

FBP Update

Impacts Of DOE Uranium Barter Program On U.S. Domestic Industry

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April 1, 2014

FBP advocates full appropriation funding for Portsmouth D&D; but continued DOE UF6 uranium barter sales if appropriations are not forthcoming

- In FBP’s analysis based on objective measures to date conclude that the U.S. uranium mining, conversion and enrichment industries have not experienced an adverse material impact from DOE’s Uranium Barter Program.....
 - Uranium Market Prices (Long Term & Spot)
 - Domestic Uranium Production
 - Domestic Employment
- DOE has implemented a Transparent and Predictable Plan
- FBP has followed through and provided DOE with a model (Traxys) designed to sell the material in the a market neutral non-disruptive manner—moving material from the spot to long-term market and domestic to international.

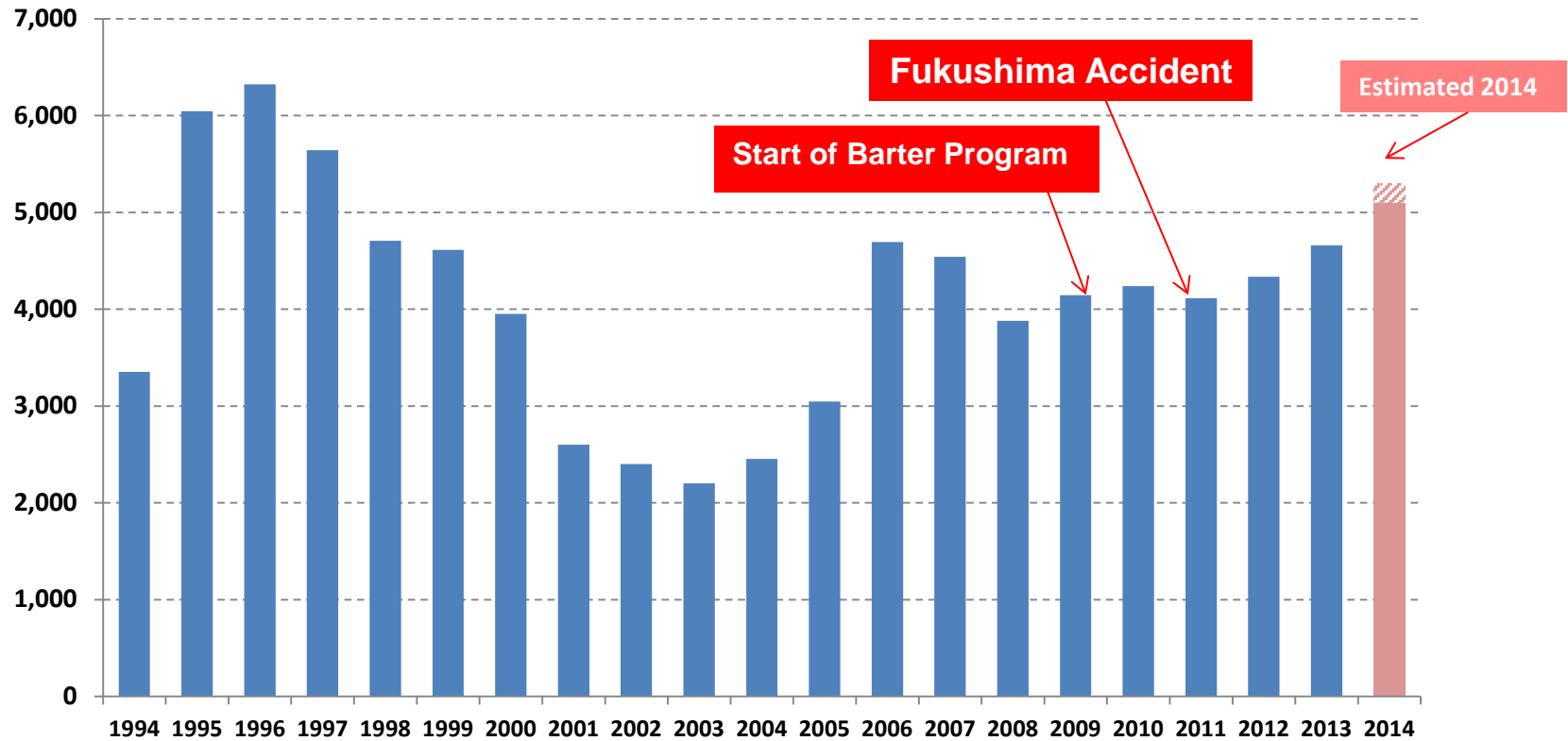
DOE Barter Sales (FBP-Traxys Model)

- DOE quantities are minor compared to other sources
- Sales methodology to minimize impact on uranium market
- Preference to sell to end users rather than speculative players to prevent material from competing against itself.
- 50% of sales to U.S. utilities / 50% to non-U.S. utilities
- 50% of sales under mid and LT contracts, spot quantities very minimal
- U3O8 and Conversion have sometimes been contracted separately

The DOE U barter program has not had an adverse material impact on domestic industries as shown by...

1. As reported by EIA, the price paid for U.S. origin uranium over the past 20 years has been at its highest in the last 5 years, since the barter program started.
2. US uranium production has been increasing since the beginning of the barter program, and is at its highest level now since 1997 (EIA Data).
3. US uranium employment has grown (2009-2012) since start of barter.
4. US uranium producers Market Cap has increased significantly over time, with many approaching pre-Fukushima highs over the last 3 months
5. US producer Capital Expenditure decisions are made based on long-term U3O8 prices, not spot prices. U3O8 Term price is \$50/lb.—up from the decades before level of \$10/lb.
6. Term & spot UF6 conversion prices are up 40% to 45% since barter began.

