

# Sachem Cove Partners



**Uranium: Climbing the Wall of Worry - Price is Everything**

**October 2020**

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## Common Investor Fears About Nuclear Power and Uranium

1. Nuclear power isn't Safe
2. Nuclear Power isn't a growth business.
3. The Kazakh's can ramp production and fill any deficit.
4. All combined State-Owned production can meet all demand.
5. All State-owned and C&M mines at \$45 lb. can meet all demand.
6. All State-owned + C&M + Secondary supply can meet all demand.

# Reality: Nuclear Power Must Be Part of Any Climate Change Playbook

Clean

Safe

Reliable

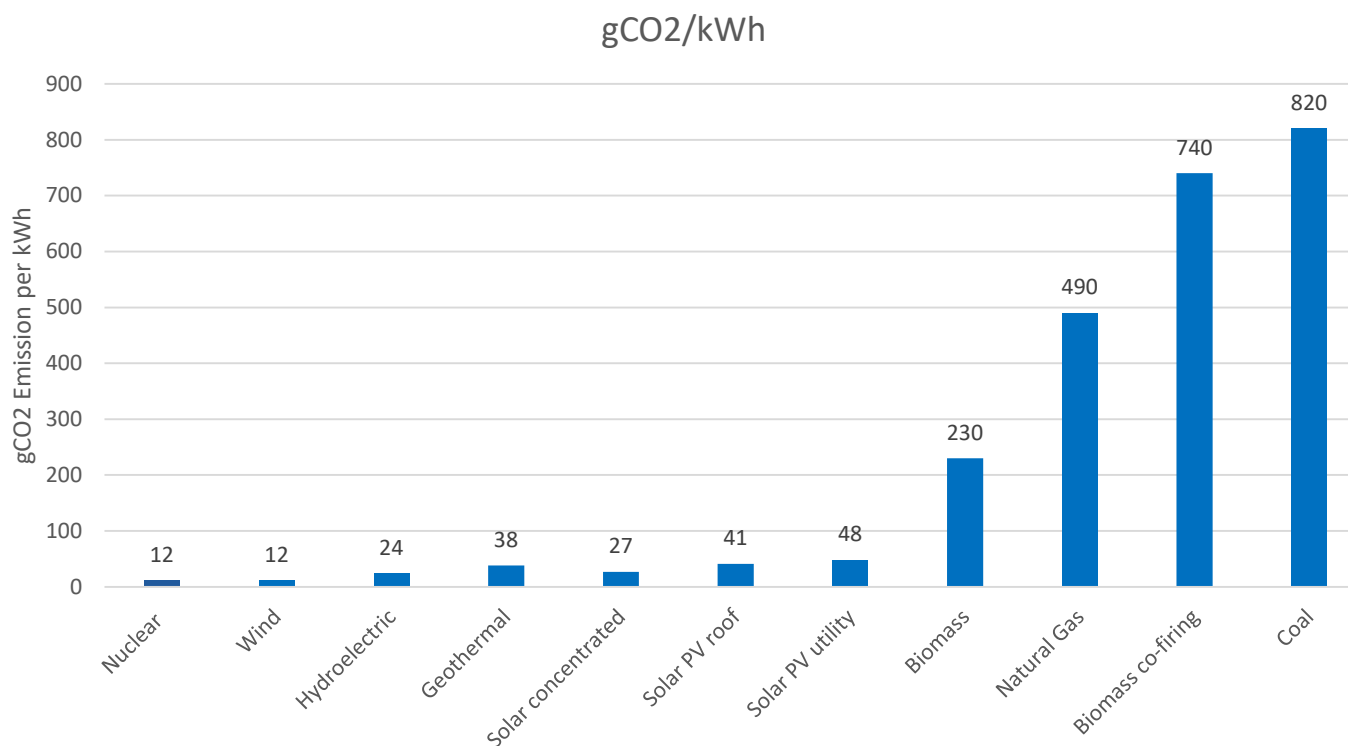


# Clean, Safe & Reliable: Nuclear is Here to Stay

- 11% of Global Electricity Generation
- 20% of United States Electricity Generation
- Almost Zero Carbon Emissions
- “Base load” Power
  - Operates 24/7 Versus Intermittent Power Like Wind and Solar
- Significant New Capital Committed Globally
  - \$500 Billion+ Globally to Build New Reactors
- Strong Demand Growth
  - ~2% Per Annum Through 2030

# Nuclear Power is Clean Power

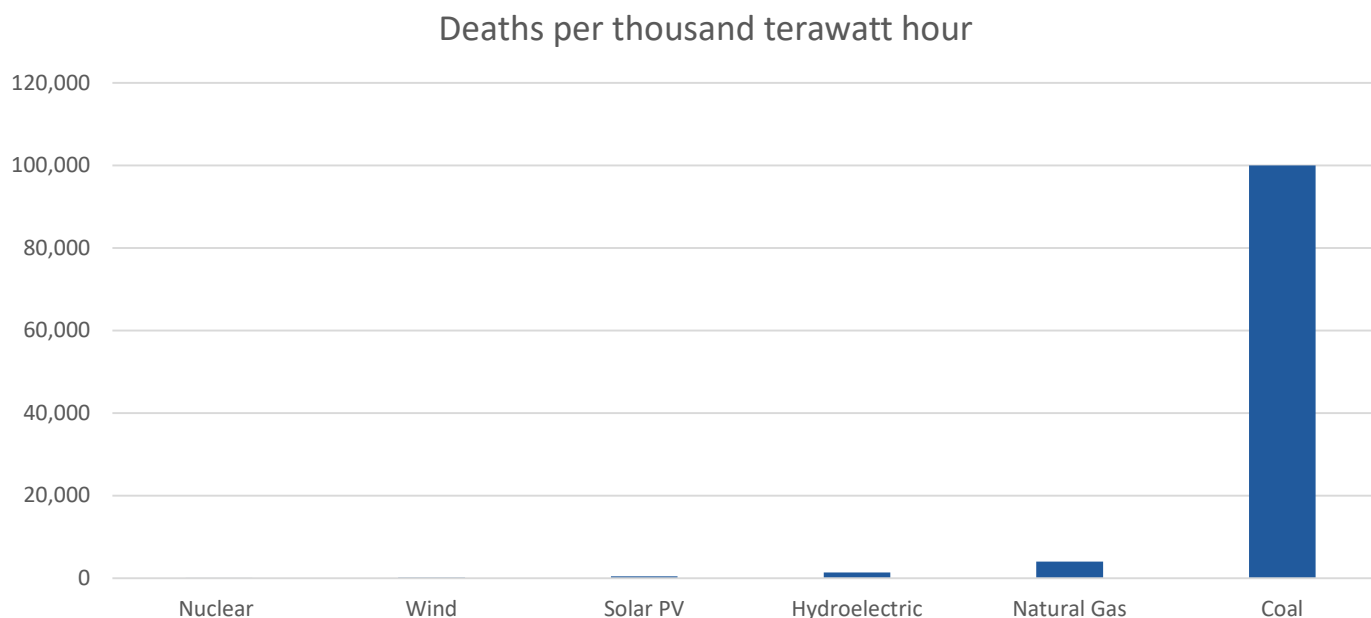
Nuclear power produces electricity with almost no carbon output, the villainous element of global warming.



Source: WNA

# Nuclear Power Is the Safest Way to Turn Your Lights On

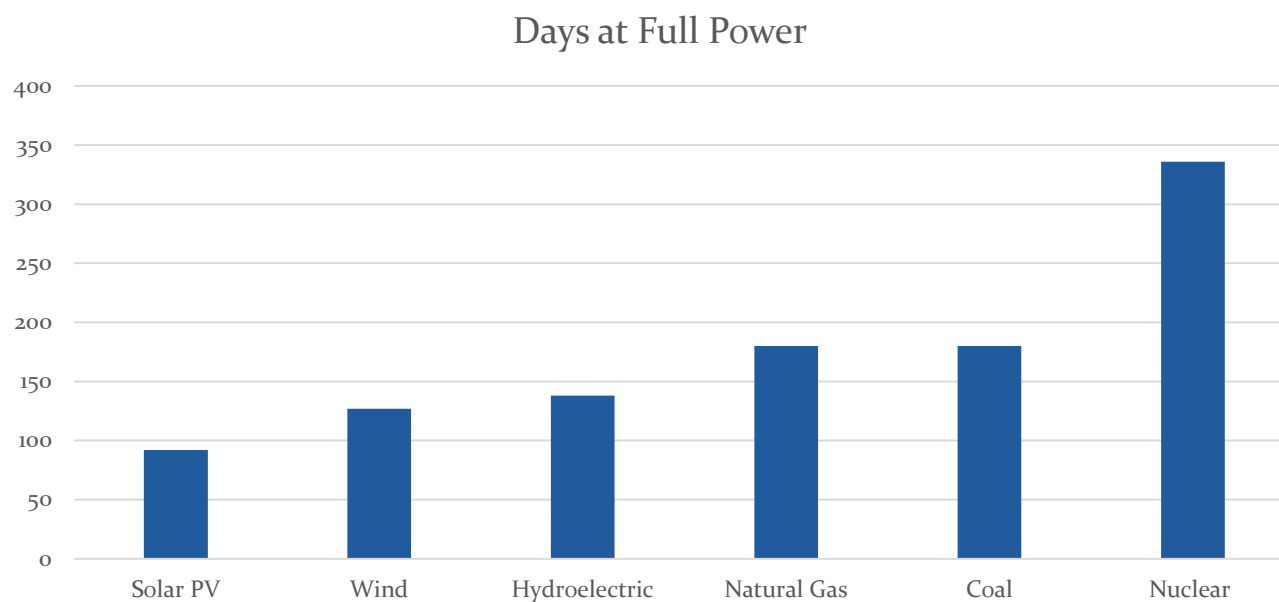
Nuclear is the safest form of electricity generation



