"The Global Nuclear Fuel Market – Supply and Demand 2005-2030"

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Report contents

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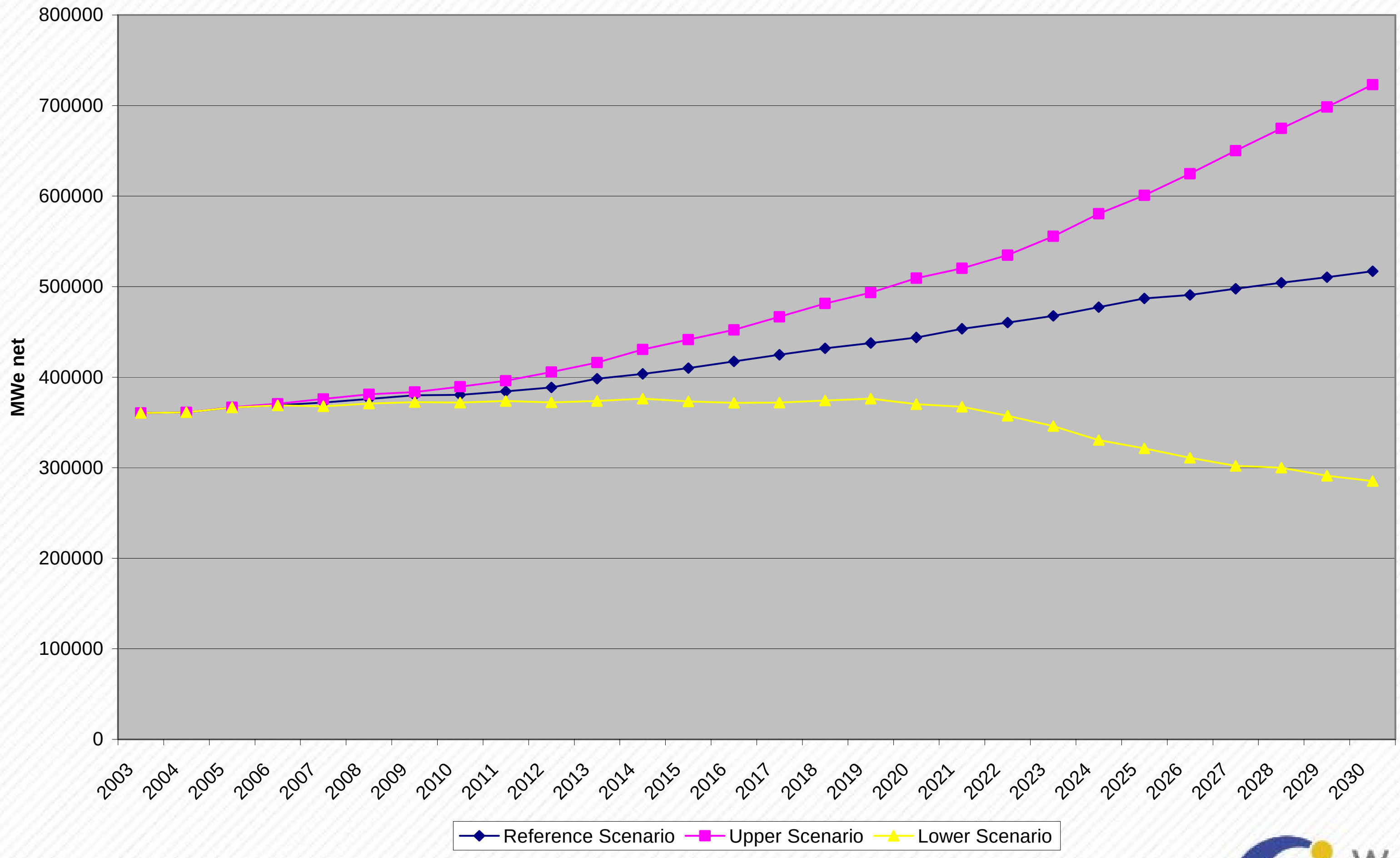
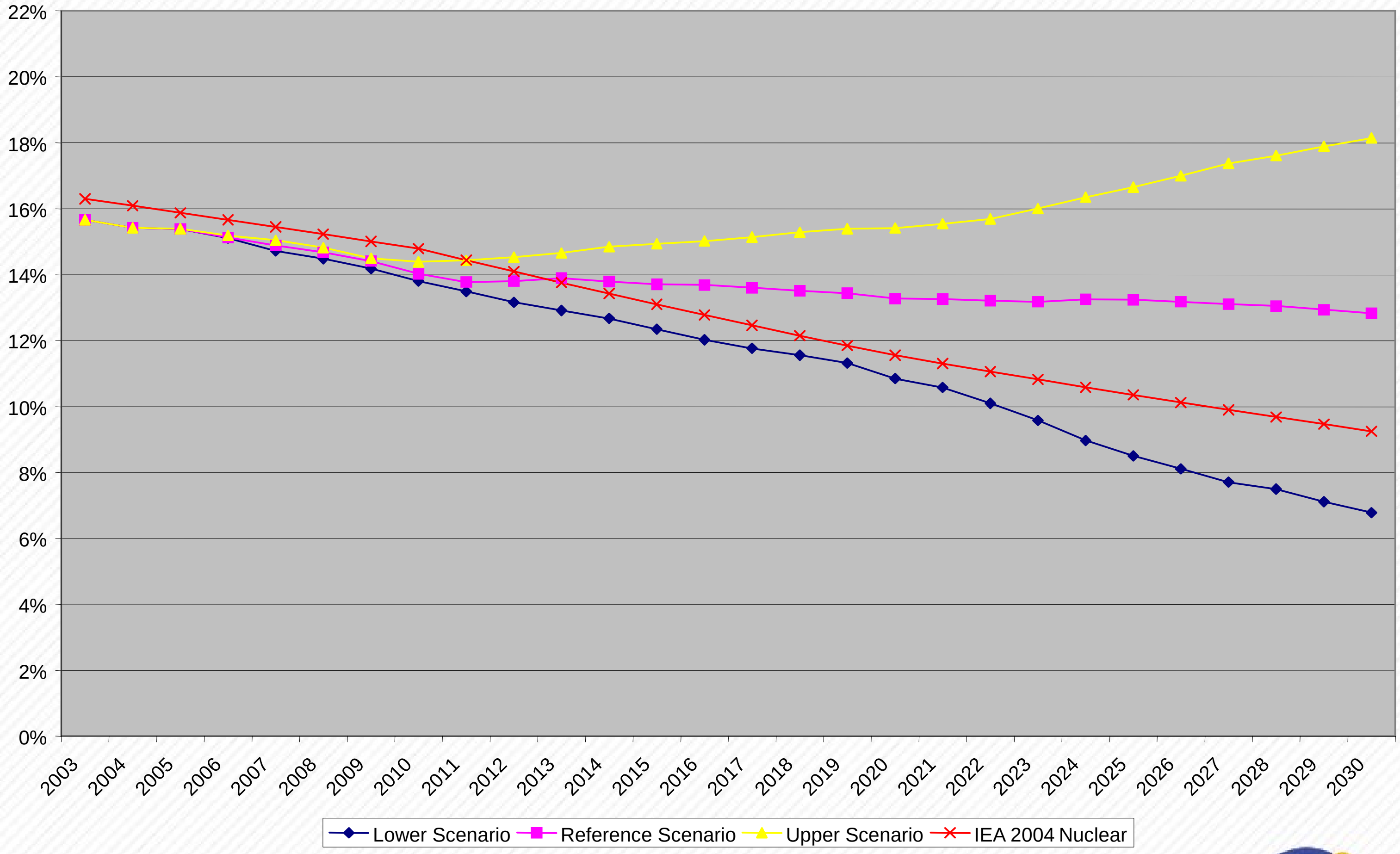
Nuclear generating capacity