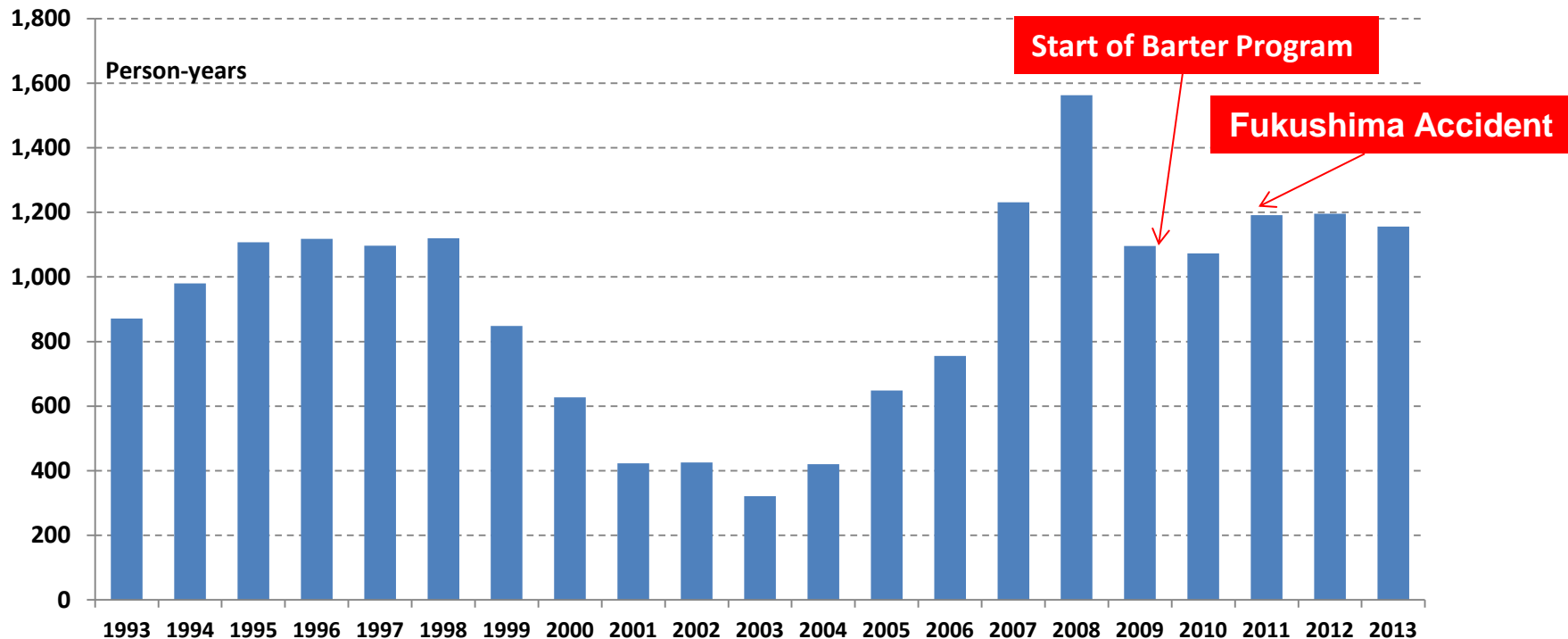
U.S. Uranium Production



Since the start of uranium barter, domestic production has increased to highest level since 1997 and is likely to continue to increase in 2014