Source: Statista

# Nuclear Power is Reliable Electricity

Nuclear is the unparalleled workhorse of electricity generation

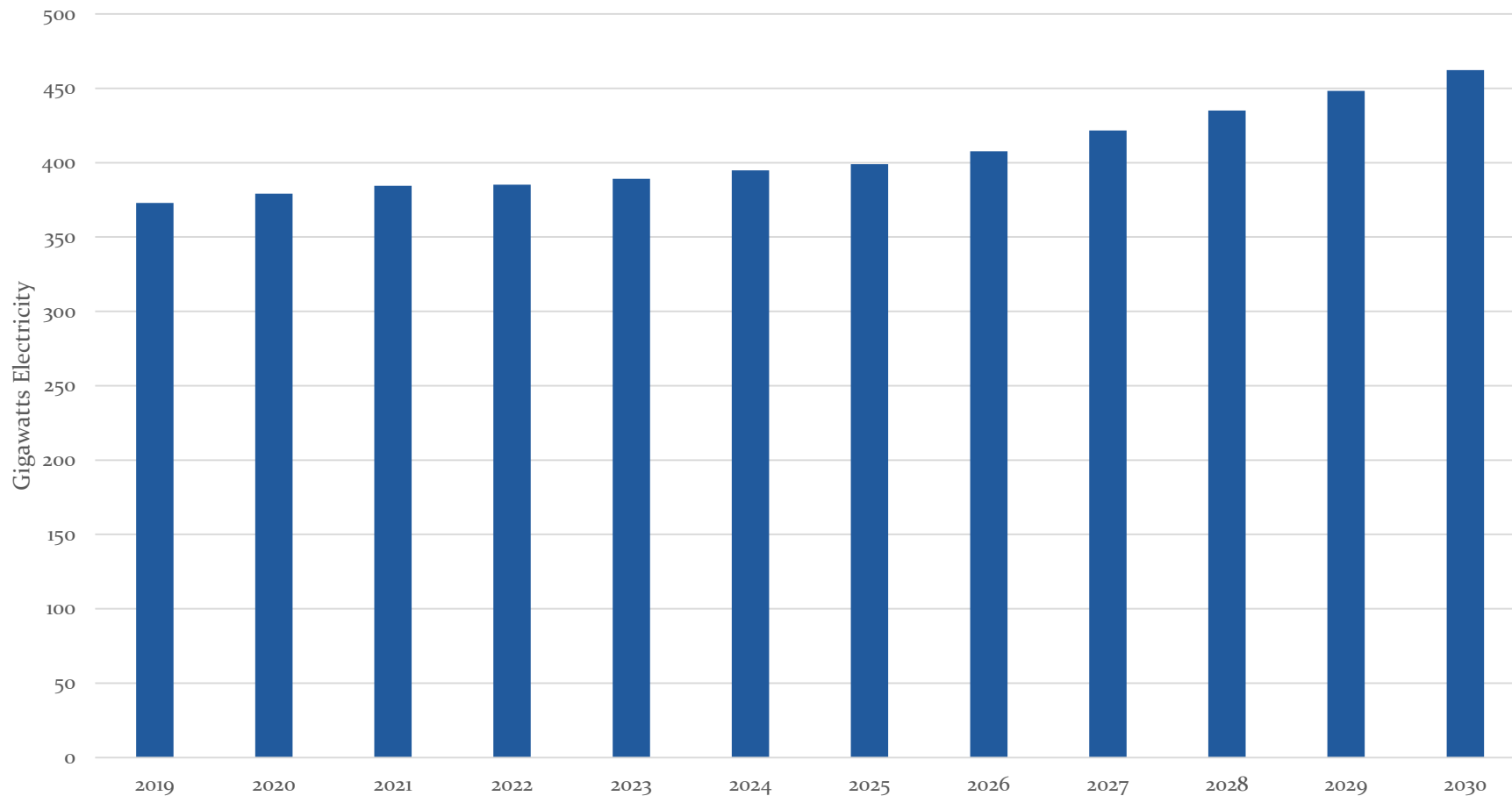


Source: EIA Electric Power Monthly



# Nuclear Power is a Growth Business

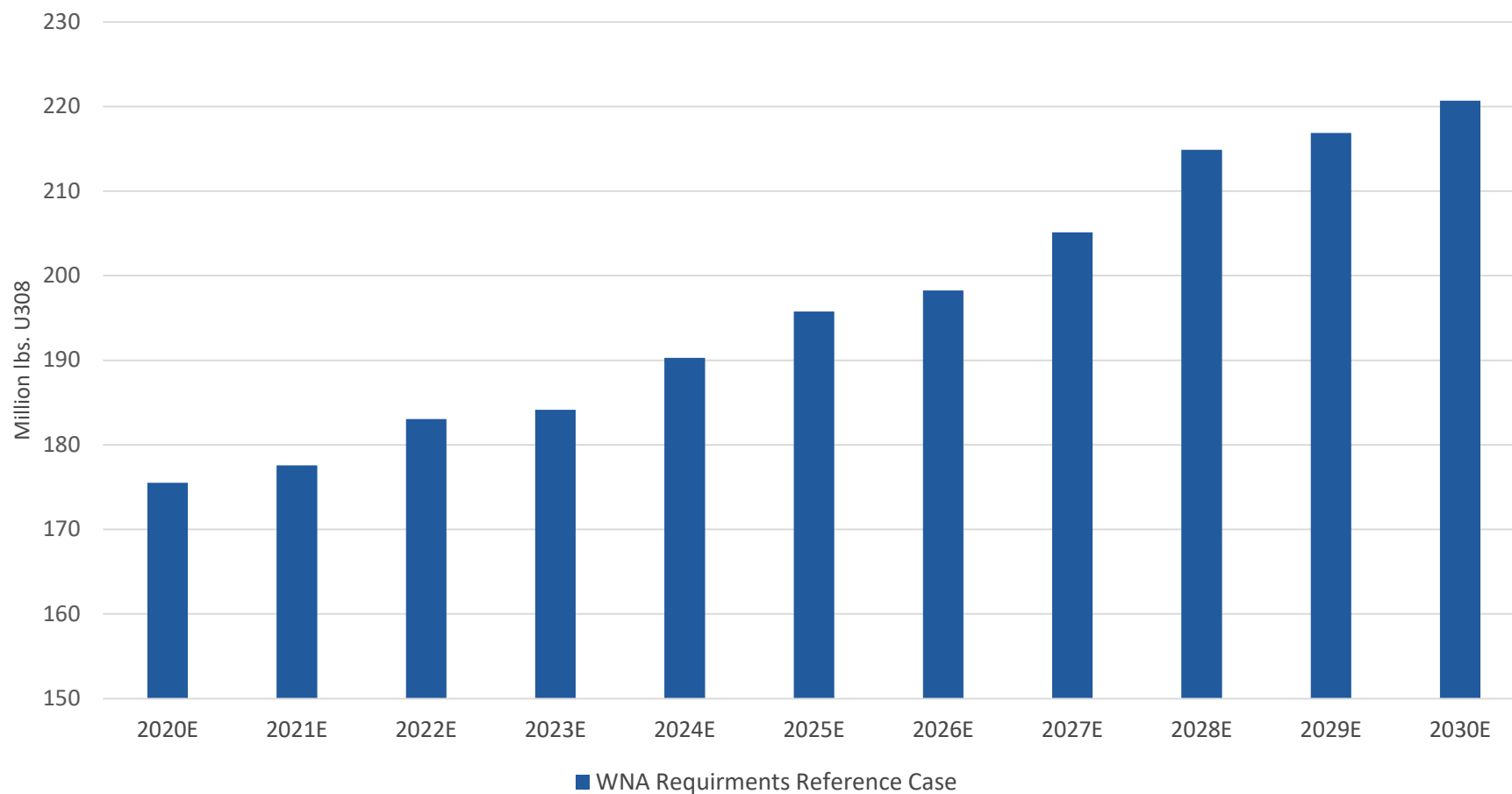
Gigawatts of Nuclear Power



Source: WNA Nuclear Fuel  
Report 2019 Reference Case

# And So Is The Feedstock - Uranium

Uranium Requirements

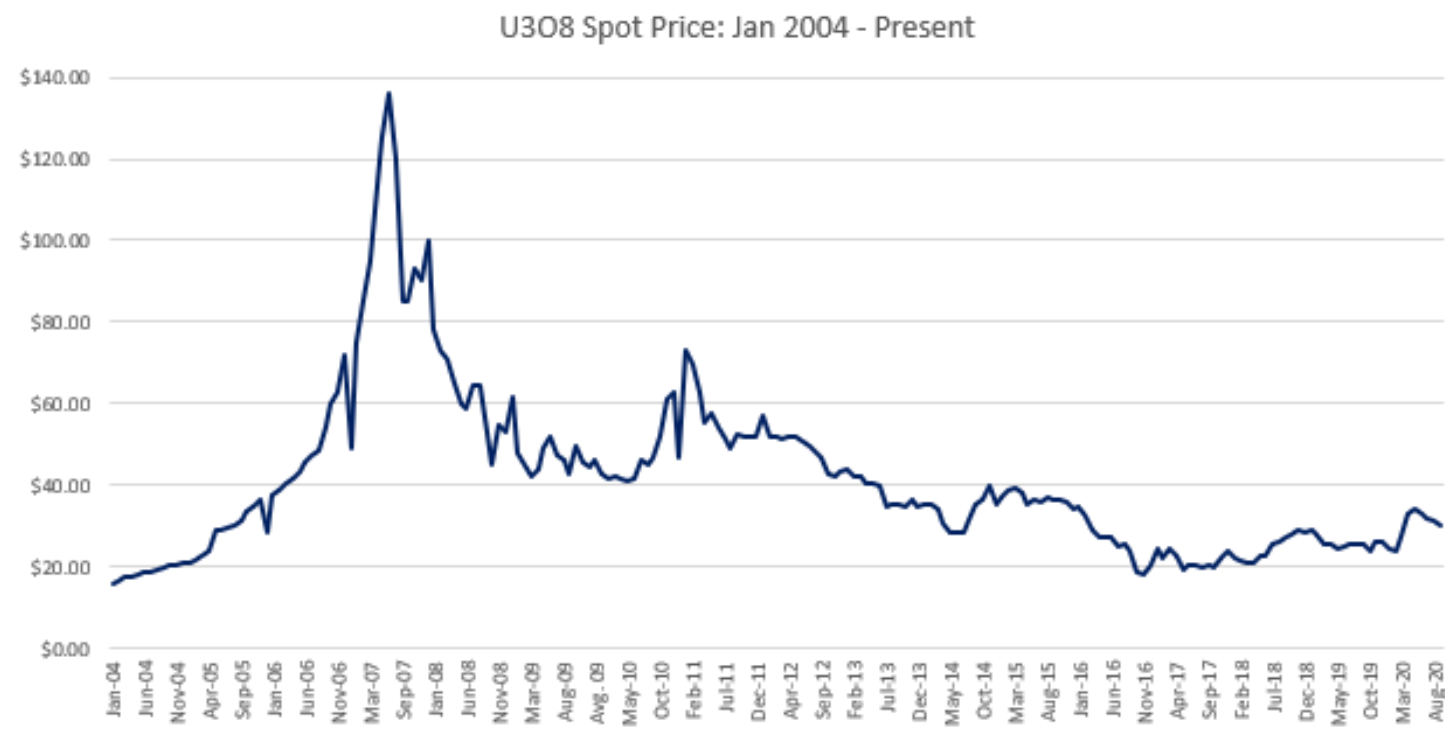


Source: WNA

# The Uranium Investment Case

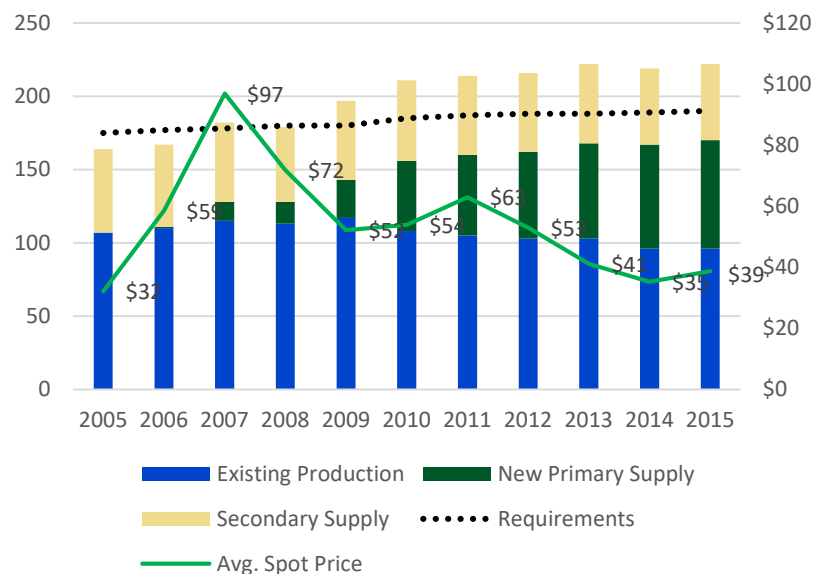
- The Uranium Sector Offers Exceptional Asymmetric Risk/Reward
- Major dislocation between the math and the narrative.
  - Asymmetry due to very complex and opaque nuclear fuel cycle
  - Due to complexity and perceived negatives of nuclear, few bother doing the work
  - Industry Consultants – recency bias married with non-commercial supply analysis
- Small and Significantly Underfollowed Equity and Physical Commodity Sector
