,833
USA	4,106	4,541	3,879	3,778	4,316	4,266	4,573	4,872	4,995	3,787
Uzbekistan	5,902	6,032	6,078	6,315	6,239	5,850	5,850	6,264	7,020	7,020
Other <sup>7</sup>	6,531	6,751	6,856	6,802	6,780	8,151	8,766	9,526	9,619	10,706
<b>TOTAL</b>	<b>102,824</b>	<b>107,476</b>	<b>114,112</b>	<b>131,405</b>	<b>139,513</b>	<b>141,076</b>	<b>150,232</b>	<b>154,901</b>	<b>148,403</b>	<b>161,790</b>

P= Preliminary R= Revised since last month

<sup>7</sup> Other includes: Argentina, Brazil, China, Czech Republic, India, Pakistan, Romania, and Ukraine.

# Natural Uranium Deliveries to European Union Utilities/End Users<sup>8</sup>

Compiled from data published by the Euratom Supply Agency

Year	Volume of Deliveries to EU Utilities/ Users <sup>9</sup> (tU)	Percentage of Deliveries under Spot Contracts <sup>10</sup>	Spot Contracts <sup>11</sup> Average Price		Multiannual Contracts <sup>11</sup> Average Price		Multiannual Contracts (MAC-3) Average Price <sup>12</sup>	
			in Euros per kgU	in US Dollars per pound U <sub>3</sub> O <sub>8</sub>	in Euros per kgU	in US Dollars per pound U <sub>3</sub> O <sub>8</sub>	in Euros per kgU	in US Dollars per pound U <sub>3</sub> O <sub>8</sub>
2002	16,900	8.0	25.50	9.27	34.00	12.37	—	—
2003	16,400	18.0	21.75	9.46	30.50	13.27	—	—
2004	14,600	4.0	26.14	12.51	29.20	13.97	—	—
2005	17,600	5.0	44.27	21.19	33.56	16.06	—	—
2006	21,400	7.8	53.73	25.95	38.41	18.55	—	—
2007	21,932	2.4	121.80	64.21	40.98	21.60	—	—
2008	18,622	2.9	118.19	66.86	47.23	26.72	84.75	47.94
2009	17,591	5.2	77.96	41.83	55.70	29.88	63.49	34.06
2010	17,566	4.1	79.48	40.53	61.68	31.45	78.11	39.83
2011	17,832	3.9	107.43	57.52	83.45	44.68	100.02	53.55
2012	18,639	3.8	97.80	48.33	90.03	44.49	103.42	51.11
2013	17,023	7.1	78.24	39.97	85.19	43.52	84.66	43.25
2014	14,751	3.5	74.65	38.15	78.31	40.02	93.68	47.87
2015	15,990	5.0	88.73	37.87	94.30	40.24	88.53	37.78

P= Preliminary R= Revised since last month

<sup>8</sup> The 14 European Union (EU) member nations are: Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and the United Kingdom. Exchange rates are published by European Communities Statistical Office and the International Monetary Fund.

<sup>9</sup> The only deliveries taken into account are those made to final users, namely the electric utilities or their procurement organizations; deliveries to middlemen or fuel cycle companies are not included. The sales between utilities in the Union are also excluded. The quantities covered are those which were entered into accounting records during the year stated. Quantities do not include reprocessed uranium.

<sup>10</sup> "Spot" contracts are defined as those providing for either only one delivery or deliveries extending over a period of a maximum of 12 months, whatever the time between the conclusion of the contract and the first delivery.

<sup>11</sup> "Multiannual" contracts are defined as those providing for deliveries extending over more than 12 months.

<sup>12</sup> New "MAC-3" price index introduced in 2008 is based on a three-year moving average.

# US Uranium Marketing Data<sup>13</sup>

Compiled from data published by the US Energy Information Administration

Year	Utility Domestic Purchases		Import	
	Average Price & Quantity of Deliveries to Domestic Utilities from US Suppliers		Average Price & Quantity of Deliveries to US Utilities from Foreign Suppliers <sup>14</sup>	
	(million lbs U <sub>3</sub> O <sub>8</sub> eq.)	(US\$ per pound U <sub>3</sub> O <sub>8</sub> eq.)	(million lbs U <sub>3</sub> O <sub>8</sub> eq.)	(US\$ per pound U <sub>3</sub> O <sub>8</sub> eq.)
2002	21.5	10.35	52.7	10.05
2003	20.5	10.84	53.0	10.59
2004	26.5	11.91	66.1	12.25
2005	27.2	13.98	38.5	14.63
2006	27.1	18.54	38.7	18.66
2007	17.8	33.13	32.5	32.58
2008	20.1	43.43	31.4	47.46
2009	16.9	44.53	32.2	46.55
2010	16.2	44.88	29.8	51.69
2011	19.4	53.41	34.9	56.87
2012	21.5	56.51	35.5	54.08
2013	23.3	52.51	34.1	51.64
2014	20.5	43.99	32.9	47.51
2015	18.7	43.03	35.8	44.70

P = Preliminary R = Revised since last month

<sup>13</sup> 1984-2002: Energy Information Administration, *Uranium Industry Annual*.  
2003 to present: Energy Information Administration, *Uranium Marketing Annual Report*.