U.S. Uranium Production Industry Employment

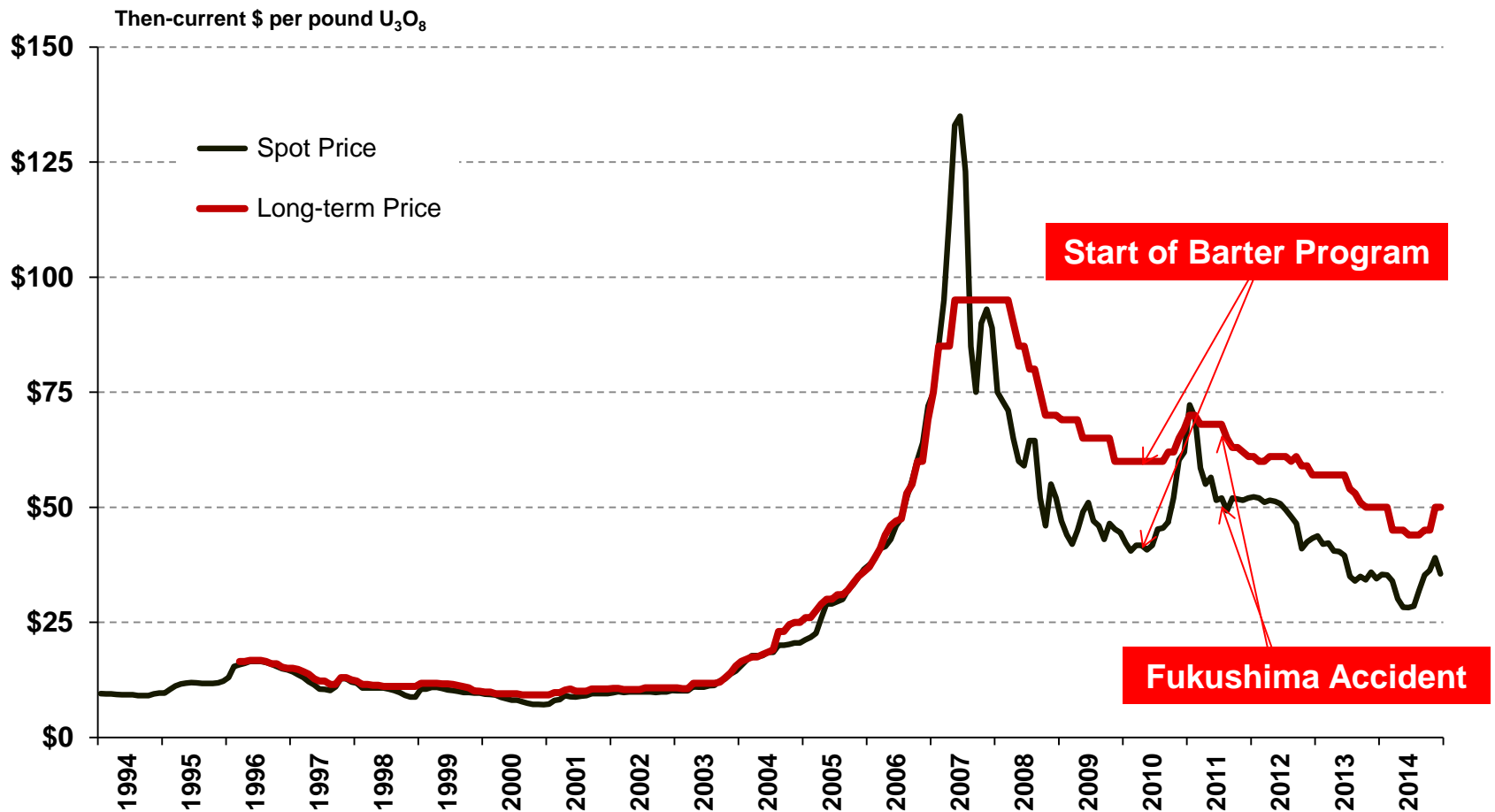
Person Years



Since the start of uranium barter employment has increased. Recent layoffs in 2013 are partially offset by the startup of 2 new domestic ISL producers in 2013 and 2104

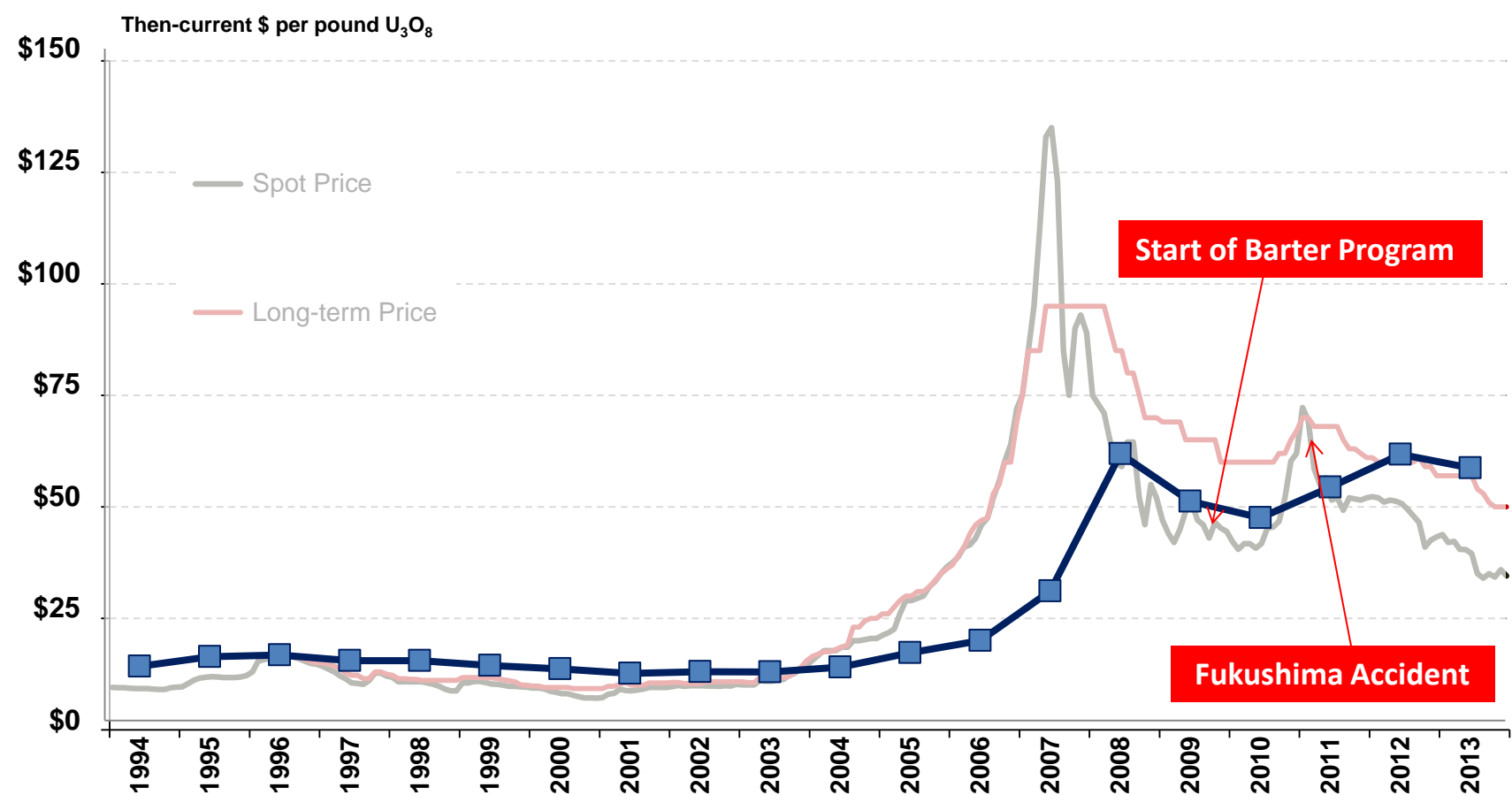
Source: Energy Information Agency Domestic Uranium Production Reports for 2013 and 2004

U₃O₈ Prices (Industry Published Indices)



Prices rose quickly, over-stimulated by an excess of exuberance, not fundamentals. A correction was inevitable. 90% of the price drop occurred prior to start of barter program.