  - Hardly any institutional ownership and even most commodity analysts don't follow
  - Investor fatigue from multi-year downturn
  - Price Collapsed ~90% from peak to trough in 2017. Quietly up 66% since then.
  - Mining equities fell even more
  - Few ways to play the turn. Number of miners, developers and explorers from 500 to 40 and many of those are not investable.

# A History of Boom/Bust Prices



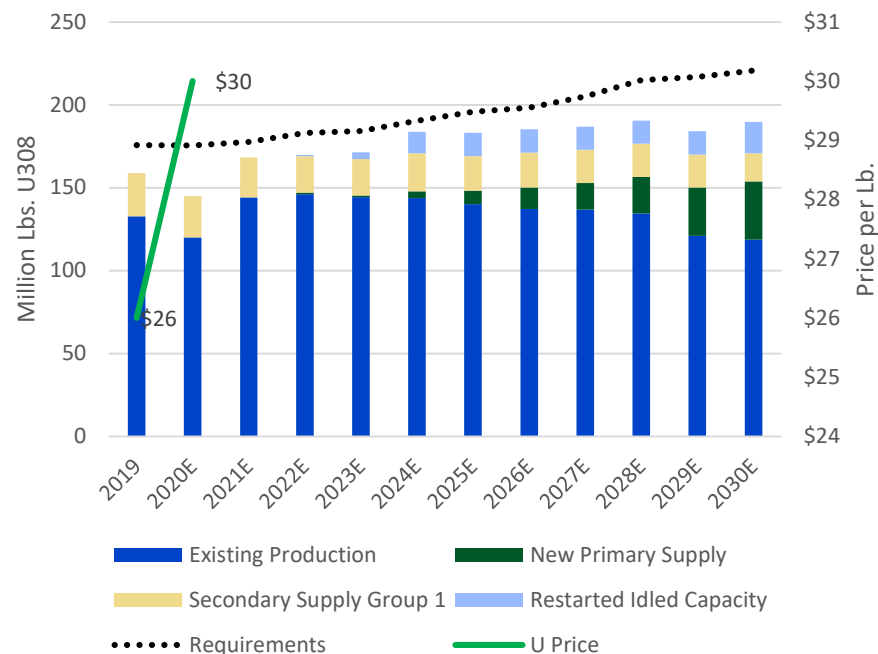
# Materially Better Set-Up Now vs. Prior Bottom

## Forecast Then – No Deficits



Source: 3<sup>rd</sup> party consultant reports

## Forecast Now – Deficits



Source: 3<sup>rd</sup> party consultants and WNA  
Nuclear Fuel Report 2019

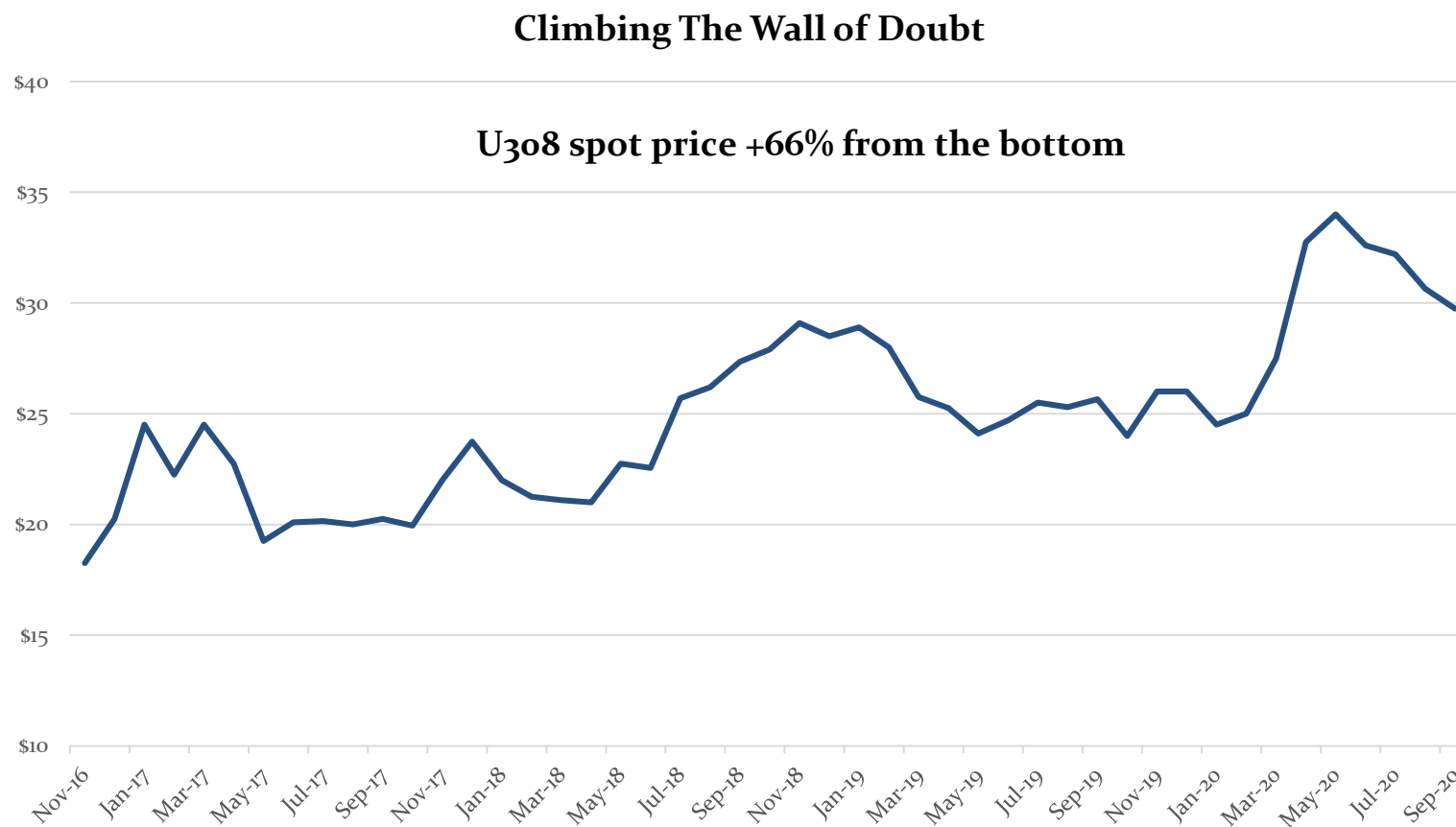
# Let's Talk Uranium

- How the Uranium Market Got Here and How The Past Impacts the Future...
- The Uniqueness of the Sector. Understanding the Market Structure is Critical...
- The Market is Transitioning and Climbing the Wall of Worry....
- Let's Lay Out the Math....

