

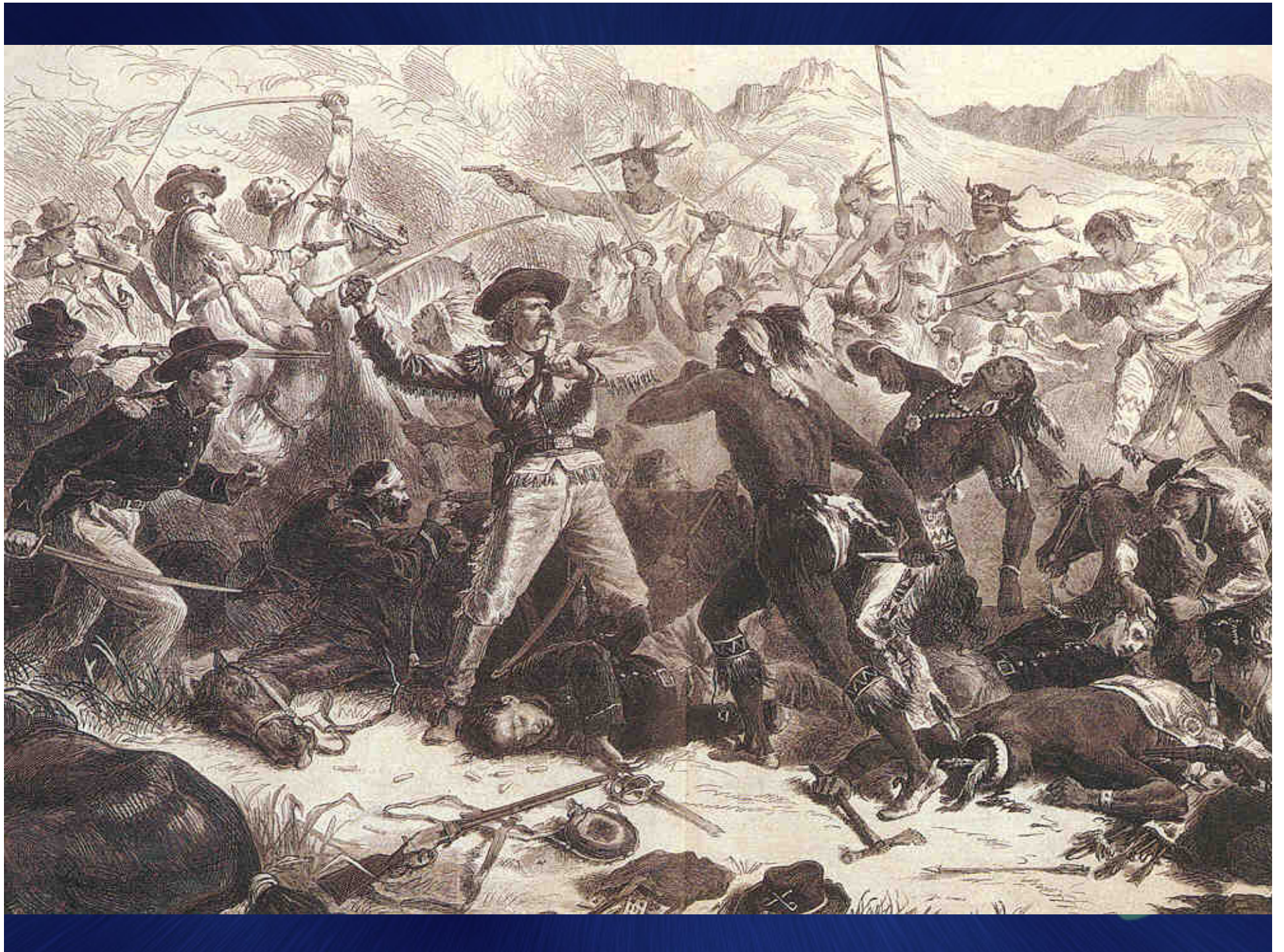


The Conversion Industry: *A 360° Look at Today and Tomorrow*

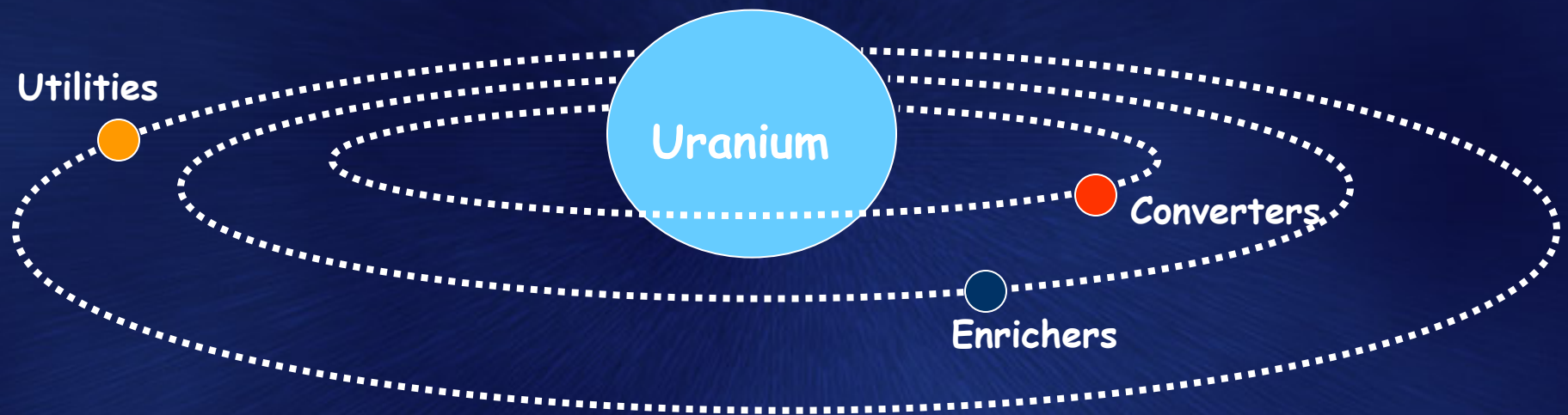
To be presented by
James J. Graham
ConverDyn, President & CEO

NEI International Nuclear Fuel Seminar 2001
Sept. 30-Oct 3, 2001
Captive Island, Florida