Price of U.S. Origin Uranium (U_3O_8) Sold to Owners/Operators of U.S. Nuclear Plants . . .



Highest U.S. Origin prices have been in the last 6 years—Over 5X the decade of 1994-2004. Average price for the latest reported year (2013) is \$56.37/lb. U3O8

Source: U.S. Energy Information Administration, 2013 Uranium Marketing Annual Report, weighted-average price for U.S. origin uranium sold to Owners & Operators of US nuclear power plants

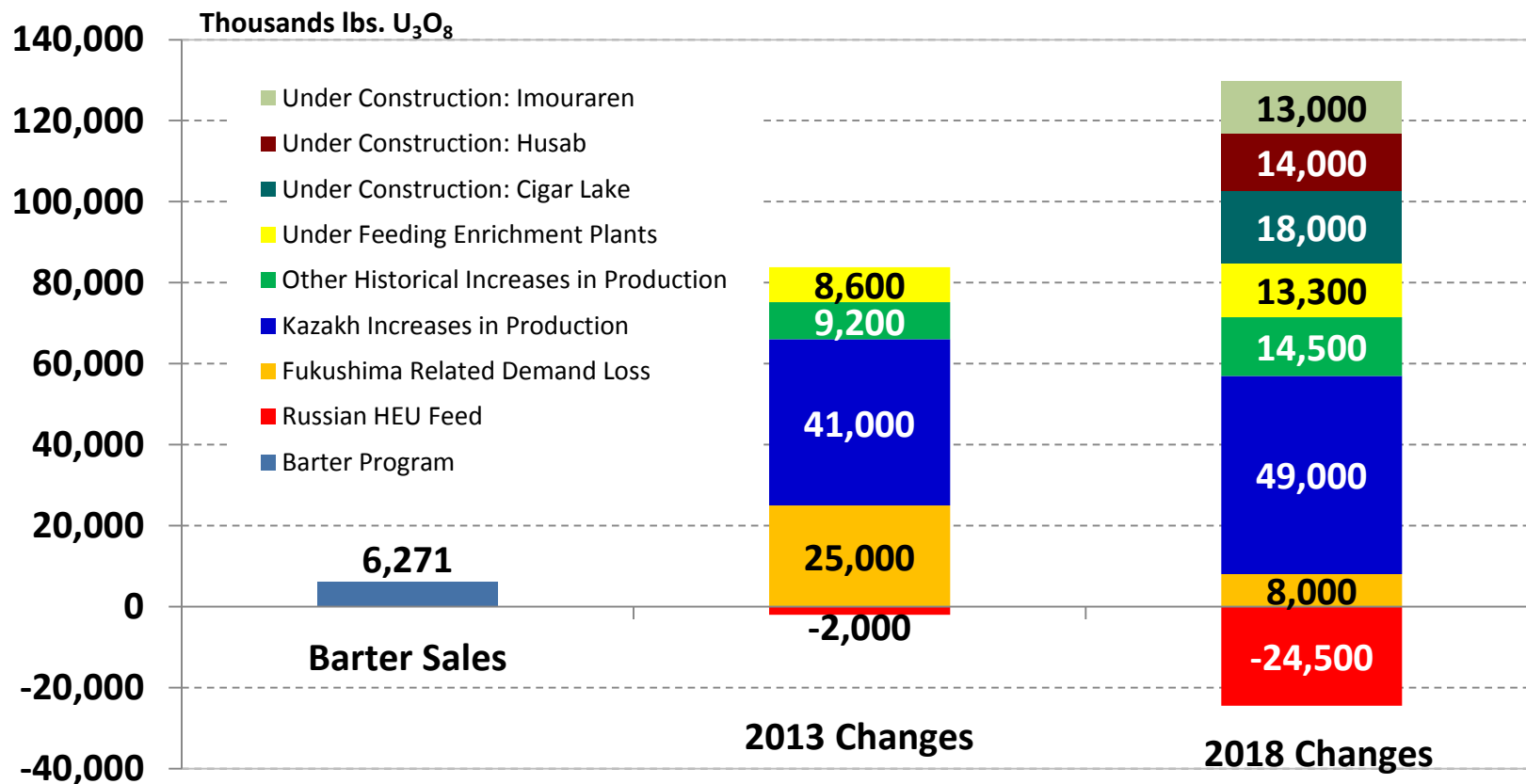
Market Insights

- **The 2007 bubble prices over stimulated supply and the imbalance was accentuated by a large, near-term loss of demand due to Fukushima.**
- In response primary production needs to be reduced, yet it has continued to expand.
- Most expansion is by the world's largest suppliers, some of whom have expanded in other countries (Kazakhstan and Canada) while cutting back in the United States.
- Current market prices are well off their 2007 peak but still significantly higher than the pre-spike decade, by 3X—5X.