# How Did Uranium Prices Get Here?

- March 2011 Fukushima Disaster
  - Japan accounted for 13% of world uranium demand
  - 54 reactors accounted for nearly 30% of its electricity generation
  - Reactors shut down soon after the accident
  - Prolonged safety inspections for all 54 reactors, 12 permanently closed
- Investor interest dried up
- Kazakhstan, the largest and lowest cost producer, continued to ramp supply
- Cameco brought significant supply online into an oversupplied market in 2014
- Protected by Long-Term contracts, producers were slow to make necessary cuts
- Weak demand led to increased secondary supply from enrichment companies

# A Bull Market in The Uranium Price is Quietly Underway





# What a Difference A Few Years Makes

## Q4 2016: Bottom

- No major supply cuts
- Commercial inventories high
- Secondary supplies plentiful
- Structural surplus
- Carry-trade reduced need for LT contracting
- Uncovered demand low

## Q3 2020: Today

- 25% of global supply cut
- Commercial inventories in-line
- Secondary supplies declining
- Structural Deficit - to shrink the deficit, new mines are needed and most mines on standby need prices north of \$50 per lb.
- Carry trade receding
- Uncovered demand ~ similar to last cycle lows

# Ignore The Narrative, Mine the Arithmetic Gap

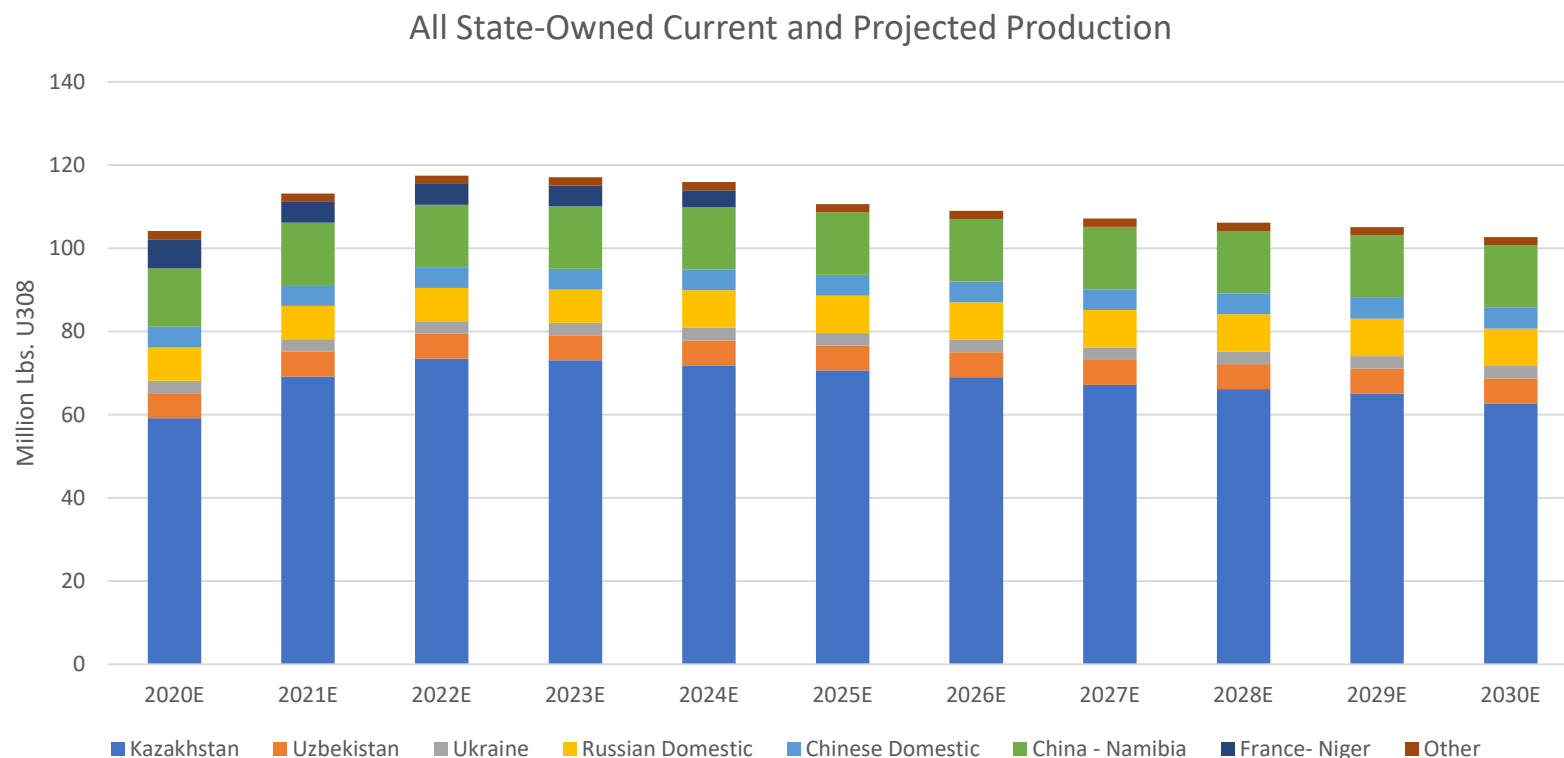
## Bear Case Today

- Production cuts not enough
- Spot isn't high enough
- Mines easily turned back on
- Underfeeding is an overhang
- Inventories still too big
- China slowing down new builds

## Arithmetic Today

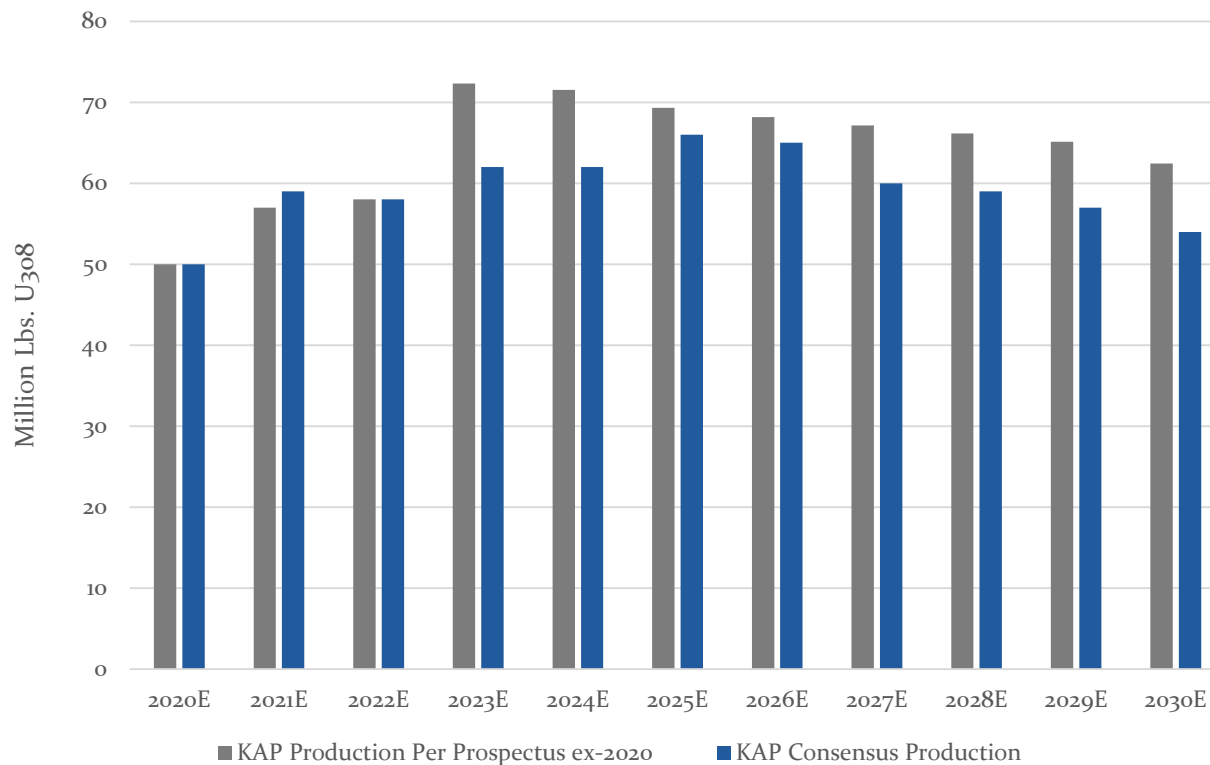
- Production Cuts = Supply Deficit
- Price is Everything. Need \$50+ or mines stay shut
- New mines needed to fill deficit
- Underfeeding impact is past peak
- Inventories drawing down
- China New Builds Accelerating