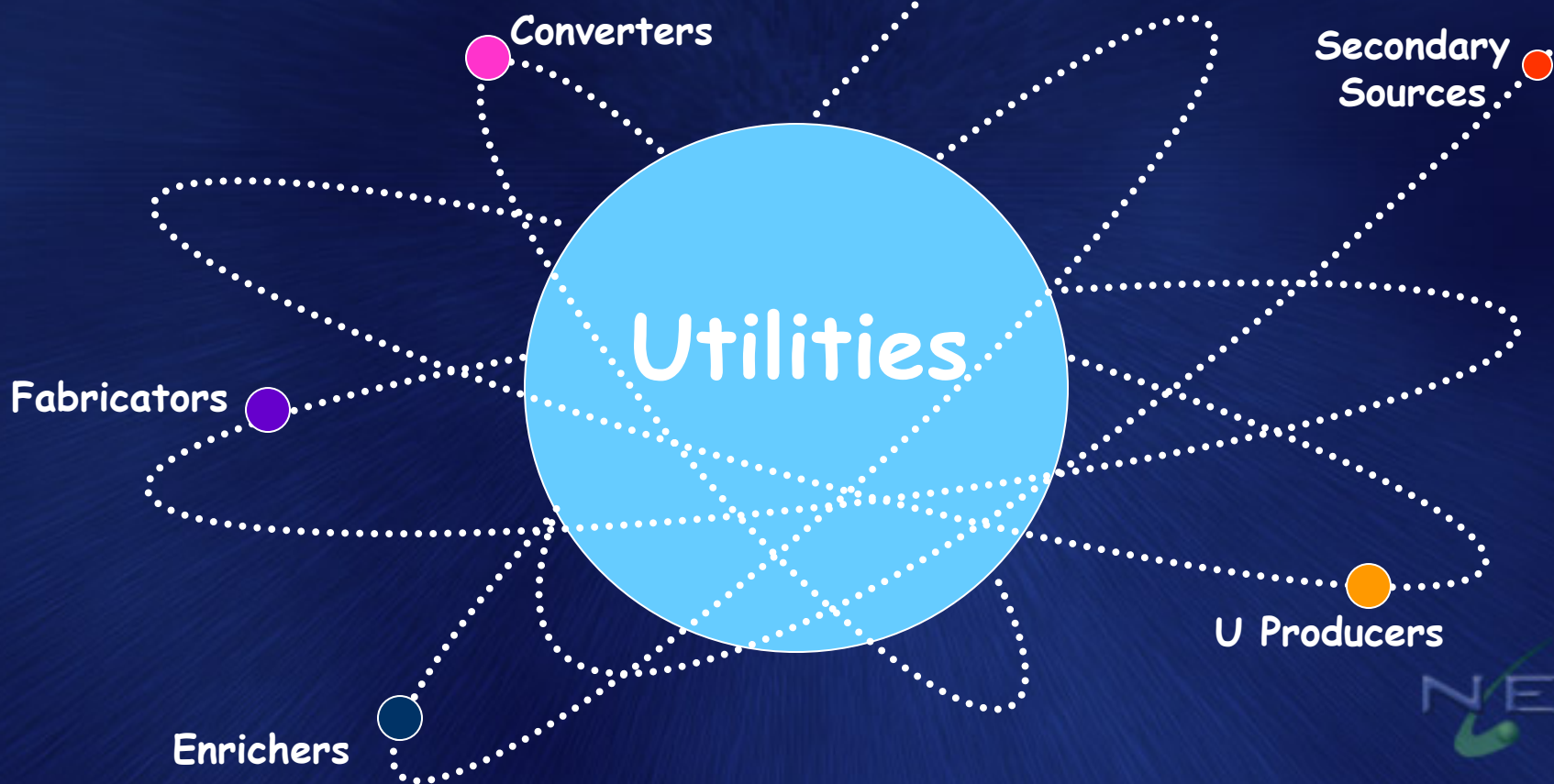




2001 Universe According to Converters



The Nuclear Universe as Viewed by a Casual Observer

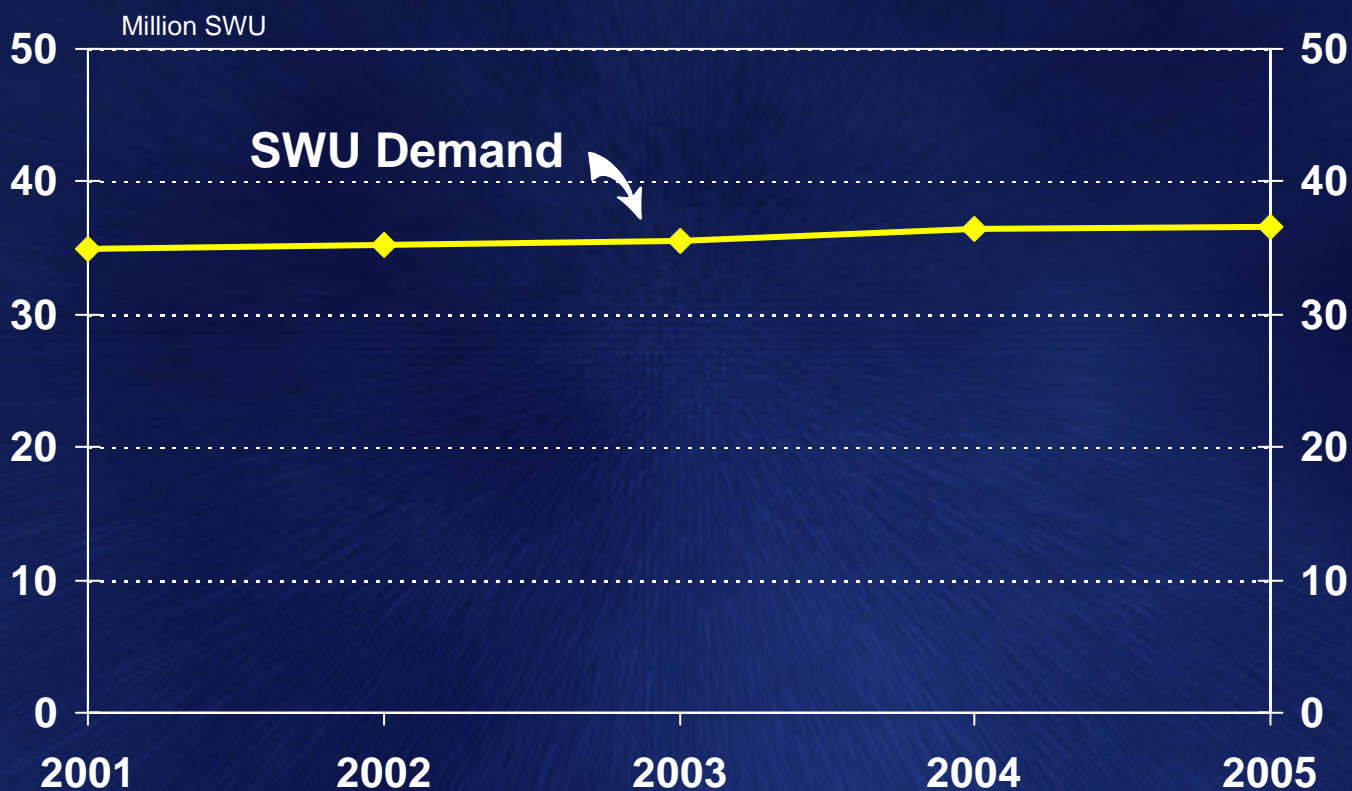


The Nuclear Fuel Market *Today....*

The Normal Look at the Market

- Historically, we have looked at the market starting from uranium and building up to reactor consumption.
- But today is almost 2002, how about a 360° look?
- Let's start with SWU demand!

World SWU Requirements

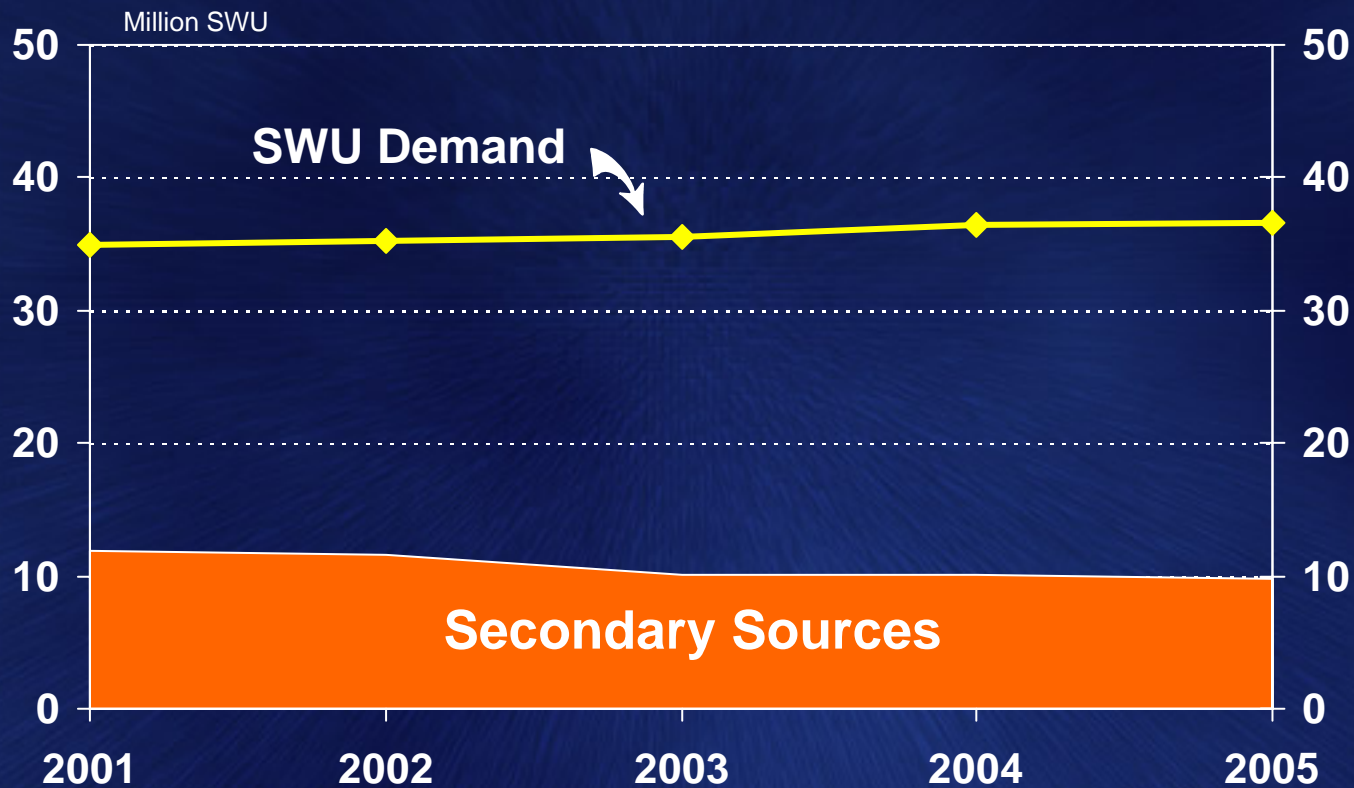


Sources: World Nuclear Association Reference Scenario

Secondary Sources of SWU:

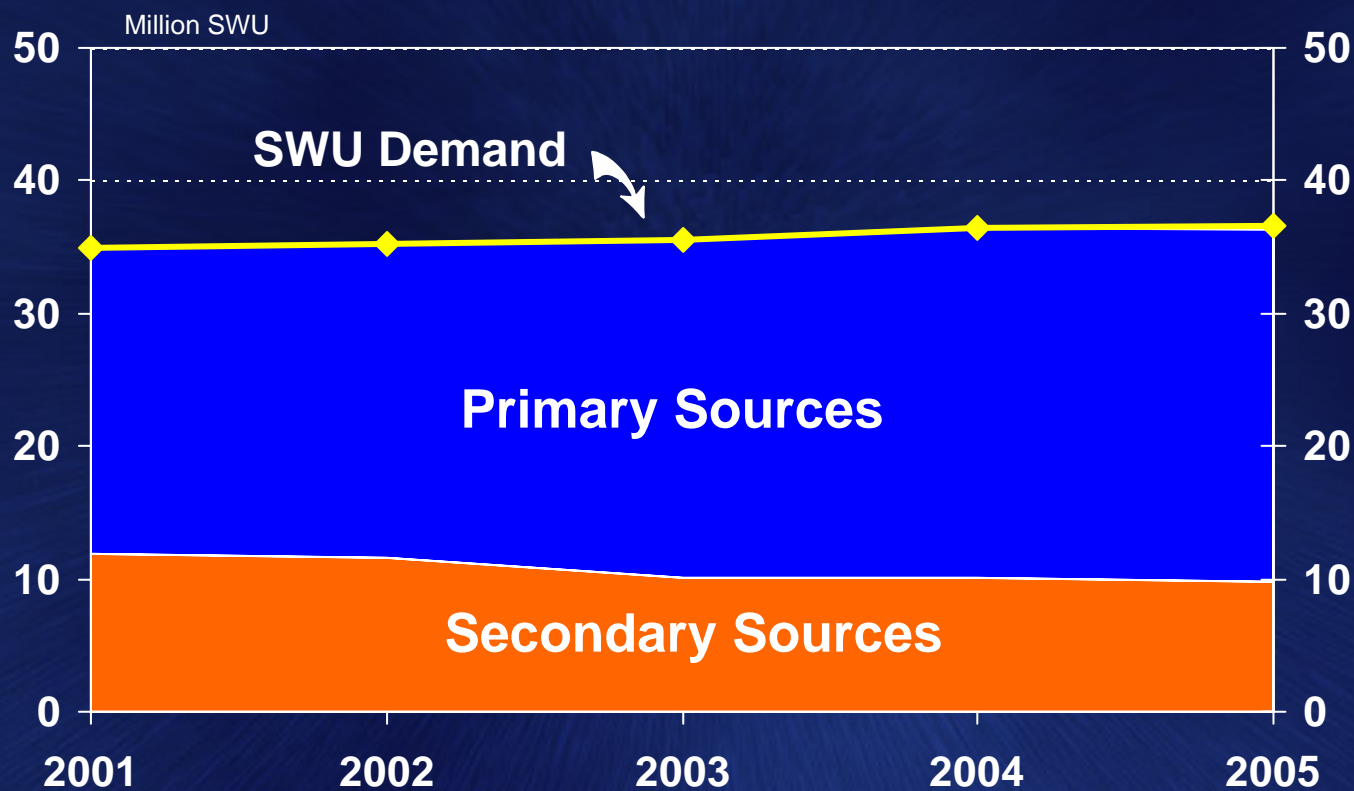
- ▶ Downblended HEU
- ▶ LEU inventories held by governments, utilities and/or enrichers
- ▶ MOX fuel