Principal Contributions to Price Decline

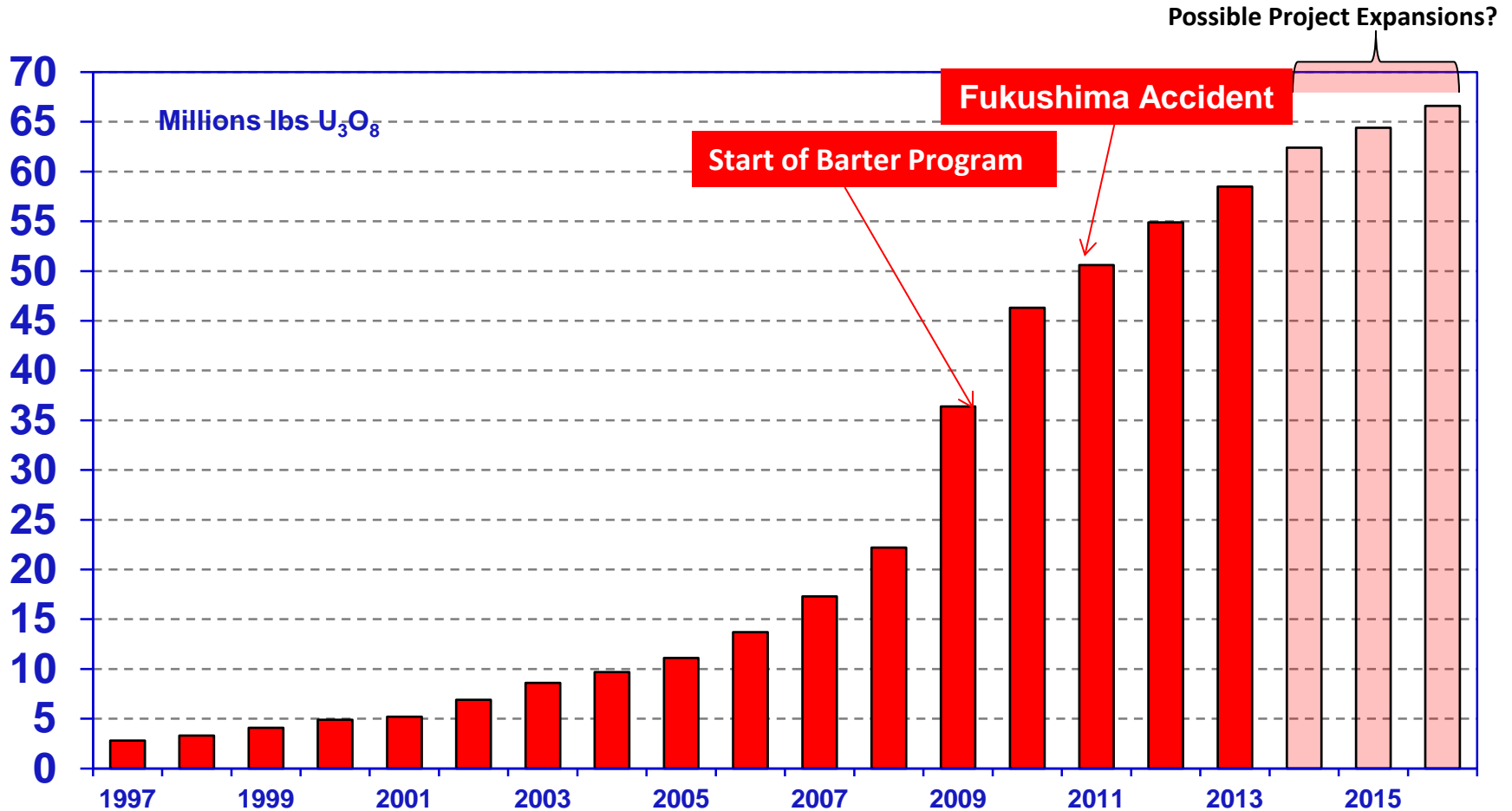
- Reduction in near-term demand of 25 million lbs./year due to Fukushima
- Annual primary production increased 50 million lbs. (50%) from 2007 to 2012 – Kazakhstan accounted for more than 41 million of this increase
- Properties currently under development are projected to increase production by another 40 million lbs. (25% increase) through 2018
- Increase in excess enrichment supply (partially due to Fukushima) encourages additional “production” of about 13.3 million lbs. equivalent per year from under-feeding/re-enriching tails
- Low cost financing (Stimulus derived) available to banks resulted in significant quantities of excess near-term uranium being offered at low, fixed prices to be held for future delivery at imputed interest rates ~3%
- Above factors are partially offset by end of feed from Russian HEU Deal