# Understanding Kazakhstan – The ~40% Market Share Giant



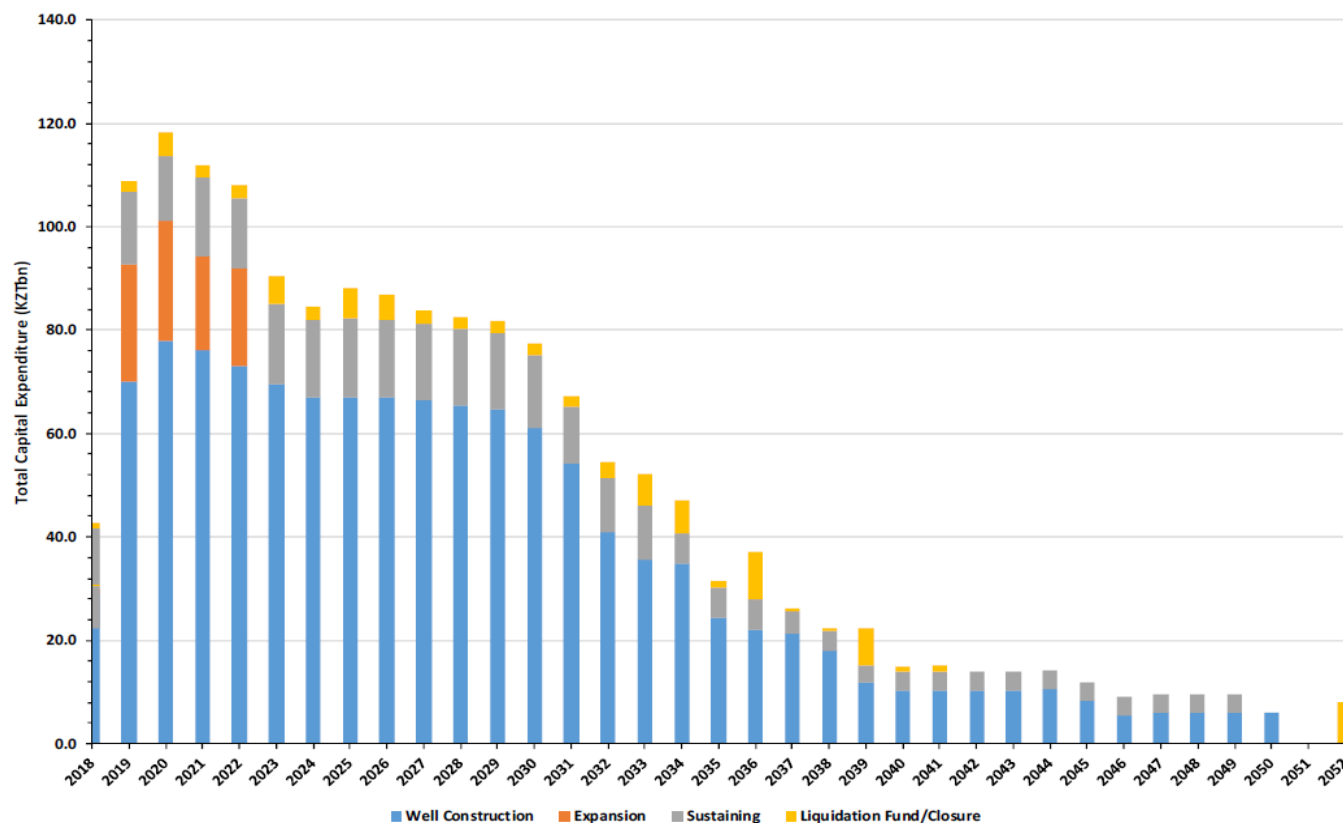
Source: 3<sup>rd</sup> party research, various  
company reports

# Kazakh Production Peaks in 2023



Source: 3<sup>rd</sup> party research, sell-side, Kazatomprom IPO document

# Which Squares With Its Capital Spending Plans



Kazatomprom IPO Document

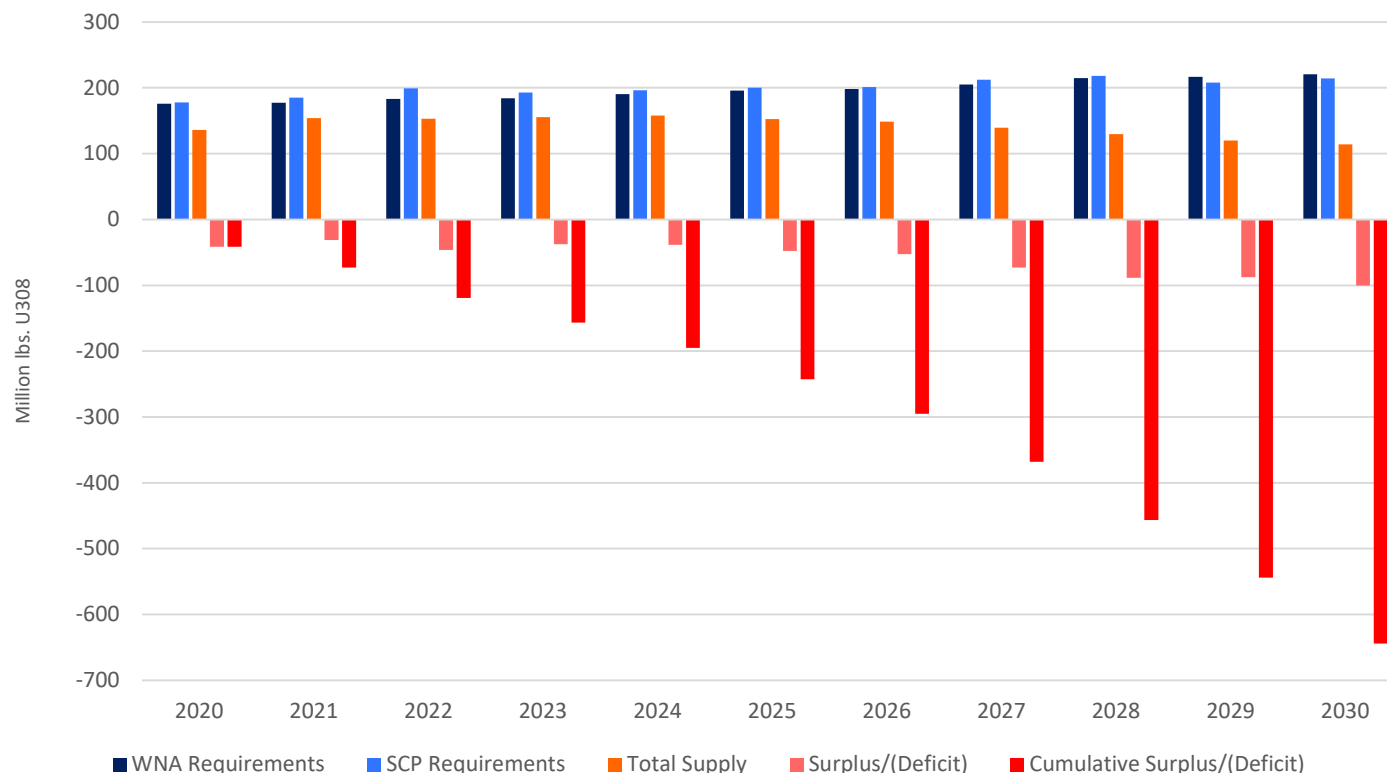
## Even Kazatomprom Acknowledges It Can't Fill The Deficit

“The uranium story is on the supply side...by 2030 we will need two new Kazatomprom's, which presents an interesting challenge, where are those pounds going to come from?”

*Riaz Rizvi, Chief Commercial Officer, Kazatomprom  
Kazatomprom Capital Markets Day – September, 2019*

# Massive Deficits < \$45/lb.-\$50/lb. With Kazakh's At Consensus Production

Supply/Demand If L-T Prices Stay Below \$45

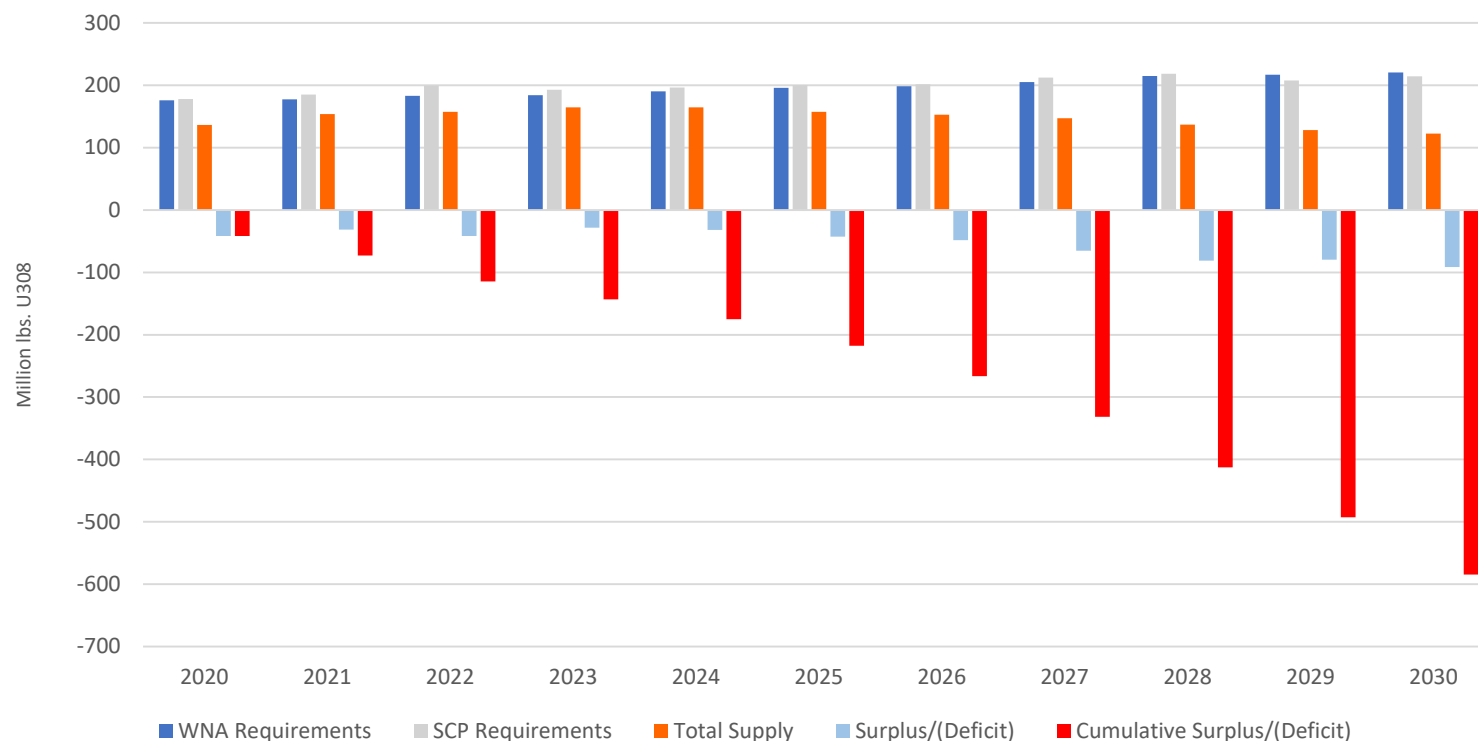


- Kazakh's at current market expectations
- Includes all State-owned production i.e., Kaz., Uzbek., Ukrainian, Russian, Chinese, French, and Indian.
- Includes Cigar Lake back in 2020.
- Includes Kazakh's back in 2020.
- McArthur River doesn't come back.
- No pre-COVID C&M mines back.
- No new mines built.