World SWU Supply

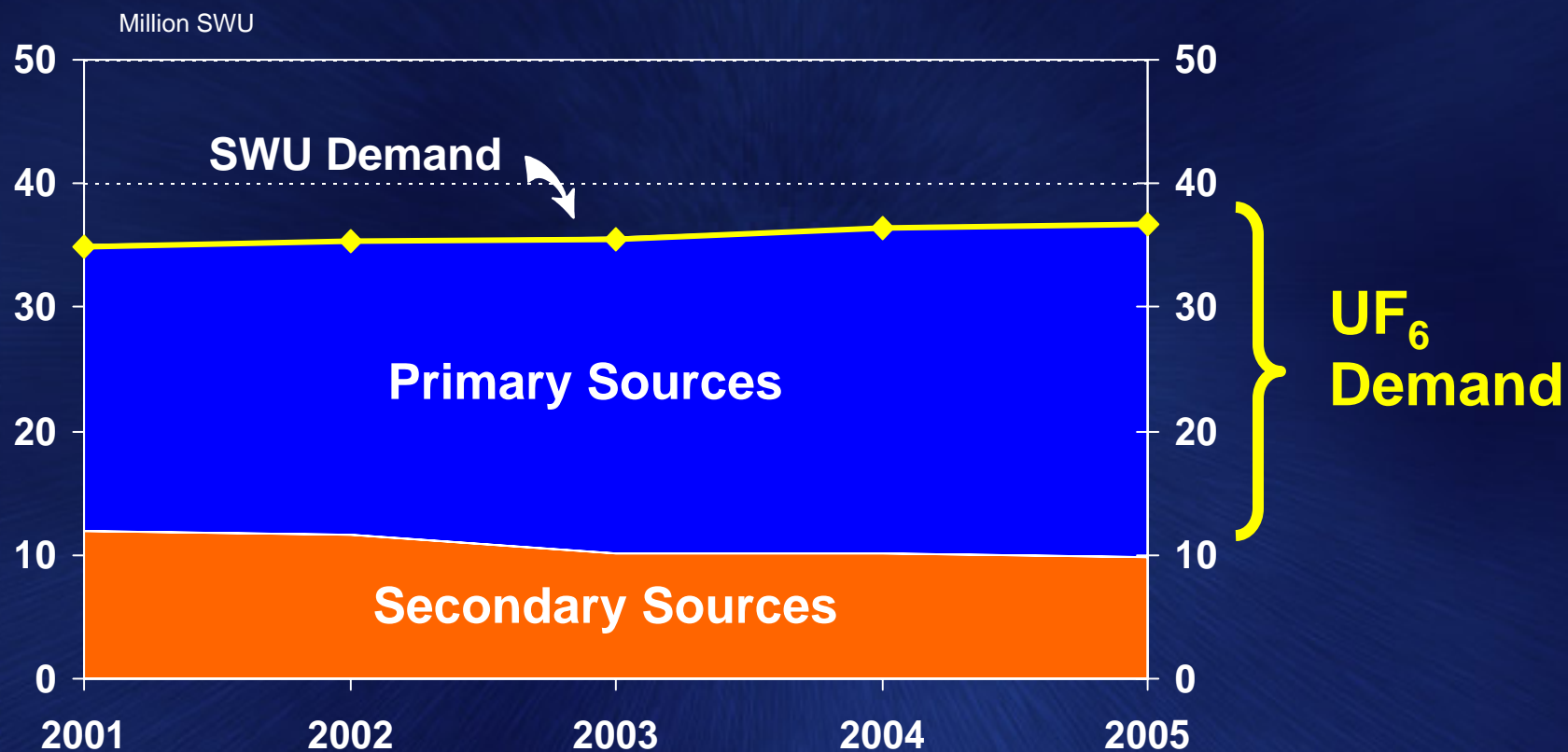


Sources: World Nuclear Association Reference Scenario

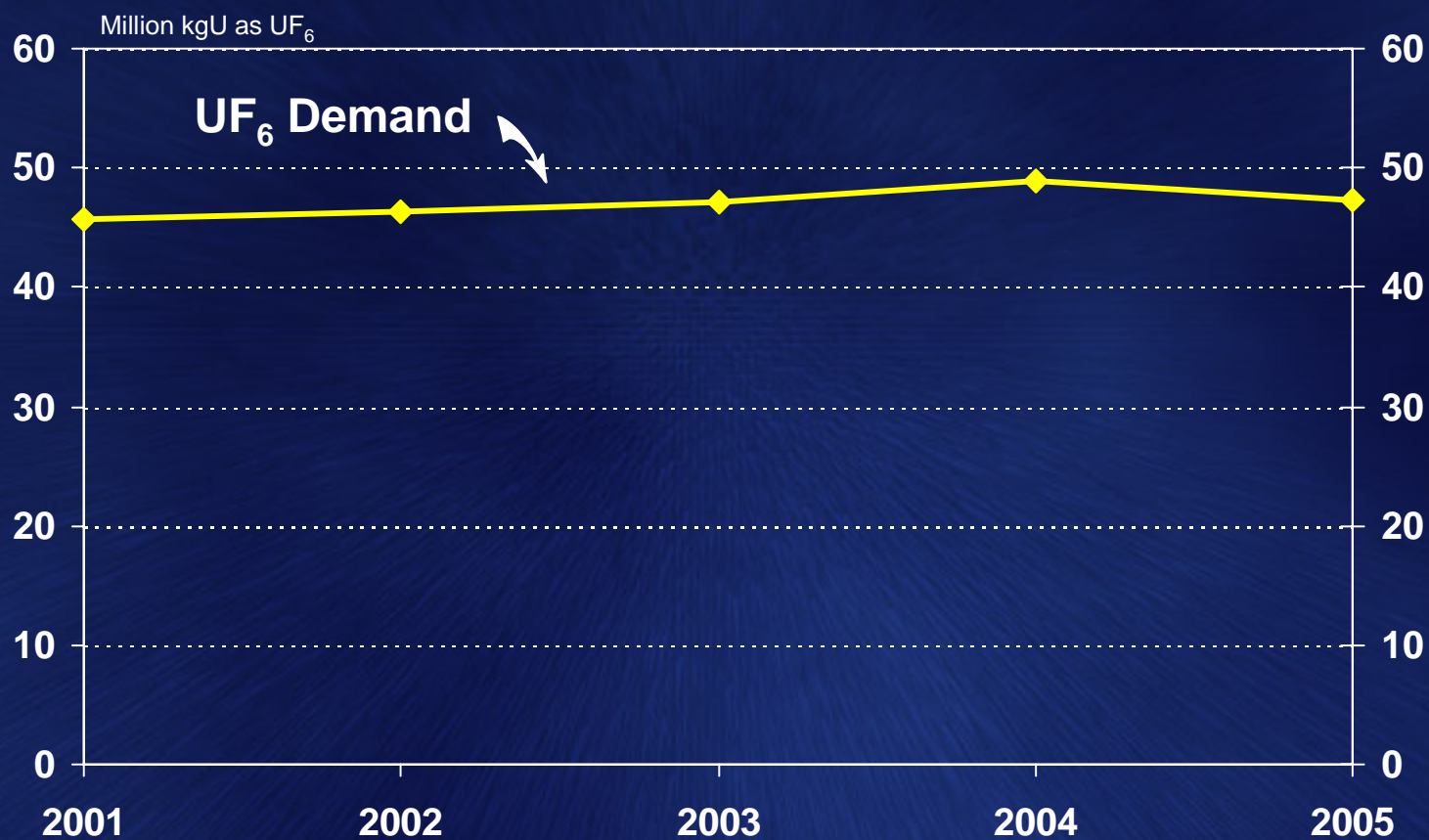
World SWU Supply



World SWU Supply



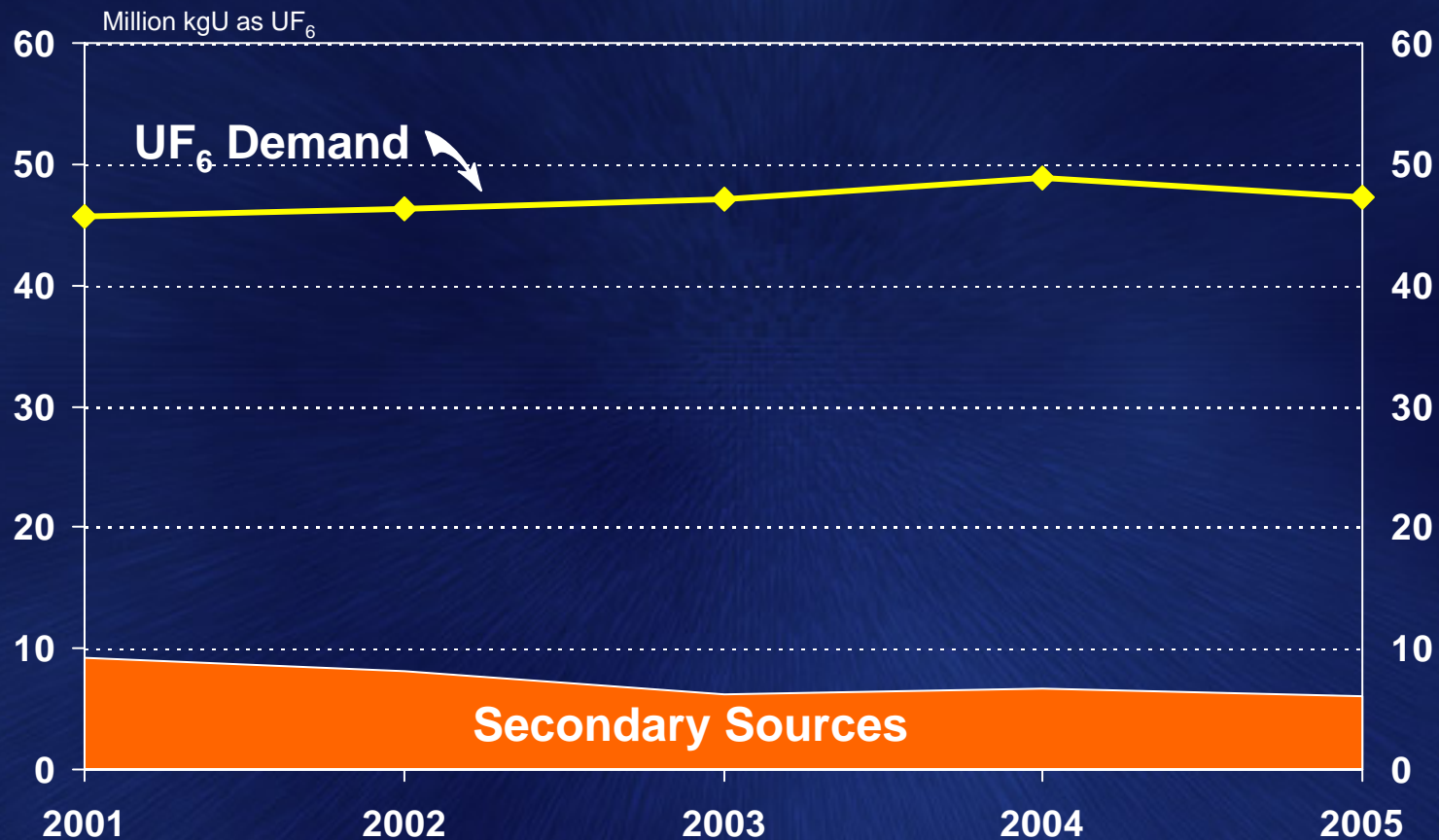
Enrichment UF₆ Feed Requirement



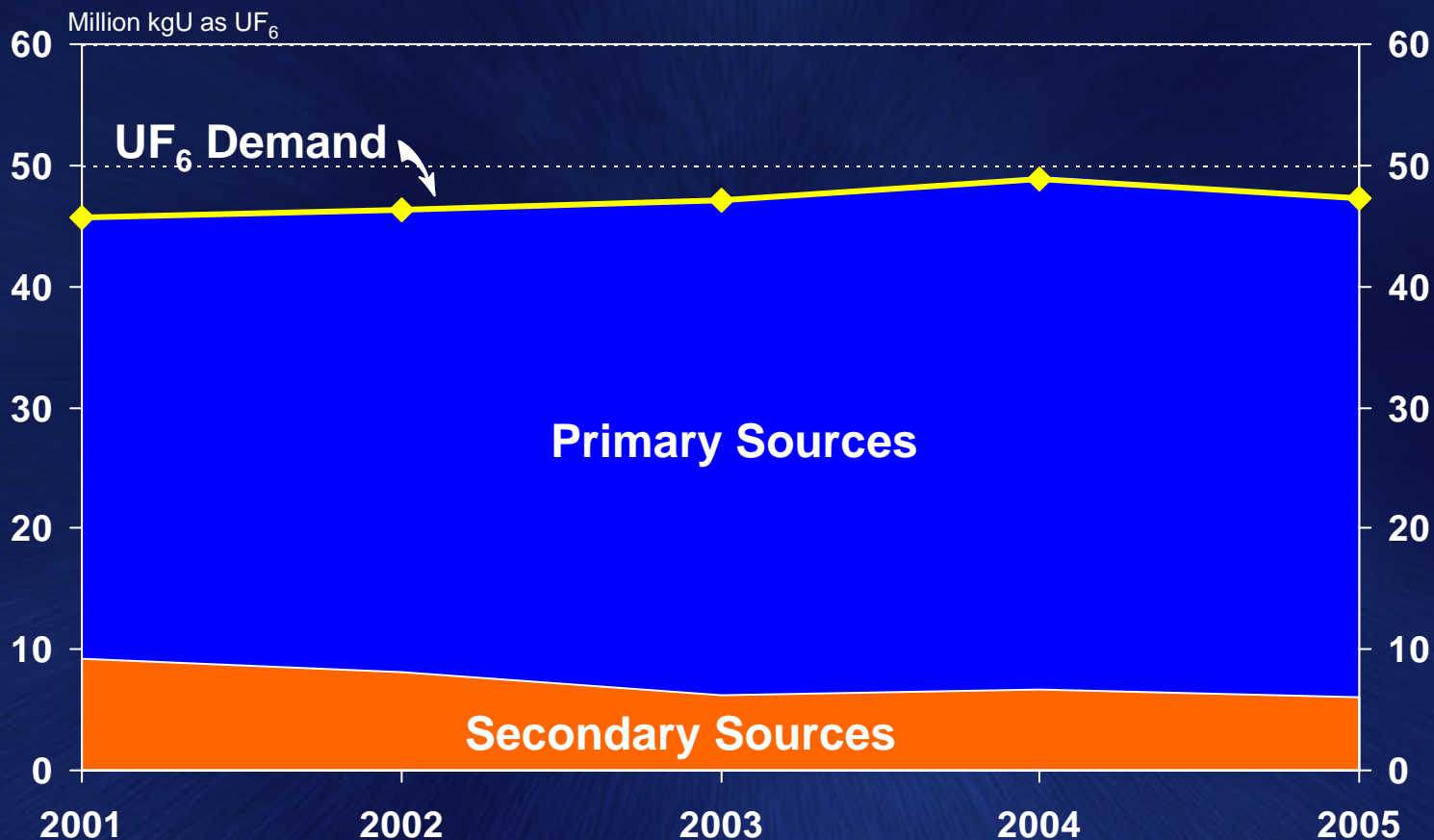
Secondary Sources of Conversion:

- ▶ Downblended HEU feed
- ▶ Re-enriched tails
- ▶ UF_6 inventories held by utilities, enrichers and/or governments
- ▶ Reprocessed nuclear fuel

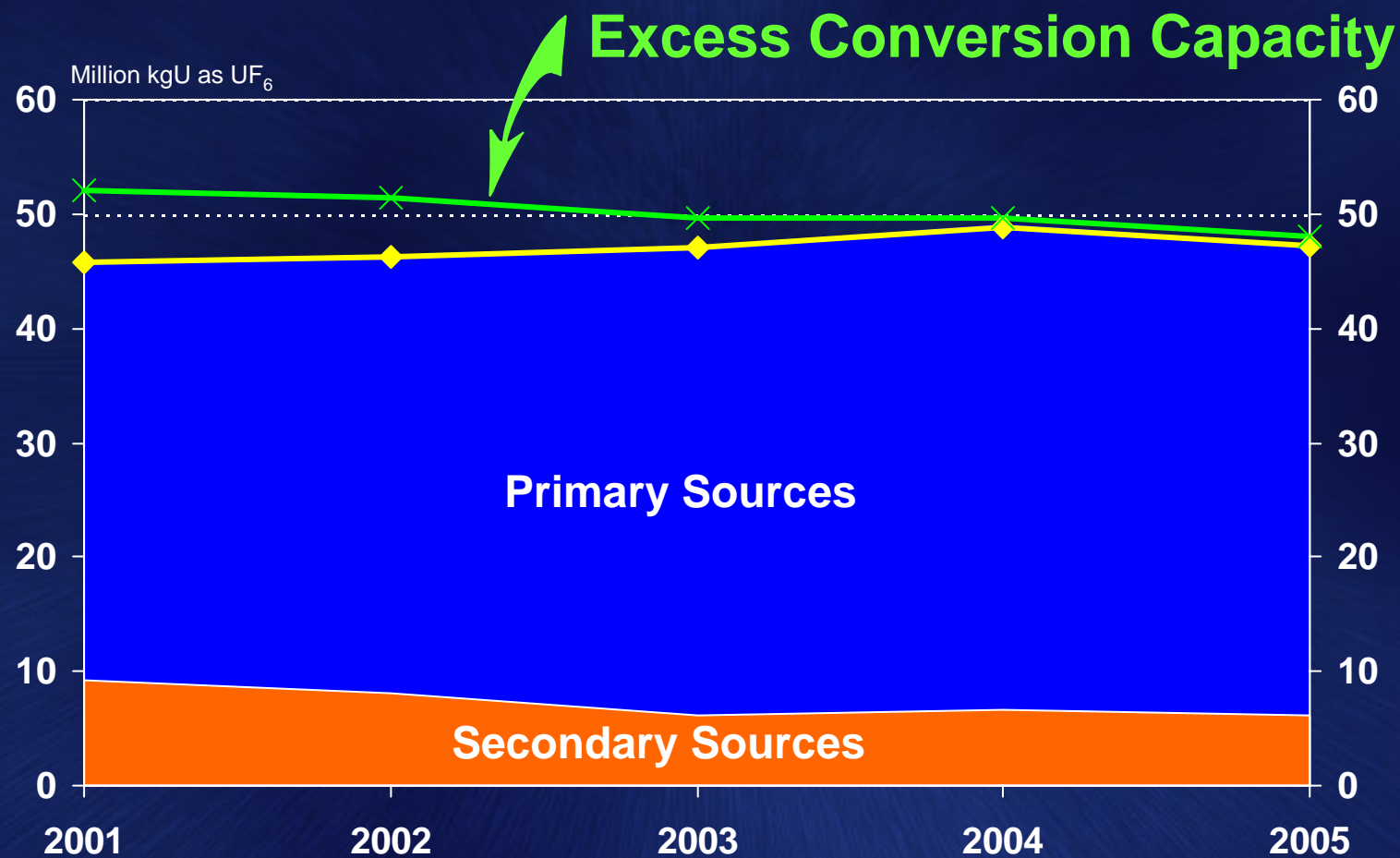
Enrichment UF_6 Feed Supply



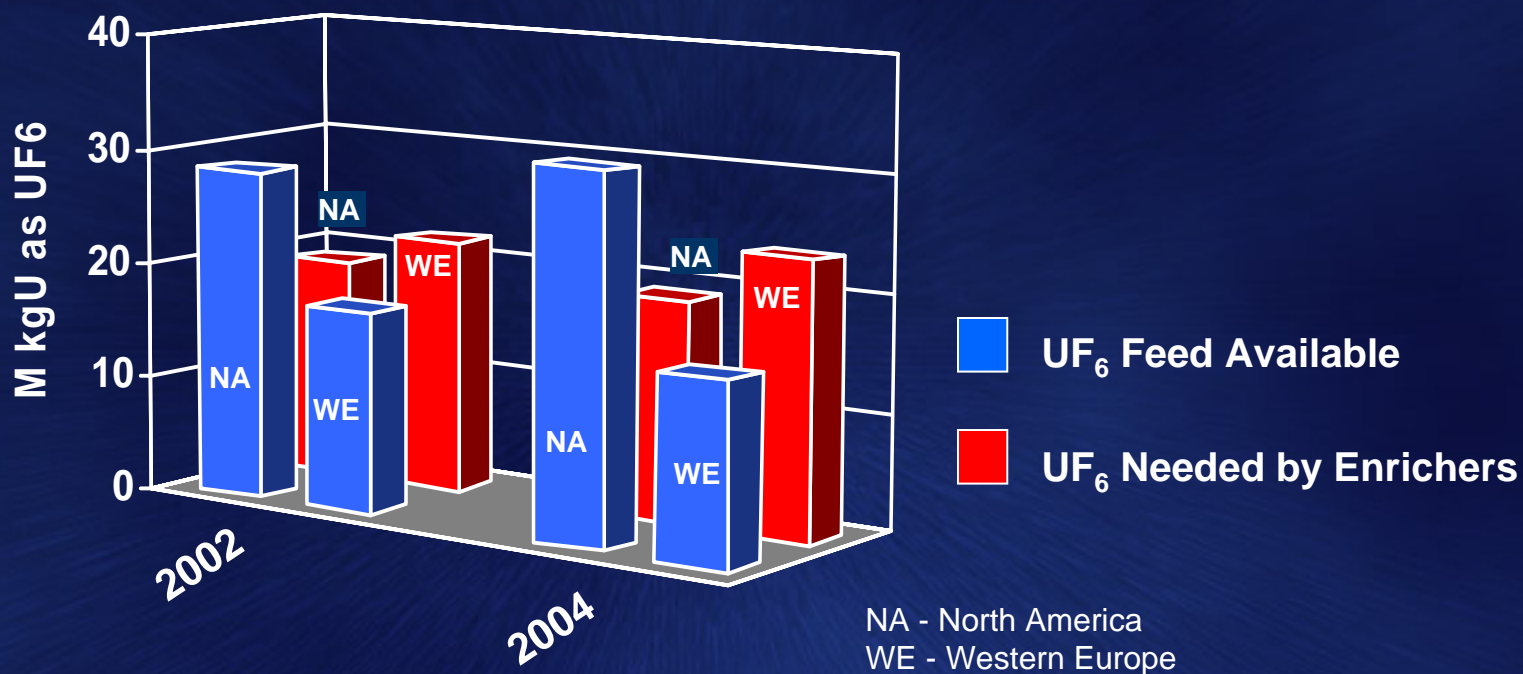
Enrichment UF_6 Feed Supply



Enrichment UF_6 Feed Supply



Feed Imbalance to Enrichers

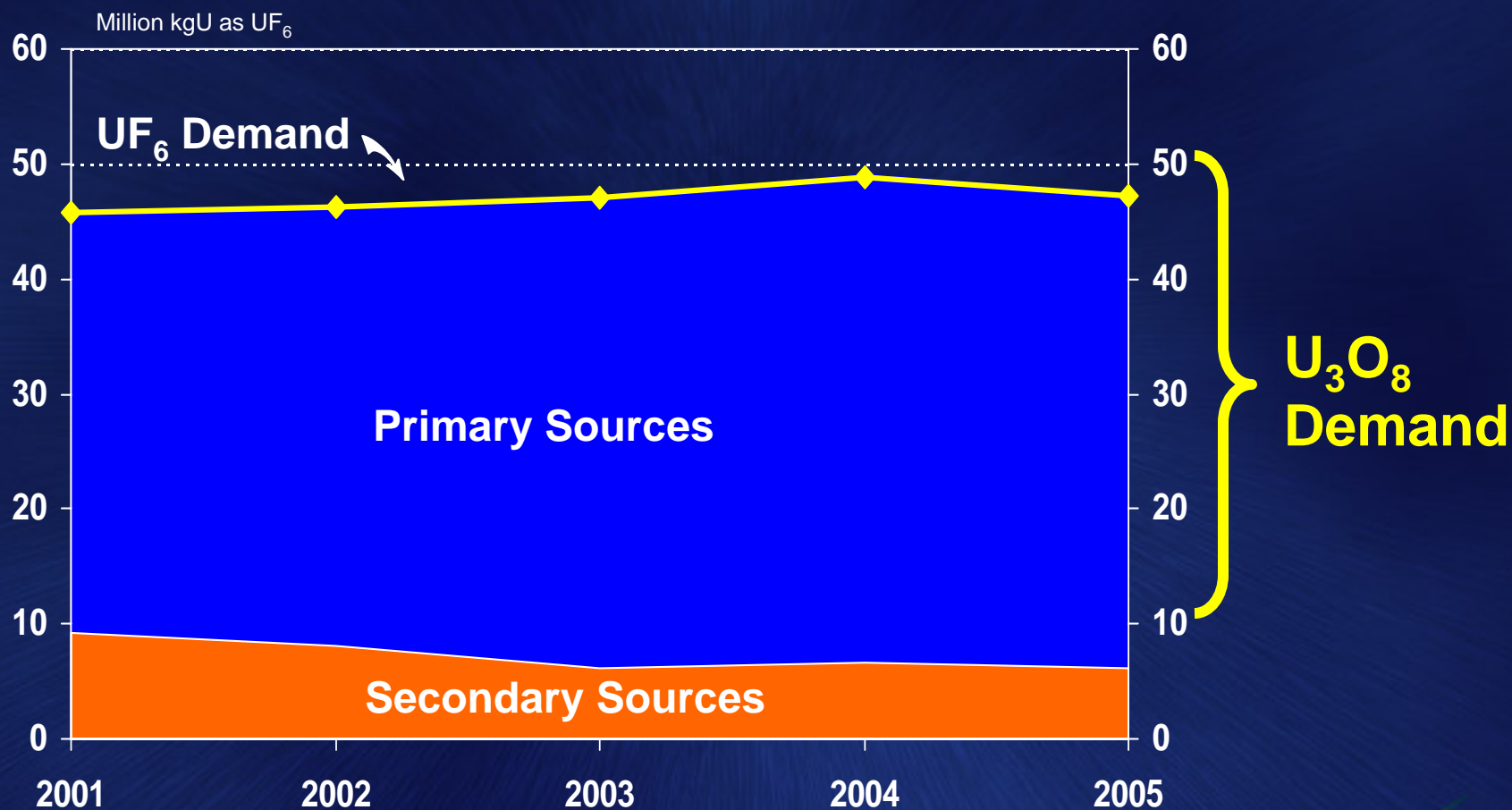


Transportation Issues:

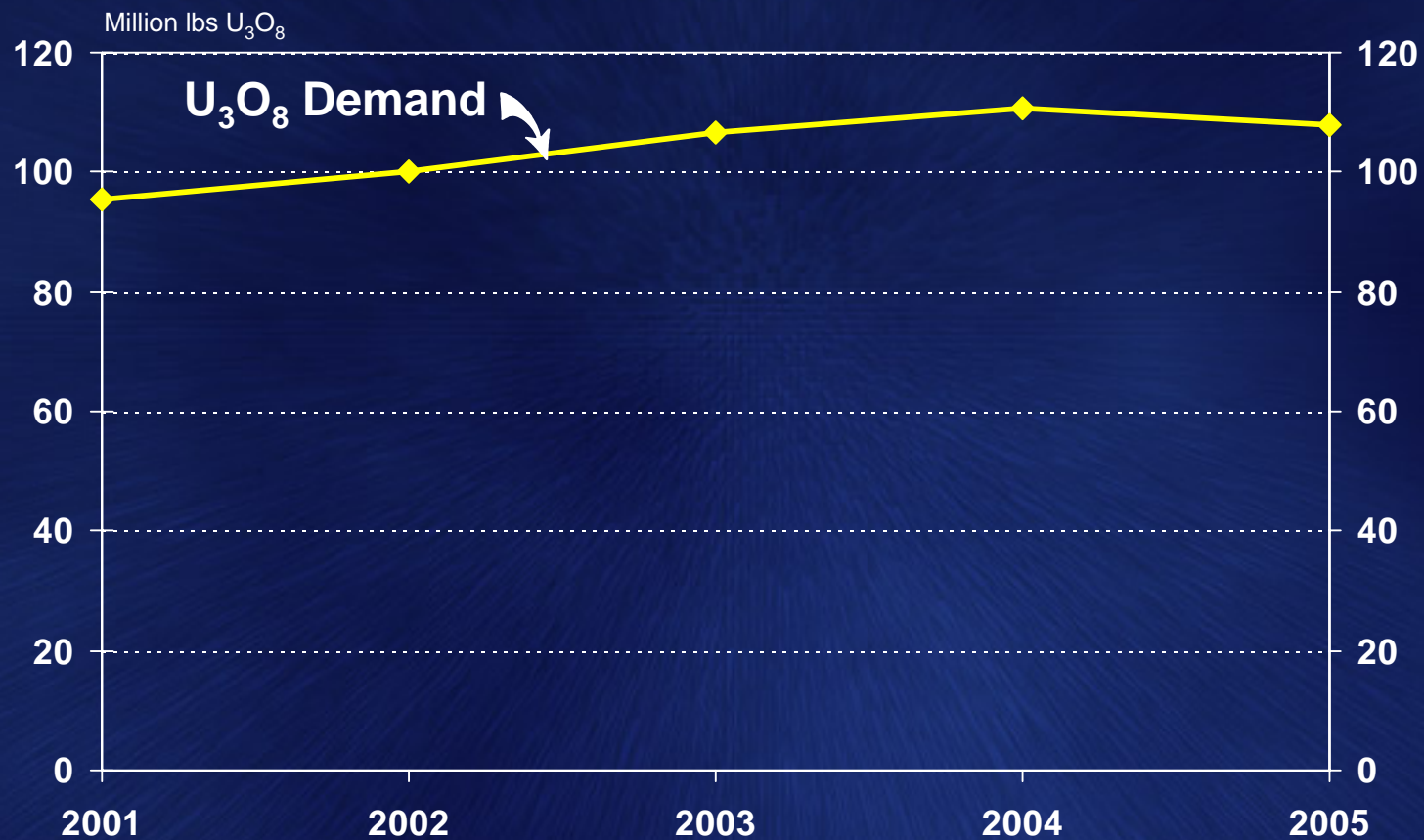
- Freight Costs
 - Approx. \$1.00/kg to Europe
- New TS-R-1 standards for transportation