<sup>14</sup> Foreign suppliers are defined to include non-US based firms that market uranium into and from the USA.

# US Uranium Marketing Data<sup>15</sup>

Compiled from data published by  
the US Energy Information Administration

Year	Utility Spot Purchases		Utility Total Purchases	
	Average Price & Quantity of Deliveries to US Utilities under Spot Contracts <sup>16</sup>		Average Price & Quantity of of Total Deliveries of US Utilities <sup>17</sup>	
	(million lbs U <sub>3</sub> O <sub>8</sub> eq.)	(US\$ per pound U <sub>3</sub> O <sub>8</sub> eq.)	(million lbs U <sub>3</sub> O <sub>8</sub> eq.)	(US\$ per pound U <sub>3</sub> O <sub>8</sub> eq.)
2007	6.6	88.25	51.0	32.78
2008	8.7	66.95	53.4	45.88
2009	8.1	46.45	49.2	45.86
2010	8.2	43.99	46.6	49.29
2011	12.0	54.69	54.8	55.64
2012	8.1	51.04	56.9	54.99
2013	11.3	43.83	57.4	51.99
2014	14.5	36.64	53.3	46.16
2015	11.3	36.80	56.5	44.13
US Utility Receipts of US-Origin Uranium <sup>18</sup>				
	(million lbs U <sub>3</sub> O <sub>8</sub> eq.)	(US\$ per pound U <sub>3</sub> O <sub>8</sub> eq.)		
2007	4.0	28.89		
2008	7.7	59.55		
2009	7.1	48.92		
2010	3.7	45.25		
2011	5.2	52.12		
2012	9.8	59.44		
2013	9.5	56.37		
2014	3.3	48.11		
2015	3.4	43.86		
Imports of Uranium Directly by US Utilities <sup>19</sup>				
	(million lbs U <sub>3</sub> O <sub>8</sub> eq.)	(US\$ per pound U <sub>3</sub> O <sub>8</sub> eq.)		
2007	47.0	33.05		
2008	45.6	43.47		
2009	42.8	45.35		
2010	42.9	49.64		
2011	49.6	55.98		
2012	47.7	54.07		
2013	47.9	51.13		
2014	50.0	46.03		
2015	53.1	44.14		

P= Preliminary R= Revised since last month

<sup>15</sup> Source: Energy Information Administration, *Uranium Industry Annual*.

<sup>16</sup> "Spot" contract is defined as a one-time delivery of the entire contract within one year of contract execution.

<sup>17</sup> Includes deliveries of uranium under all contract types, including spot, short-term, medium-term, and long-term contracts.

<sup>18</sup> Includes US utility receipts for all forms, including uranium concentrates (U<sub>3</sub>O<sub>8</sub>), uranium hexafluoride (UF<sub>6</sub>) and enriched uranium product.

<sup>19</sup> Includes US utility receipts for all origins and all forms, including uranium concentrates (U<sub>3</sub>O<sub>8</sub>), uranium hexafluoride (UF<sub>6</sub>) and enriched uranium product, but under contracts with only non-US suppliers



# Australian Annual U<sub>3</sub>O<sub>8</sub> Exports<sup>20</sup>

Year <sup>21</sup>	Average Price (A\$ / kg U <sub>3</sub> O <sub>8</sub> )	Volume (tonnes U <sub>3</sub> O <sub>8</sub> )
2002-03	44.5	9,592
2003-04	40.0	11,215
2004-05	42.4	11,215
2005-06	53.2	10,252
2006-07	69.1	9,518
2007-08	87.3	10,139
2008-09	97.9	10,114
2009-10	99.4	7,555
2010-11	87.8	6,950
2011-12	87.8	6,917
2012-13	98.1	8,391
2013-14	92.8	6,701
2015	115.1	6,969

P = Preliminary R = Revised since last month

<sup>20</sup> Source: ABARE, *Australian Mineral Statistics* (previously *Quarterly Mineral Statistics*) and/or Uranium Information Centre

<sup>21</sup> Annual data are reported on the basis of the Australian financial year, which extends from July 1 of the first year, through June 30 of the following year; 2015 data is reported for the calendar year.

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