Source. Company reports, 3<sup>rd</sup> party research, SCP estimates, WNA 2019 Fuel Report

# Massive Deficits < \$45/lb.-\$50/lb. With Kazakh's At FULL Production

Supply/Demand If L-T Prices Stay Below \$45 – Kazakh's Full Run-Rate



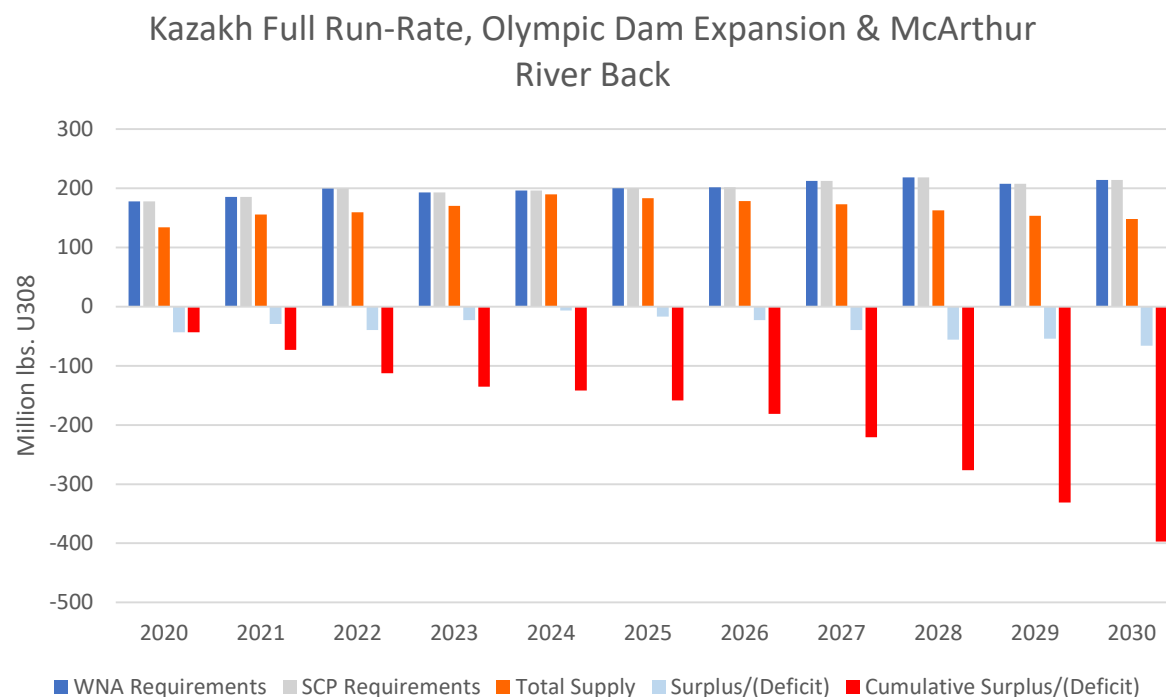
- Kazakh's at Full run-rate from '23-'30
- Includes all State-owned production i.e., Kaz., Uzbek., Ukrainian, Russian, Chinese, French, and Indian.
- Includes Cigar Lake back in 2020.
- Includes Kazakh's back in 2020.
- McArthur River doesn't come back.
- No pre-COVID C&M mines back.
- No new mines built.

Source. Company reports, 3<sup>rd</sup> party research, SCP estimates, WNA 2019 Fuel Report



## Moving on From Kazakhstan

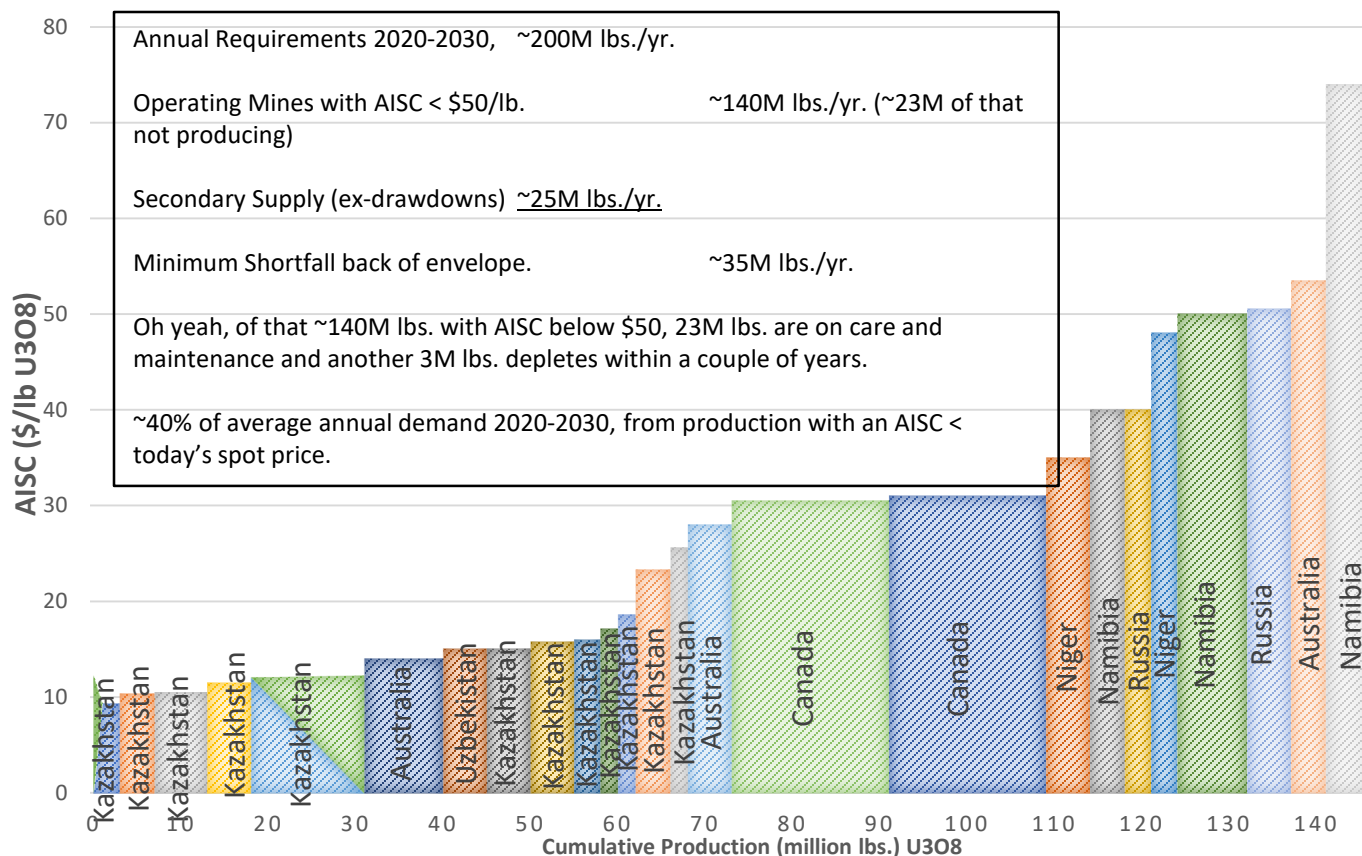
# Massive Deficit < \$45/lb. w/ Kazakh's at Full, McArthur Back, OD Expansion



Source. Company reports, 3<sup>rd</sup> party research, SCP estimates, WNA 2019 Fuel Report

- McArthur River back in 2023.
- Olympic Dam expansion added (highly uncertain).
- Includes all State-owned production i.e., Kaz., Uzbek., Ukrainian, Russian, Chinese, French, and Indian.
- Includes Cigar Lake back in 2020.
- Includes Kazakh's back in 2020.
- No pre-COVID C&M mines back(except McArthur).
- No new mines built.