**As European enrichers expand,
and a converter leaves the
market, *the regional imbalance
will worsen.***

Enrichment UF_6 Feed Supply

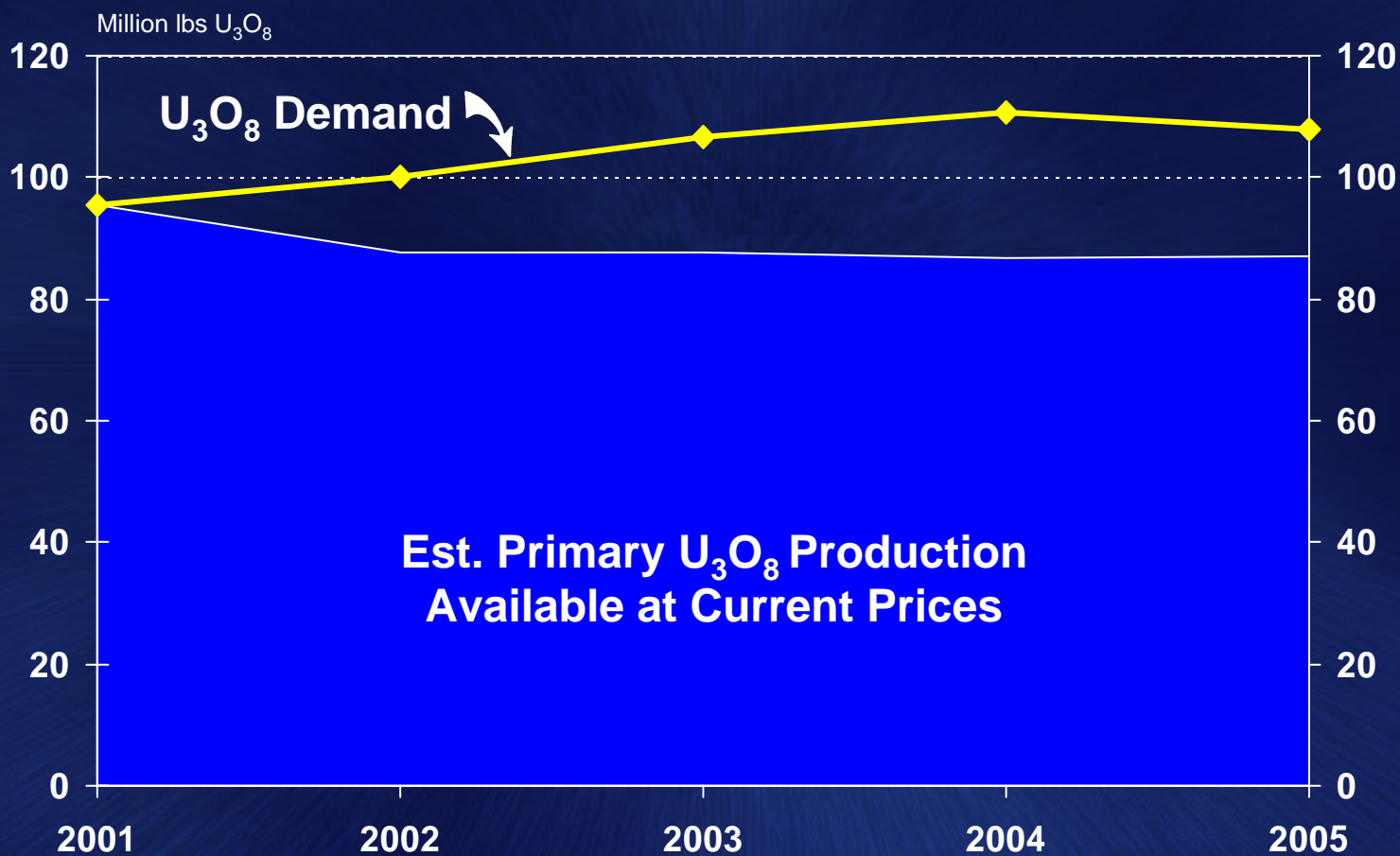


Conversion U_3O_8 Feed Requirements

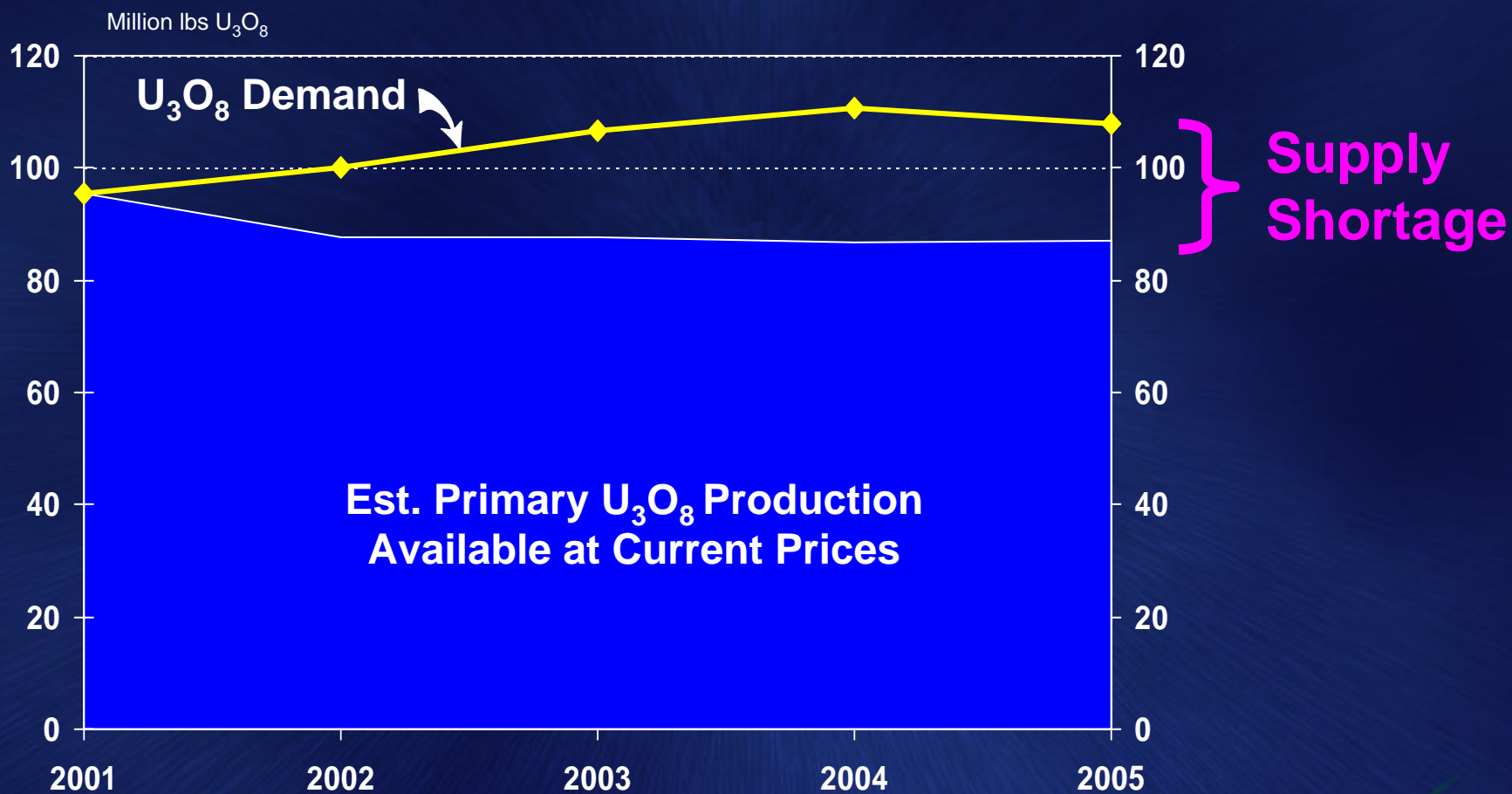


** Scheduled Production reduced for CANDU and Magnox reactors

Conversion U_3O_8 Feed Supply



Conversion U_3O_8 Feed Supply



How will the Gap be Filled?

Secondary Sources?

- There could be more tails re-enrichment,
but at increased SWU prices, is this attractive?
- There could be more Russian HEU downblending,
but with aggressive nuclear growth plans will Russia be
willing to sell this national asset? This option would
endanger an enricher and a converter.
- There could be U.S. HEU made available,
but how long before it would actually enter the market?
- There could be more MOX usage,
but how long before additional usage could be approved,
and is there enough capacity?
- There may be more inventory made available,
but this is not a long term supply source.

Primary Production?

There is greater nominal production capacity than current scheduled production rates,

BUT

Competitive producers presumably are currently producing their lowest cost reserves. What will be the cost for increased production?

How quickly can it be utilized?

Will conversion be impacted?

Potential consequences of a U_3O_8 supply shortfall on the conversion industry :

#1 Secondary sources may be used to fill the gap, keeping converters from operating at economic levels. Another converter might be forced to close.

This would be a significant loss if the nuclear industry is truly looking to greatly expand its business.

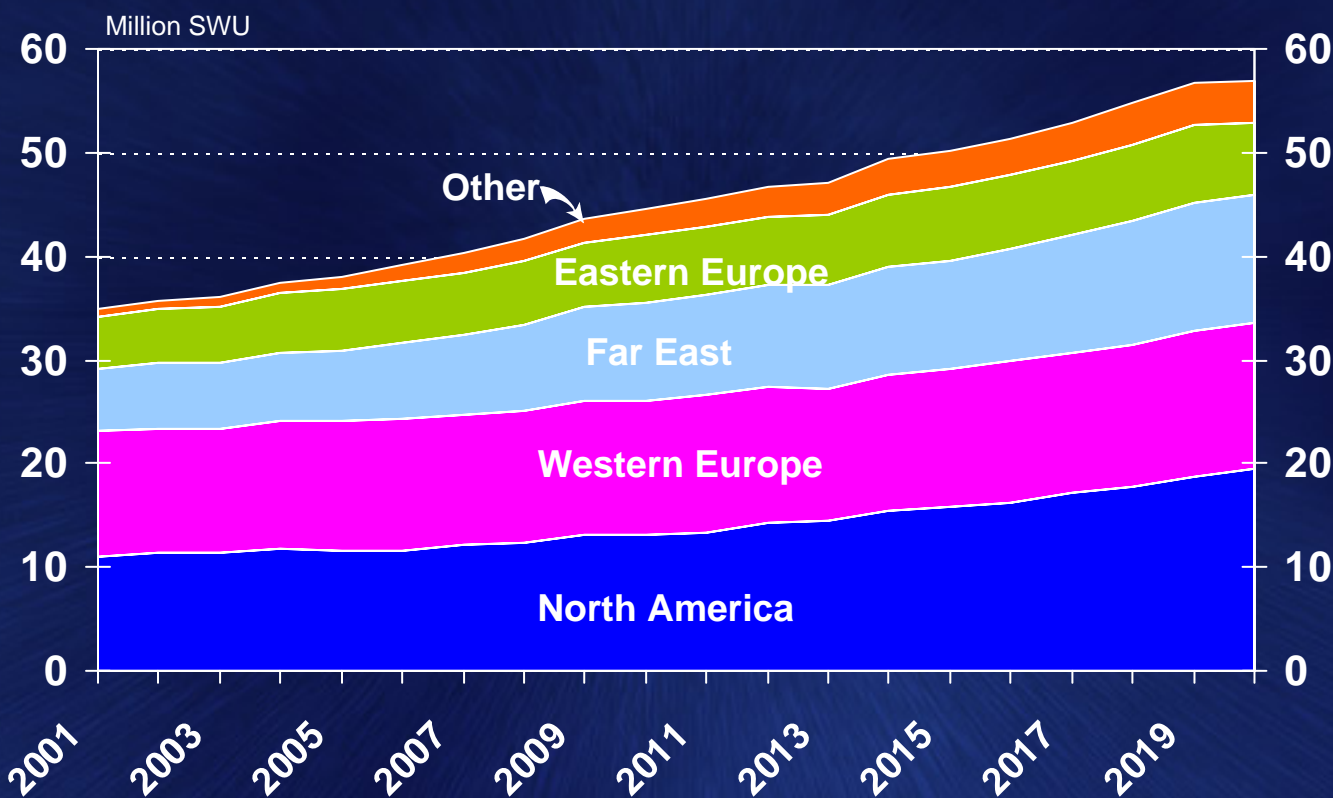
OR...

2 U_3O_8 becomes scarce and working inventories are consumed before new production can come on-line. Converters will no longer be able to accept short lead times for U_3O_8 deliveries.

New contracts may require 6-9 month lead times on deliveries of U_3O_8 to conversion facilities.

The Nuclear Fuel Market *Tomorrow....*

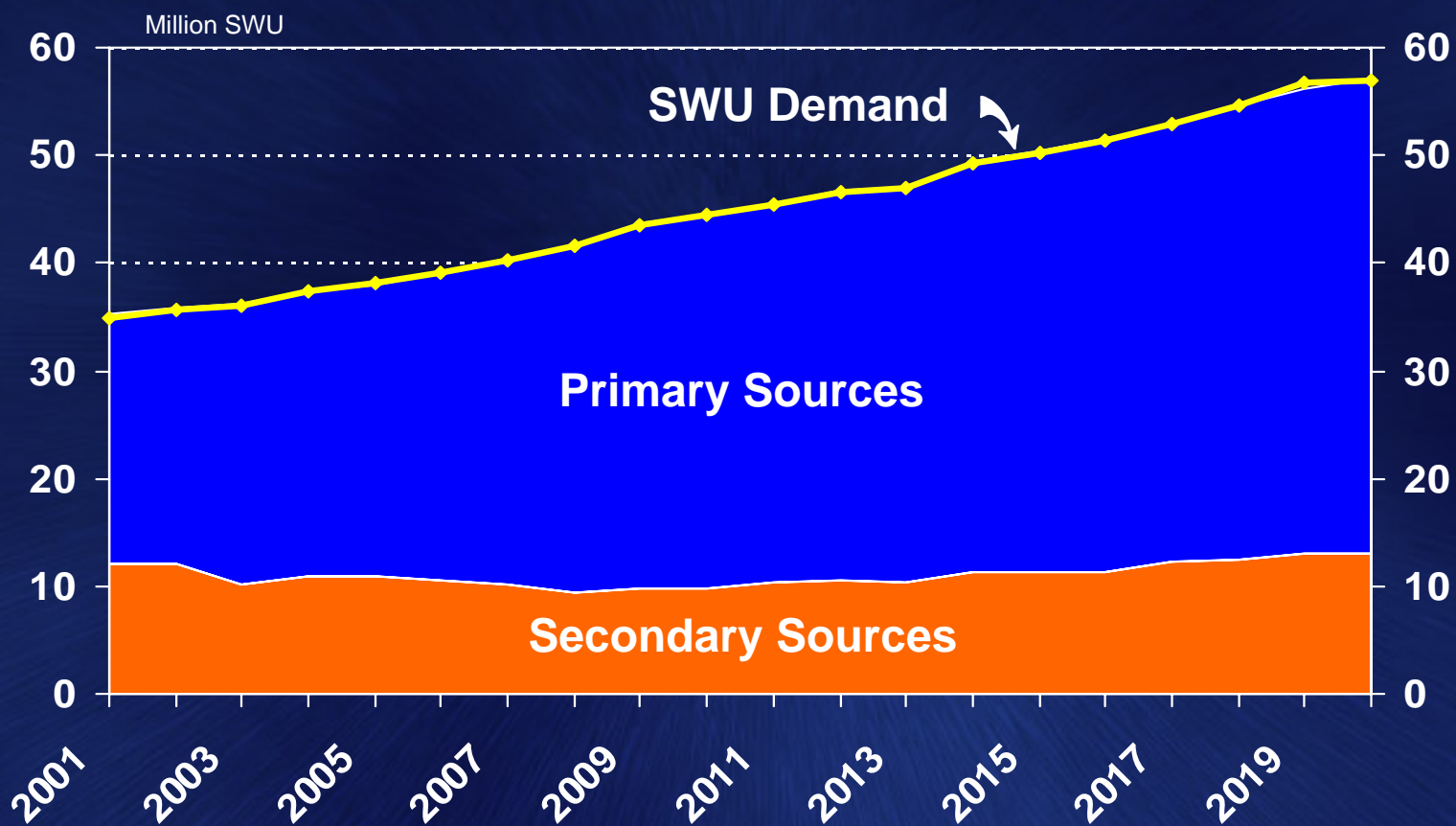
World SWU Requirements High Growth Scenario