U₃O₈ Supply/Demand Changes Since Peak Price Year—2007



DOE Barter quantities are very small compared to other changes

Kazakh U_3O_8 Production

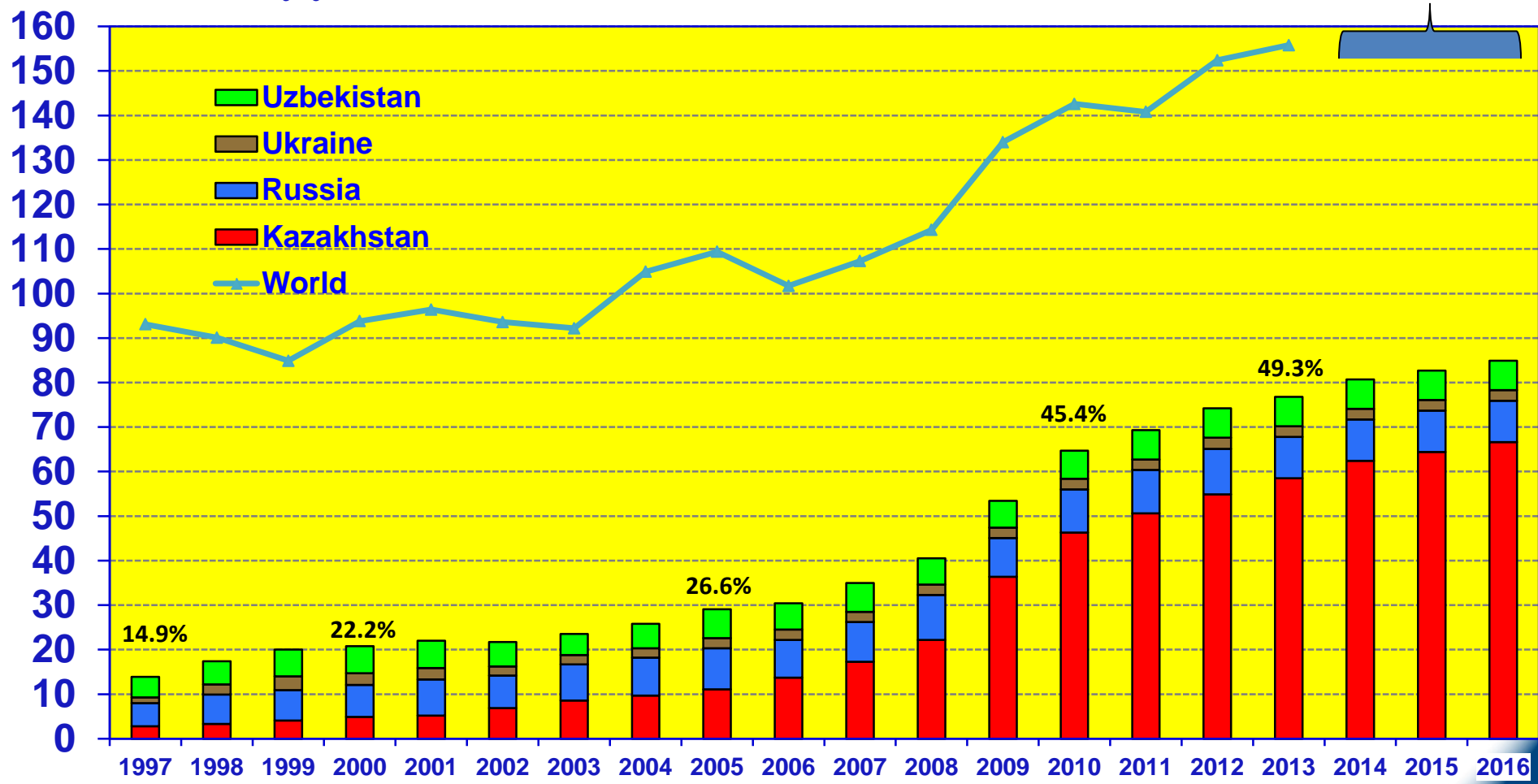


Expansions based on April 15, 2013 Central Asia Economy article discussing Kazatomprom plans.

FSU Equivalent U_3O_8 Production Market Share is 65% in 2013—if HEU and Underfeeding were included . . .