# Price is EVERYTHING; Don't Confuse Costs With Required Selling Price

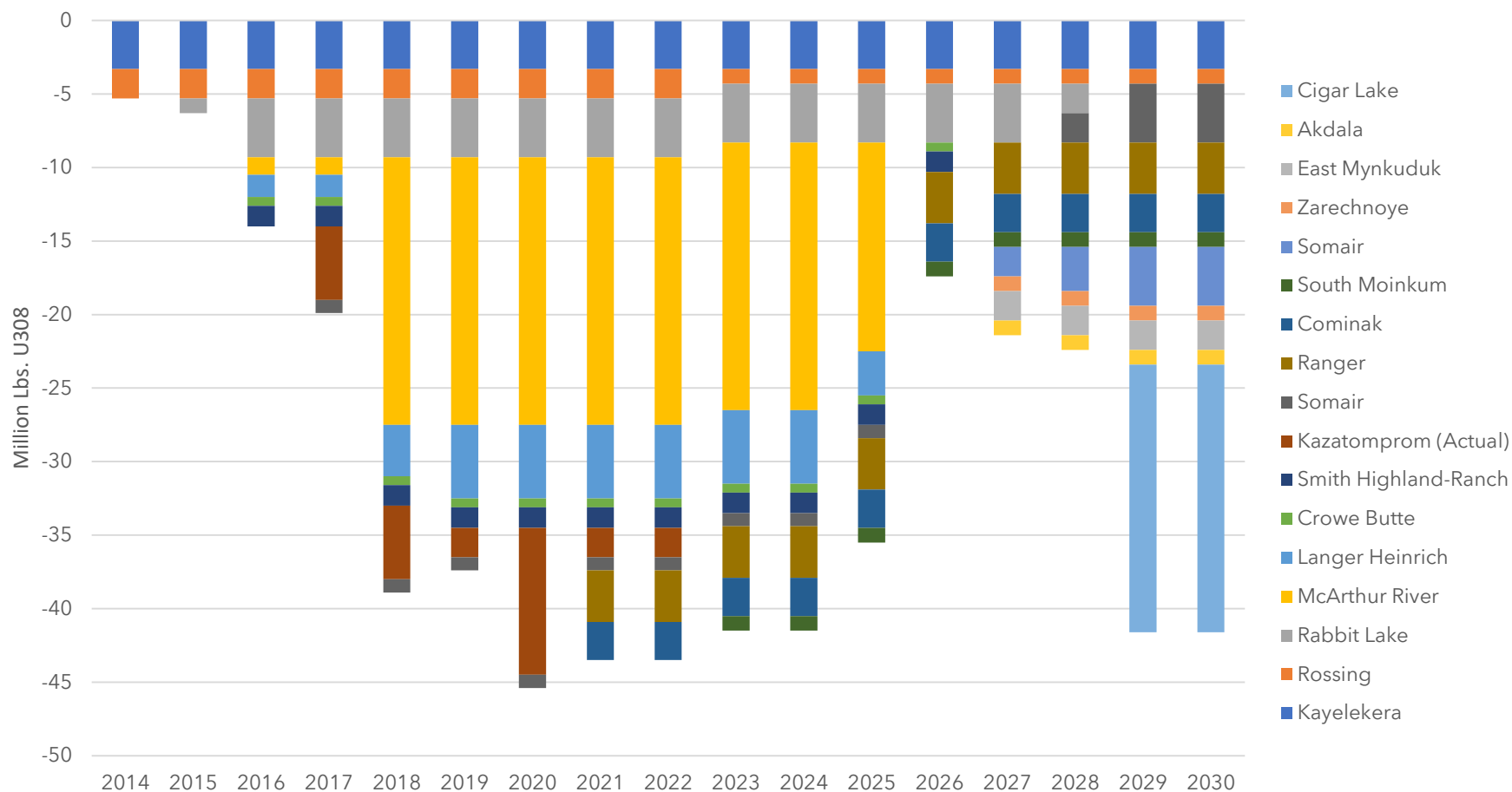


- ~105M pounds from existing mines have an AISC at or below spot price today. This is cost, not where it can be sold to account for profit. That requires a much higher price.
- Of that, pre-COVID, production would have been ~ 90M lbs. from that cohort. Price matters.
- ~140m lbs. have an AISC below \$50. Again, that is cost. Not selling price required.
- Annual Demand 2020-2030 ~200M lbs. per year.
- At today's spot price of \$33, only about 100M lbs. have an AISC at or below that price.
- Only ~80M lbs. being produced there. (44% of next year's demand).

Source: SCP estimates and various company reports

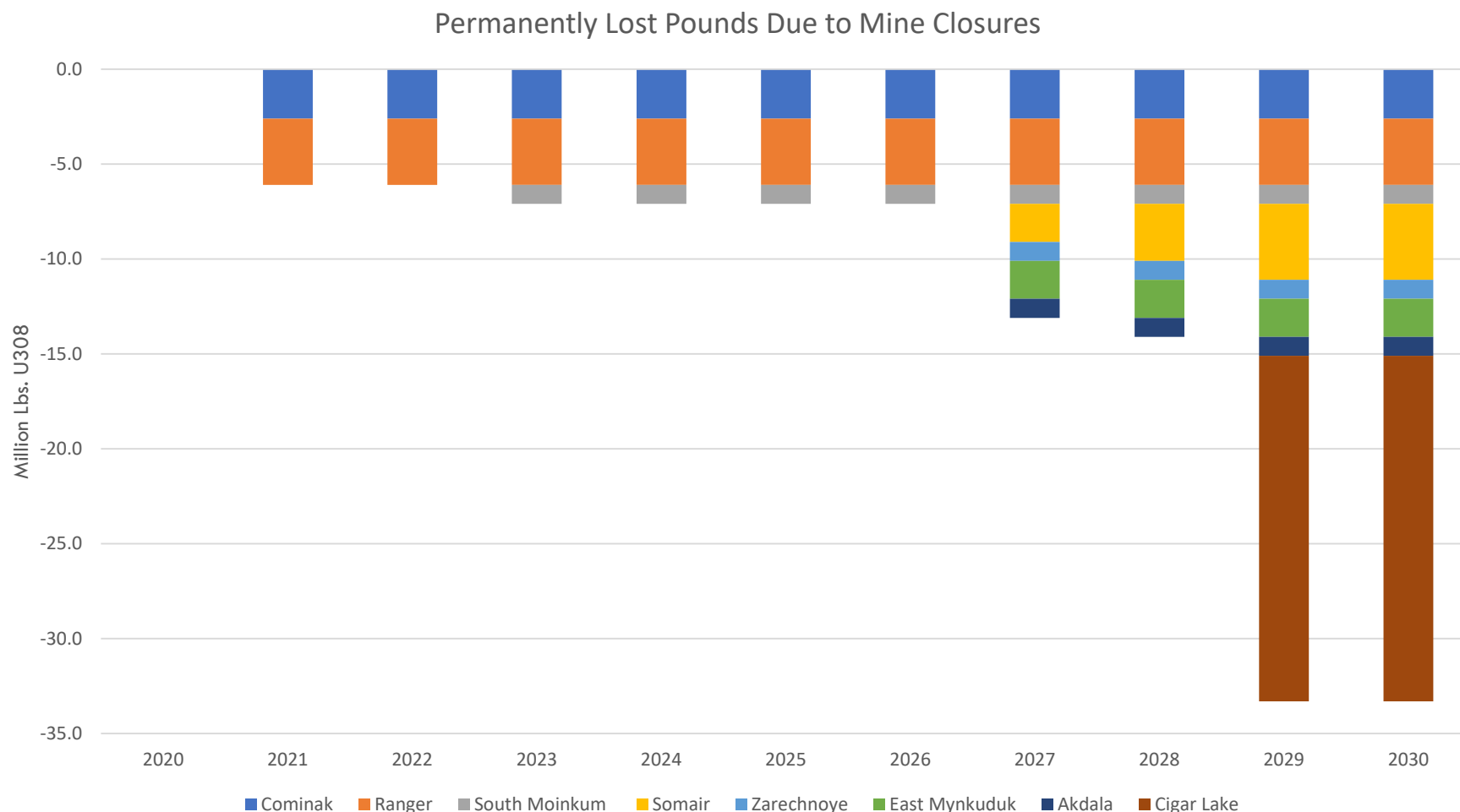
# Price is EVERYTHING, As Witnessed By Huge Production Cuts