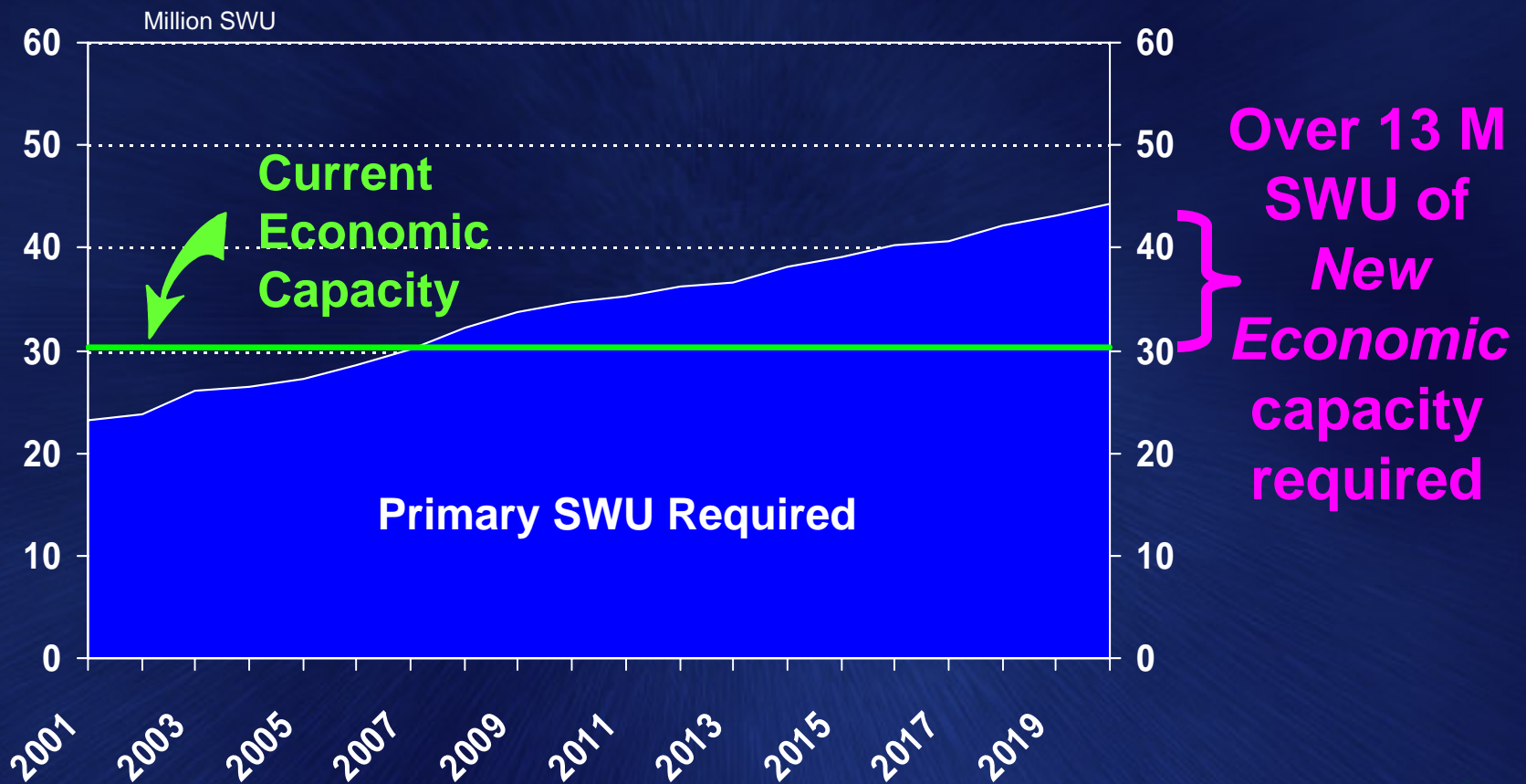
SWU Requirements based upon NEI growth expectations for U.S. and WNA Upper Scenario for rest of world

World SWU Supply

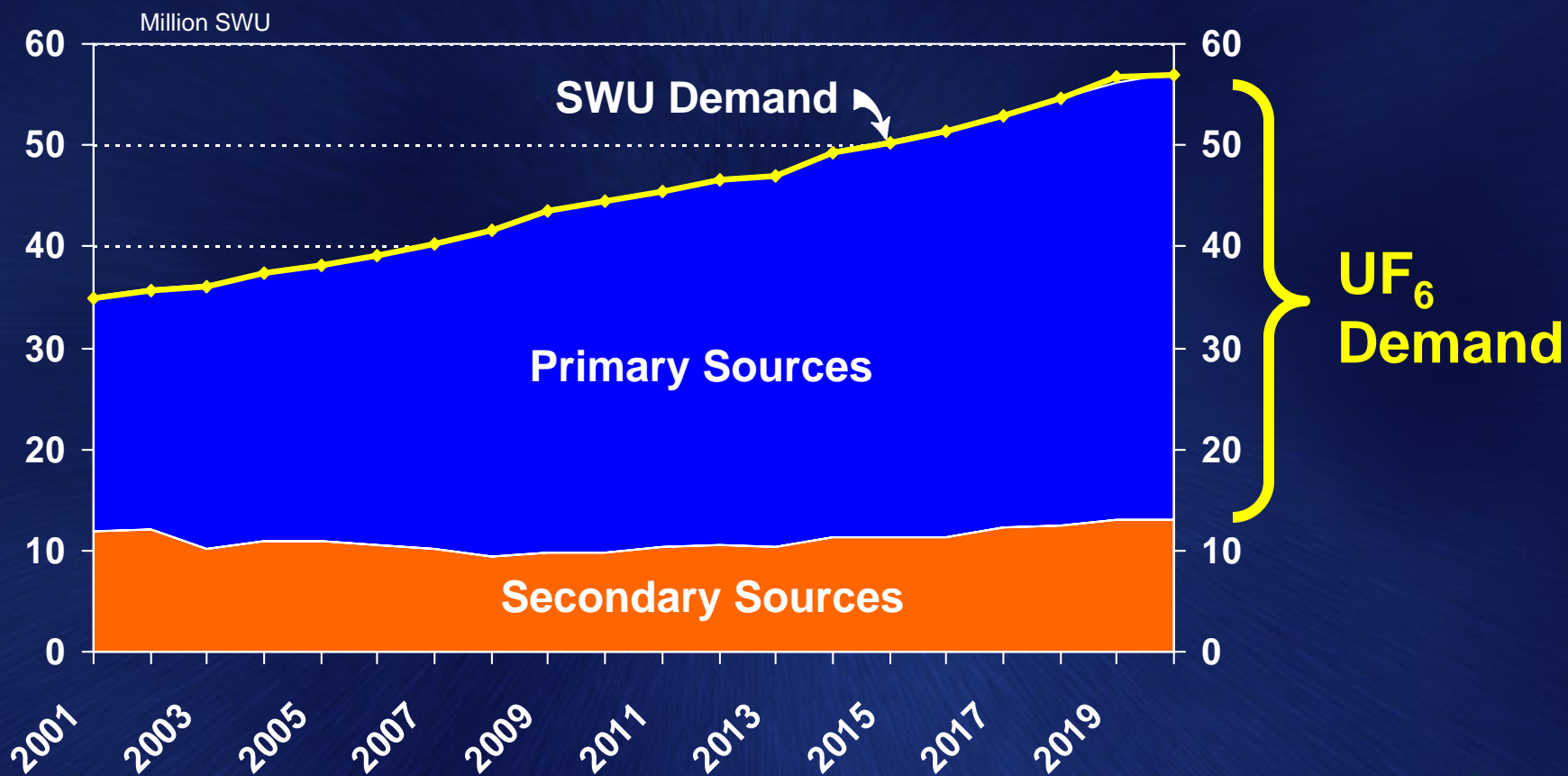
High Growth Scenario



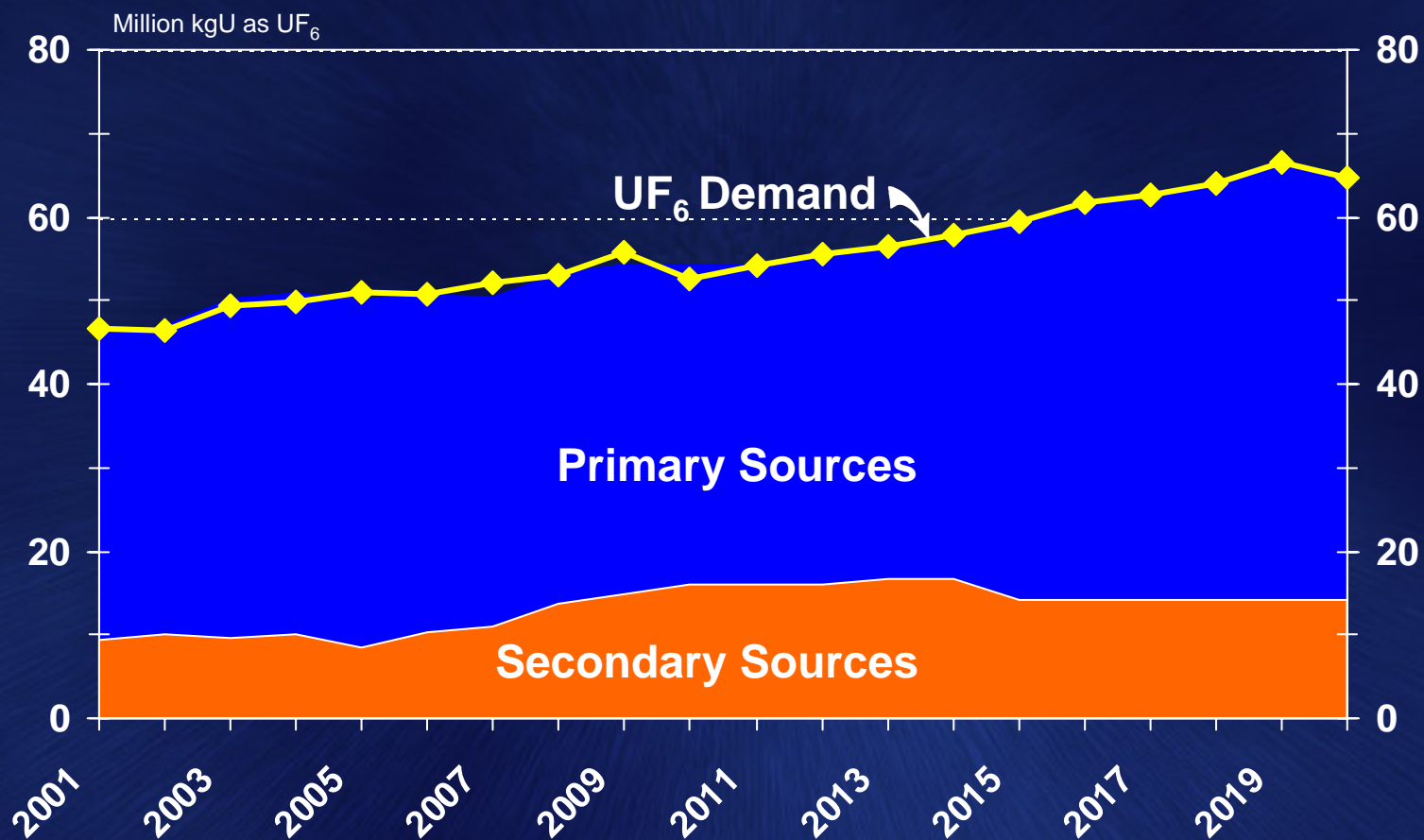
World Primary SWU Outlook High Growth Scenario