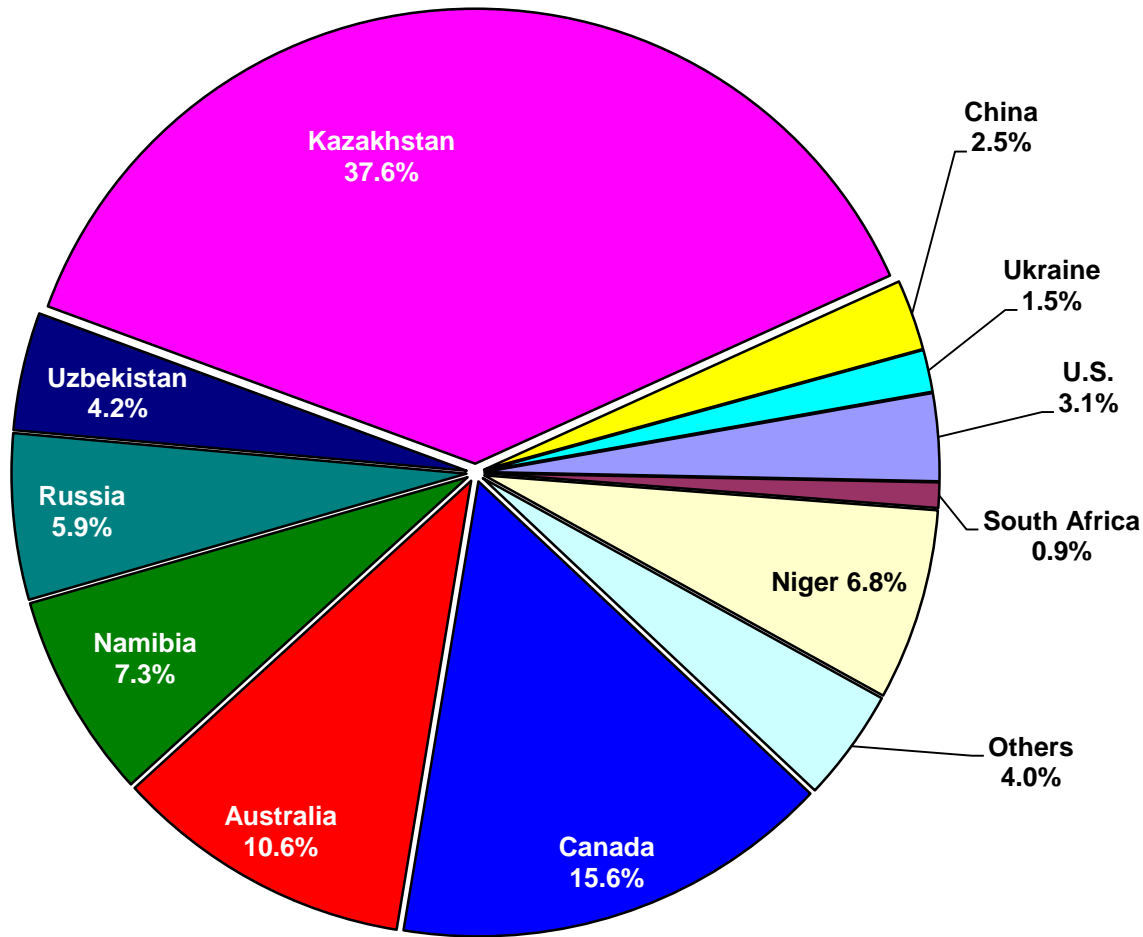
Millions lbs U_3O_8

Additional Expansions?



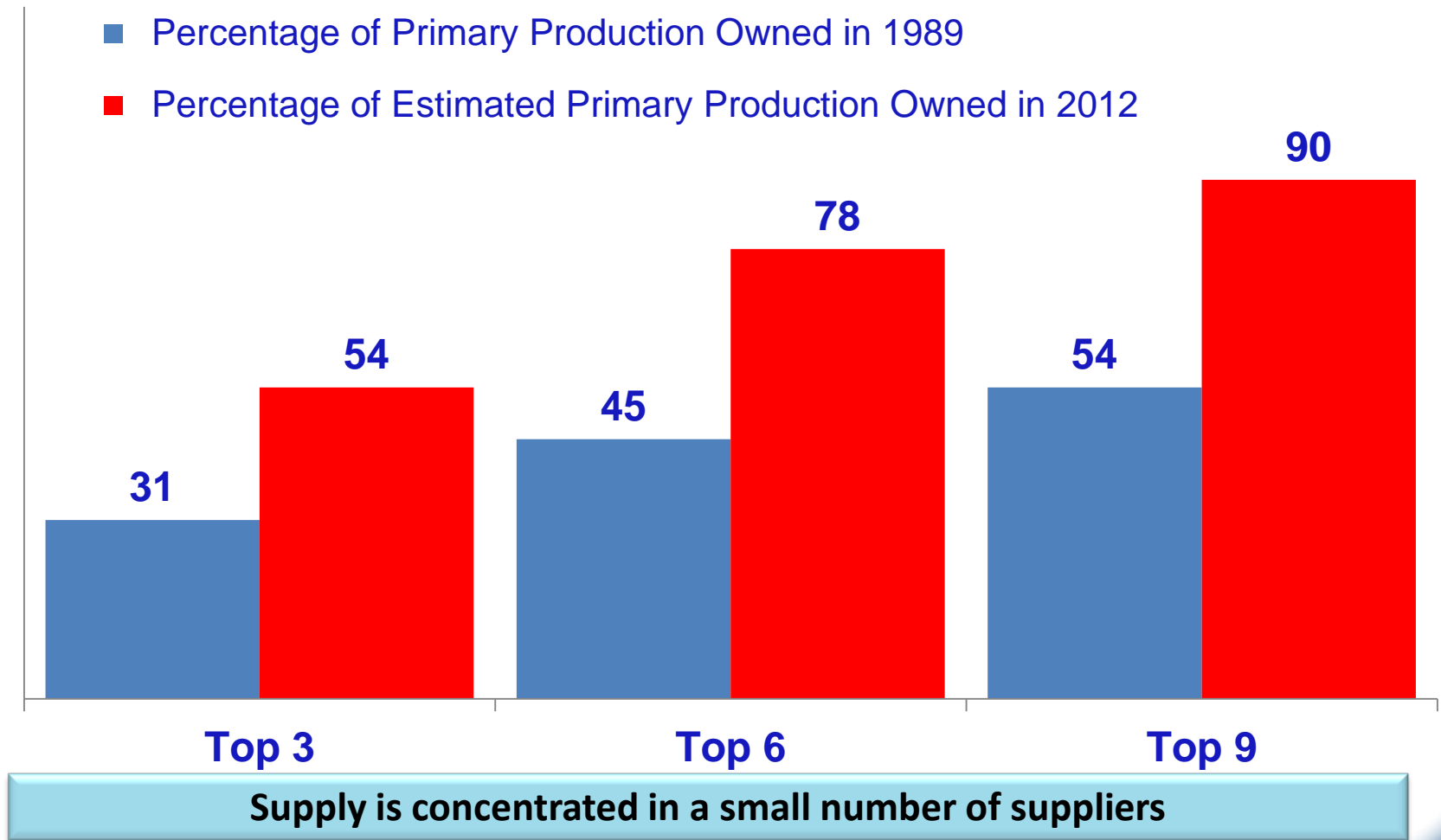
2013 Worldwide U₃O₈ Production

Total = 155.8 million lbs (59,500 MTU)



Kazakh market share continues to grow

U₃O₈ Industry Supply Concentration Ratios (after ARMZ/Uranium One Merger, including Russian Underfeeding)



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Supply through 2020 far exceeds needs – Building Strategic Inventory