Production Cuts and Planned Closures



Source: Company reports, SCP Estimates and pre-COVID

# And Some of Those Lbs. Are Permanently Gone Due To Depletion

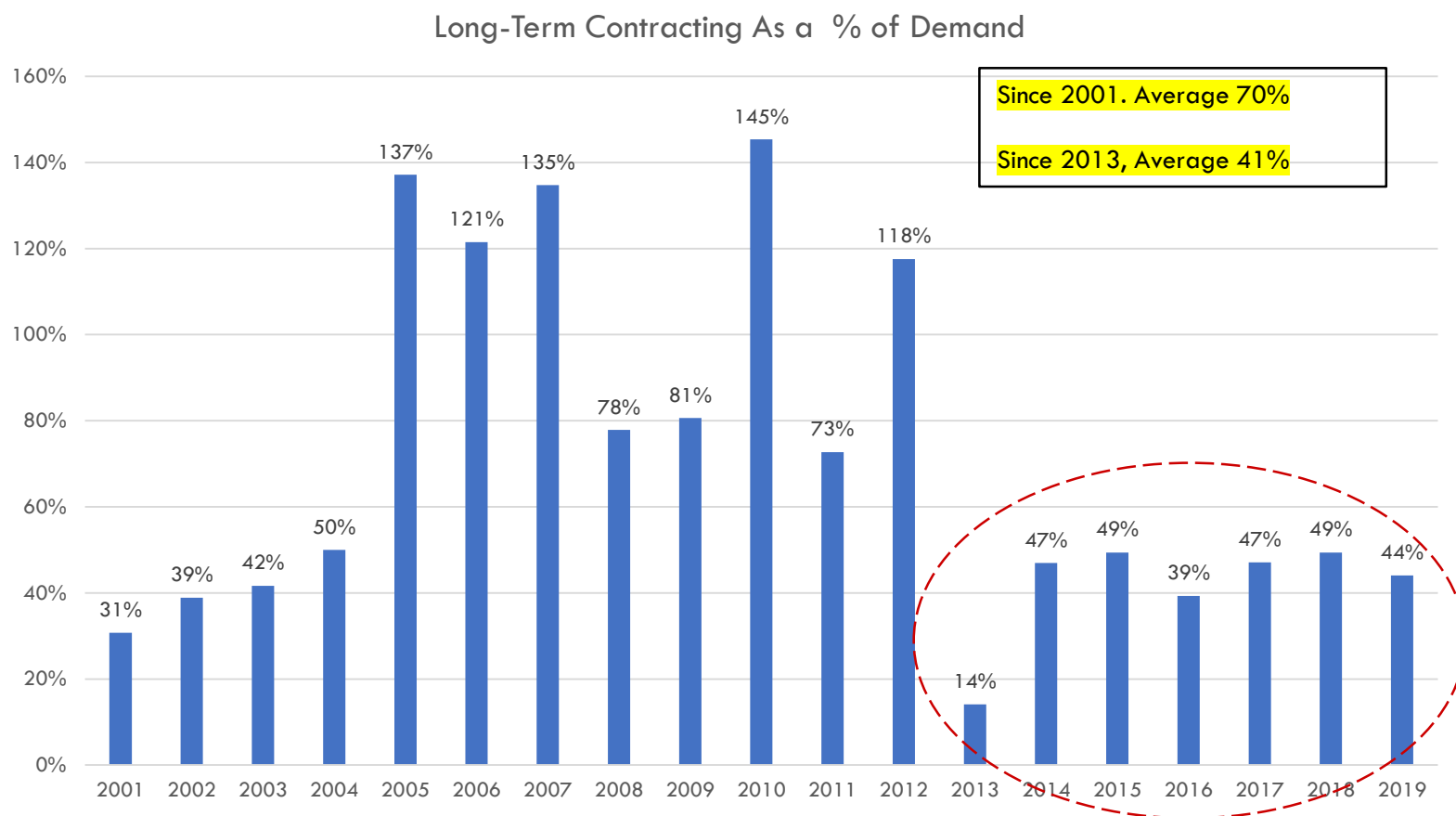


Source: Company Reports and SCP Estimates

# Price is EVERYTHING: The Solution To Staggering Deficits

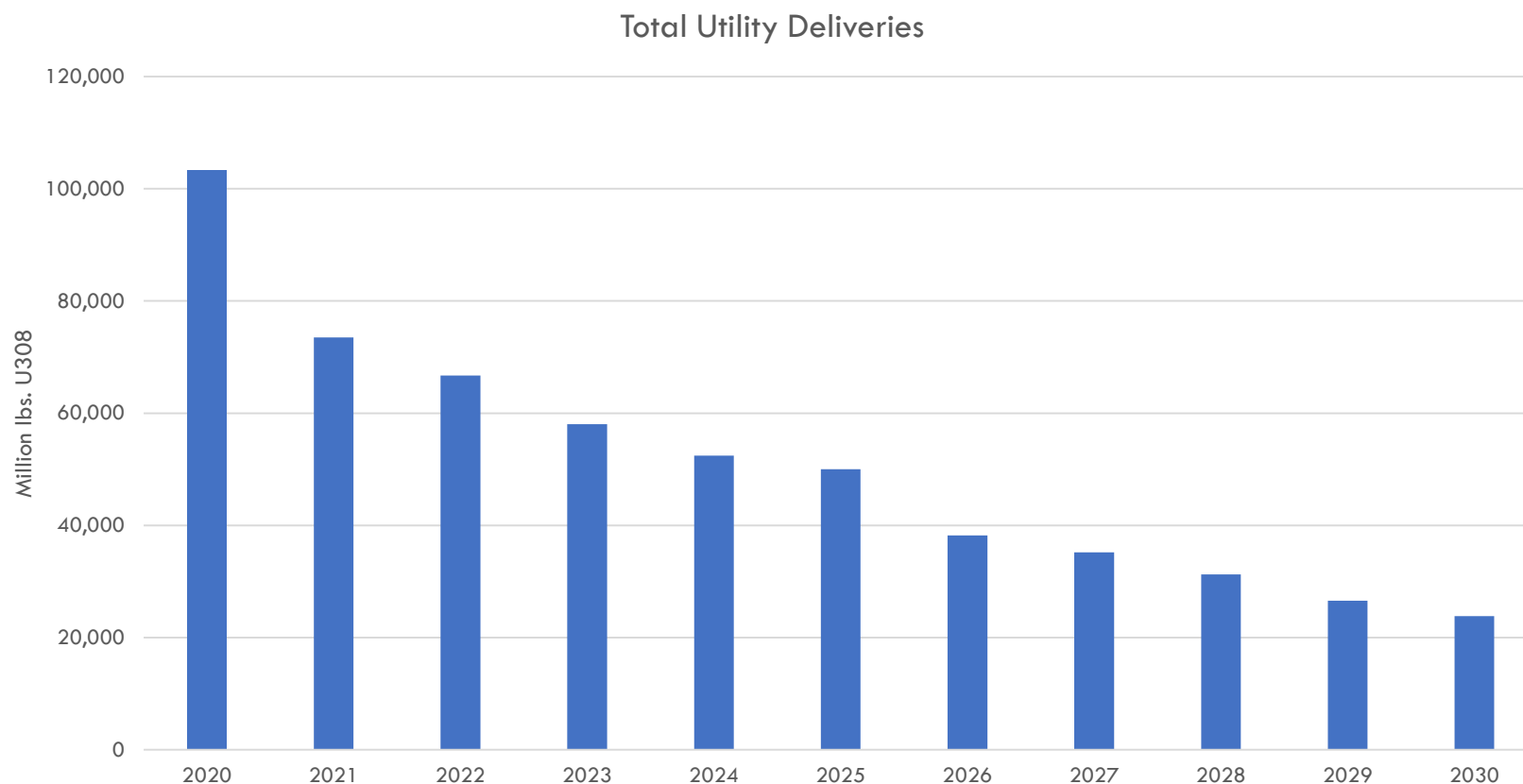
- \$55 LT Price is a starting point to incentivize new production and motivate most producers to contemplate bringing back mines from care and maintenance.
- But that won't eliminate the deficits, it can only reduce them. Much higher prices than \$55 are needed to bring the market into balance AND enable utilities to re-stock.
- The deficit horse left the barn already due to contracting apathy. Risk has transferred from suppliers to nuclear utilities.

# LT Contracting Has To Start As Fallen Well Short of Consumption



Source: Various uranium mining company annual reports and 3rd-party Reports

# While Global Uranium Deliveries Are Declining Precipitously



Source: Various uranium mining company reports. 3<sup>rd</sup>. party research SCP estimates

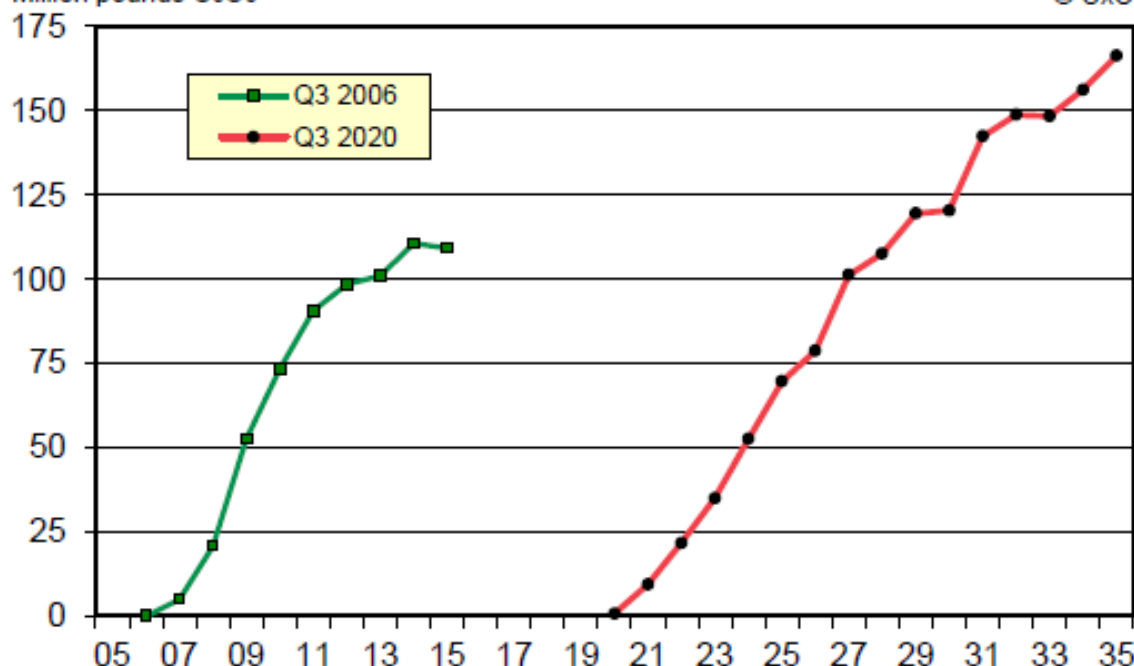


# Utility Security of Supply is Low, We Think History At Least Rhymes

**Figure 3. Utility Uncovered Requirements Estimates, 2006 vs 2020**

Million pounds U<sub>3</sub>O<sub>8</sub>

© UxC



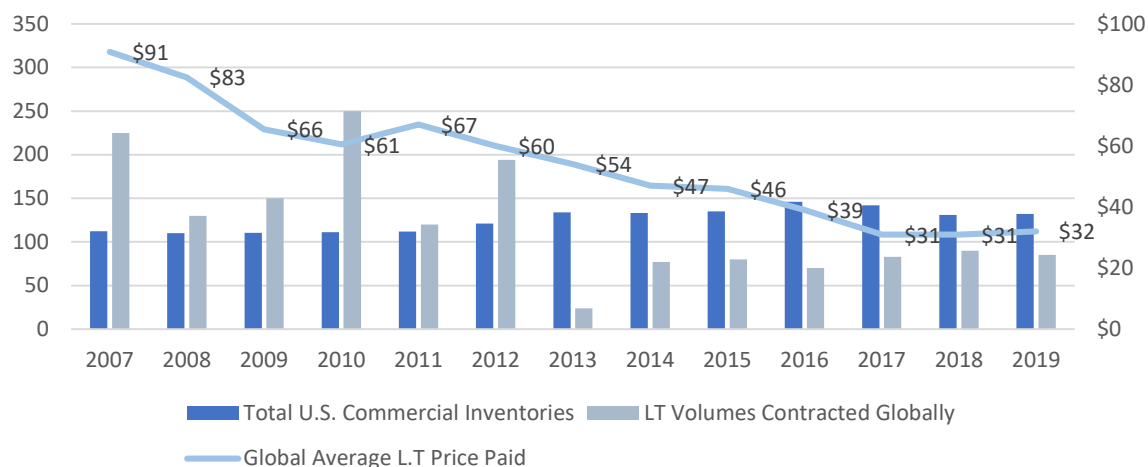
Source: 3<sup>rd</sup> party research

# And Inventories Won't Bail Them Out

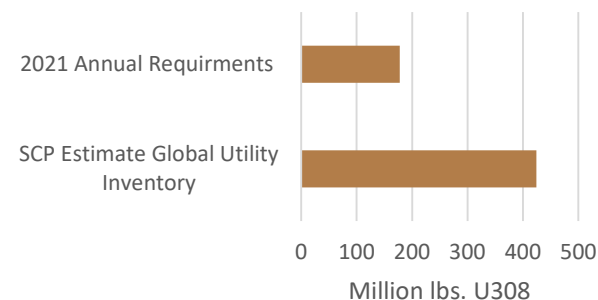
Utilities can pay producers more now or pay them more later – but one way or another, they're going to pay them more. Given security of supply is paramount to utilities and inventory levels not providing a cushion, the math suggests it's much sooner than later.

~2.3 years inventory at normal levels and leave no wiggle room for inventory drawdowns to fill supply deficit gap.

## Price is Everything



## Global Utility U308 Inventory Well Within Normal



Source: 2019 WNA Fuel Report , 2019 EIA marketing Report, SCP Estimates