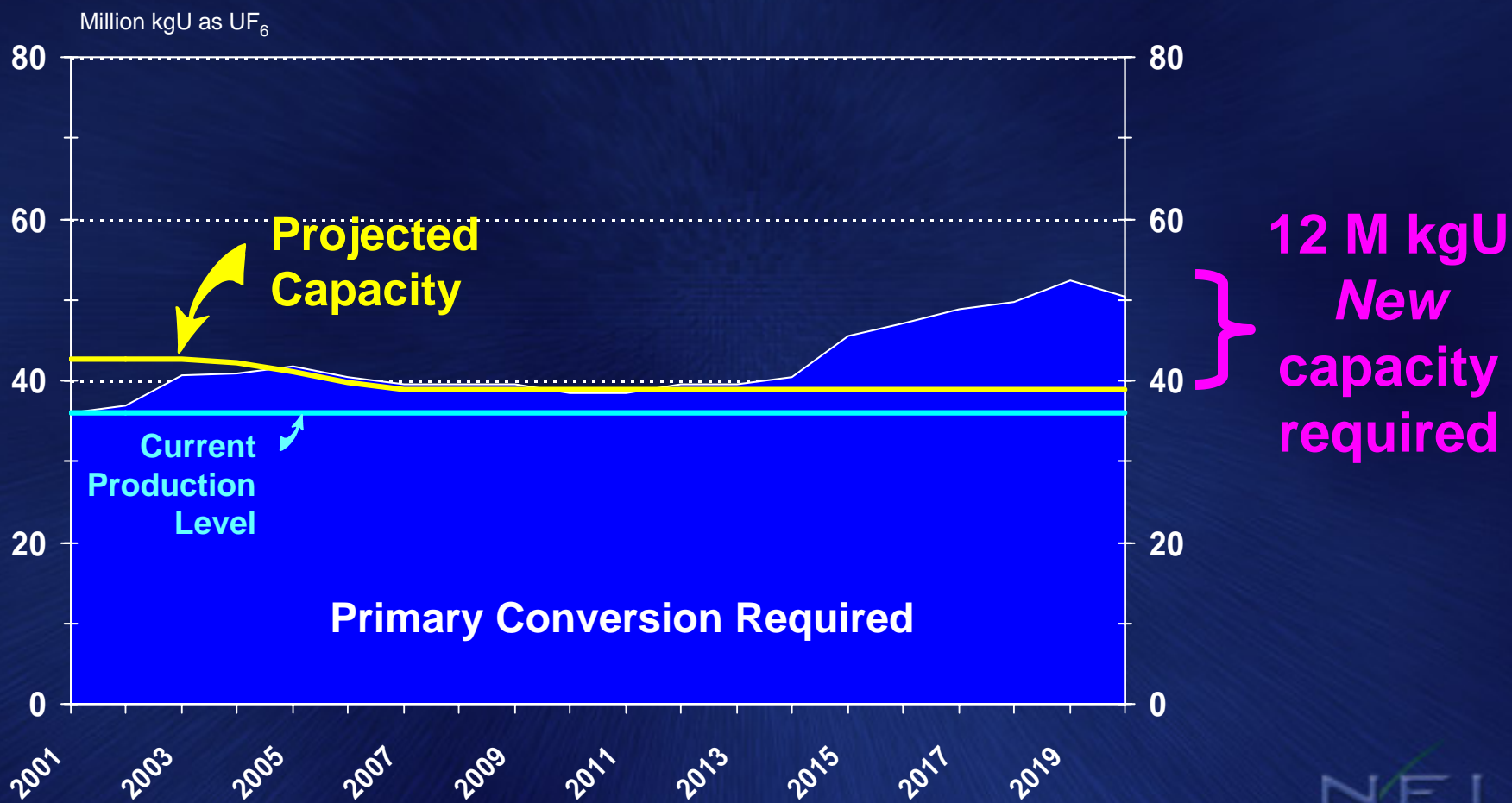
World SWU Supply High Growth Scenario



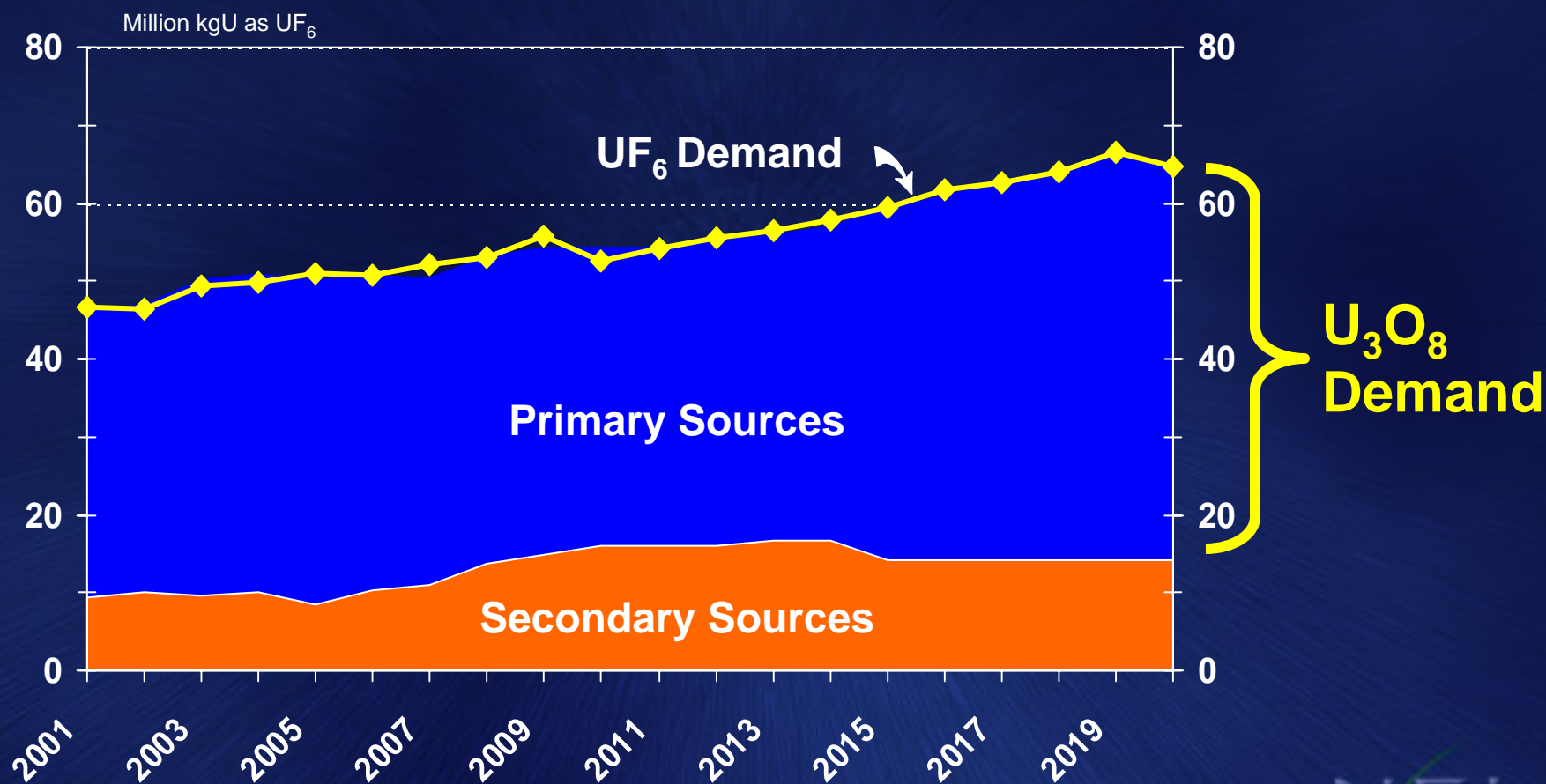
Enrichment UF_6 Feed Supply High Growth Scenario



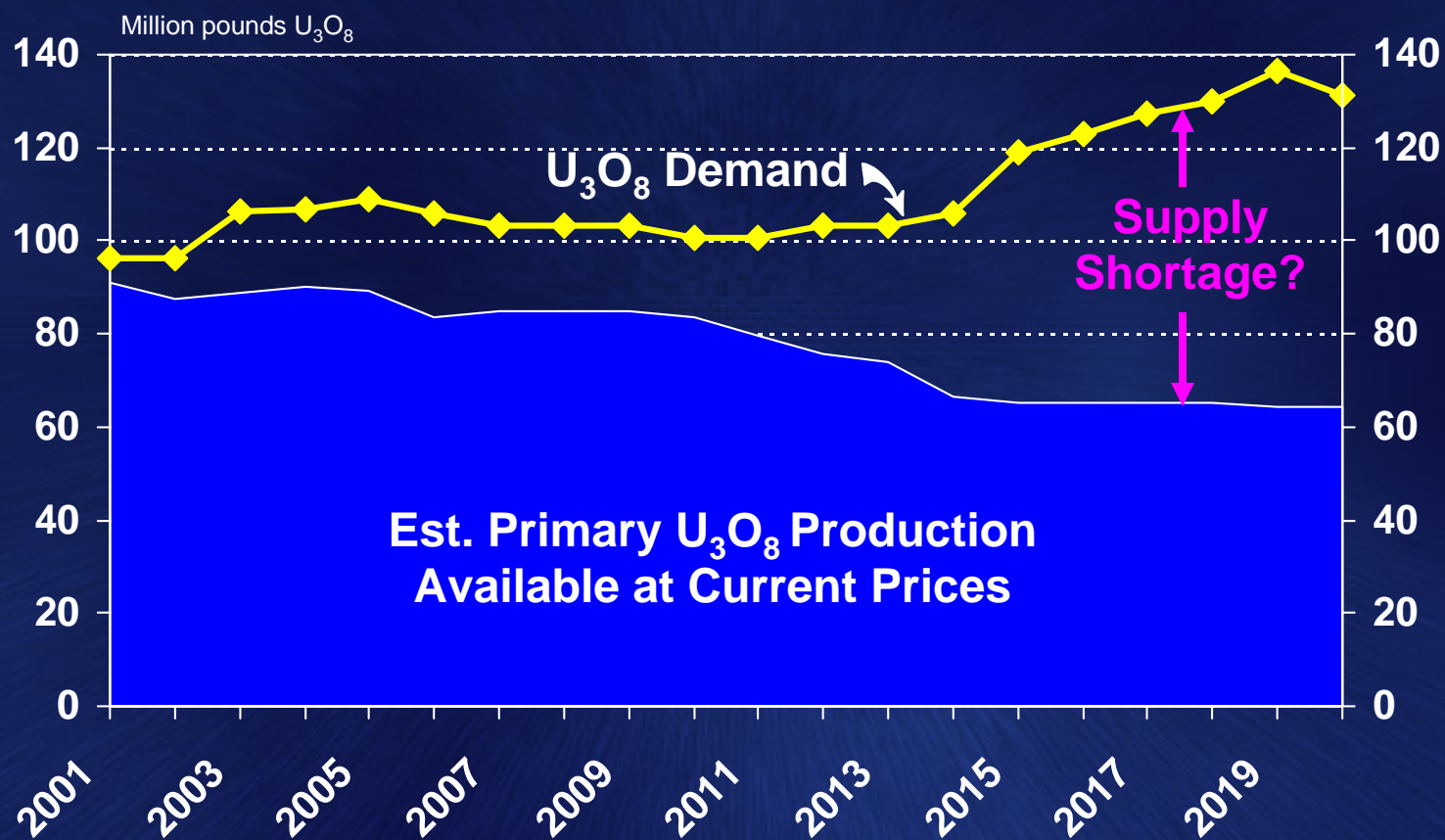
Primary Conversion Outlook High Growth Scenario



Enrichment UF_6 Feed Supply High Growth Scenario



Conversion U_3O_8 Feed Supply High Growth Scenario



Cumulative U_3O_8 shortage \approx 660 M lbs,
equivalent to 825 mt HEU.

This represents nearly **70%** of the
estimated remaining Russian and
U.S. nuclear arsenals.

Not a likely solution....

(ALTERNATIVE TO PREVIOUS SLIDE)

Cumulative U_3O_8 shortage \approx 660 M lbs,
equivalent to 253 M kgU as UF_6 .

This represents ***7 years*** of world
conversion output at current rates.

**Additional U_3O_8 production will
be required....**

***which mandates maintaining a
viable Conversion Industry!***

Instead of Custer's Last Stand....

it's

...United We Stand!