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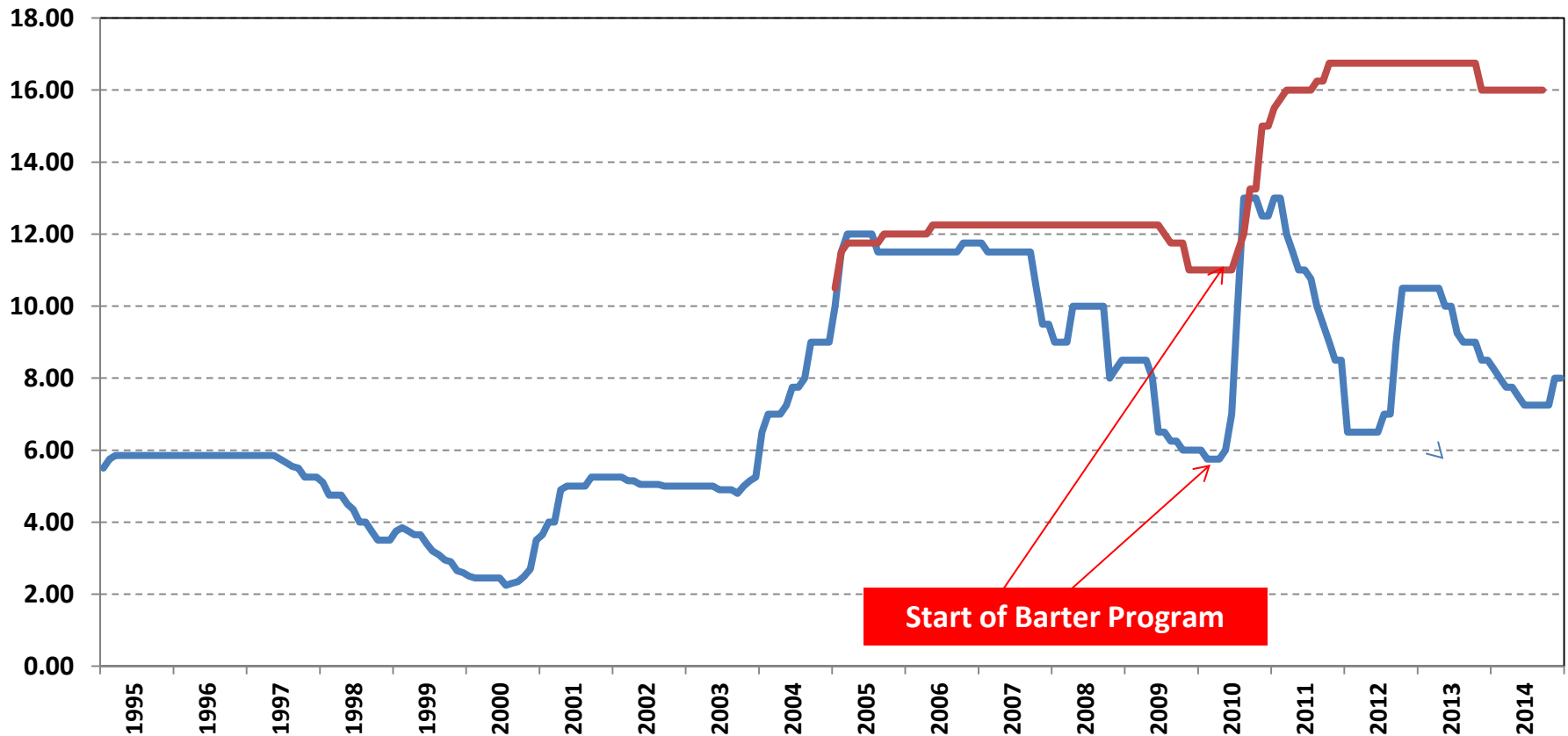
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Issues FBP Considered to reach our Recommendation of Continued Uranium Barter

1. History vs Future: 2, 5 and 20 Years (1993 – 2033)
2. U.S. vs International: market demand and currency devaluations
3. Total vs Uncommitted: (Supply and Demand) for clearing price projections
4. Primary Supply vs Secondary Supply: DOE relative shares and dev. projects
5. US Nuclear Interests vs Market Segment Interests: U.S. Fleet, D&D, etc.
6. Bubbles: Inventory, Price, Supply and China: impacts
7. Economic (\$) vs Control (Market Share): Western companies vs FSU economies
8. Enrichment vs U3O8/UF6: DOE excess forms vs % of total market supply
9. GDEP D&D Fees vs U Barter Sales vs Appropriations: Levelized DOE Plans
10. Timing of obsolete infrastructure: DOE has to avail use of HEU and X-344
11. Stakeholders: US Citizens, Regulators, fleet, D&D, fuel cycle companies

North American Conversion Prices



- Spot price changes show no correlation to barter sales.
- Term & spot prices up 40% to 45% since barterers began.
- Term prices not very volatile, generally up since barter started

Conversion Market Observations

- Some excess supply through 2018 even with expected shutdown of Springfields on August 31, 2014 (2 Years Early)
- Excess
 - Mainly due to underfeeding
 - Barter quantities are small about 4% of demand, about 25% of HEU feed which ended in 2013
- Some expansion could be necessary beginning late this decade if China does not reach its goal of self sufficiency

Impact on Domestic Converter

- Appears that their policy is to sell on term market
- Term & spot prices are up 40% to 45% since barter began; therefore there can be no price impact
- Resumed production in mid-2013 after year long shutdown for NRC licensing related upgrades
- Operating at near capacity; therefore no current production or employment impact