- Up to 2020 – by country
- Beyond 2020 – by region only

Nuclear generating capacity to 2030, MWe net



Nuclear share of power generation, %



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IEA main case

“Electricity demand growth worldwide of 2.45% per annum for the next 20-30 years”

Factors affecting fuel requirements

- Reactor designs
- Load factor
- Enrichment level
- Fuel burnup
- Tails assay
- Cycle length

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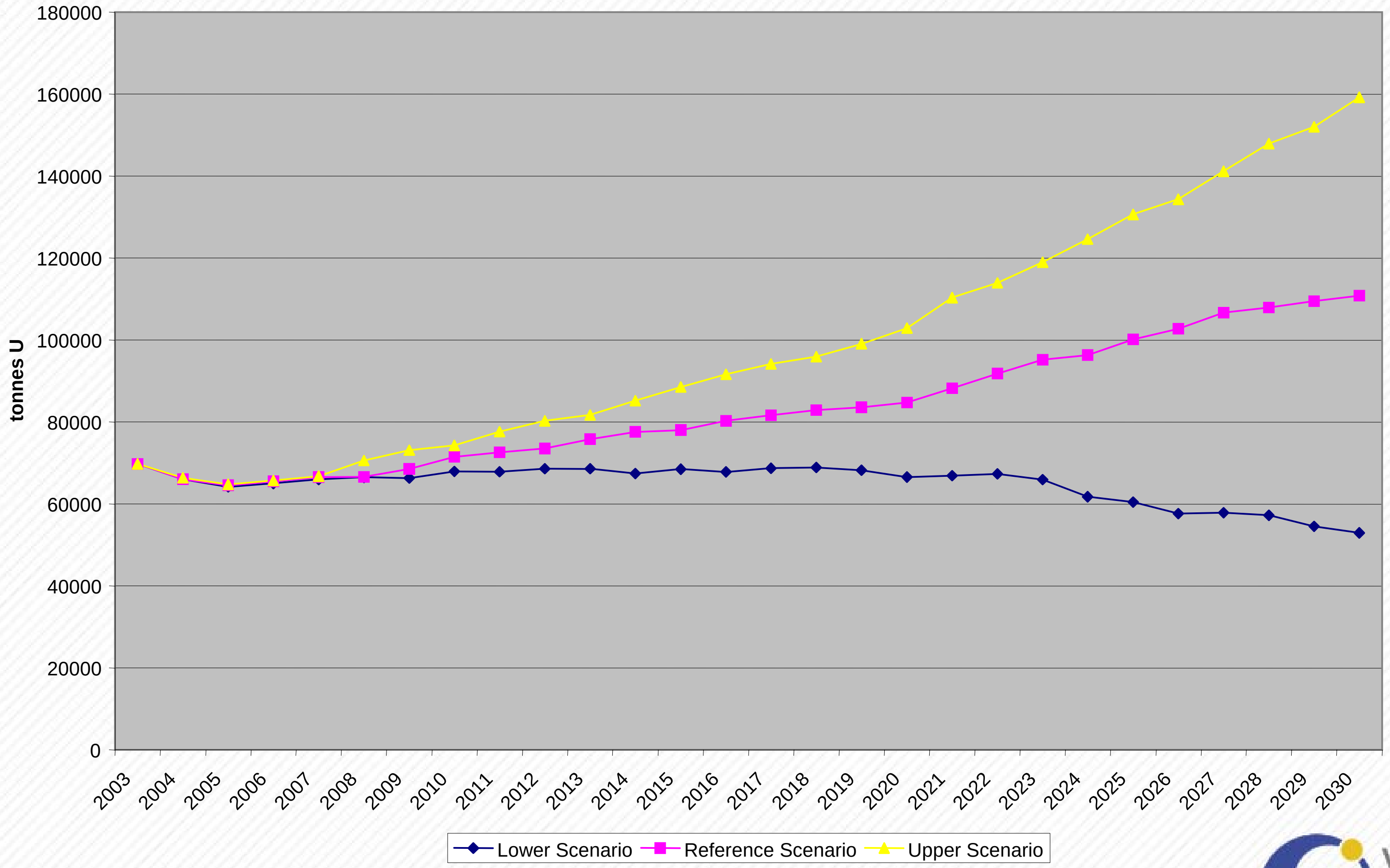
Uranium requirements to 2030, tU



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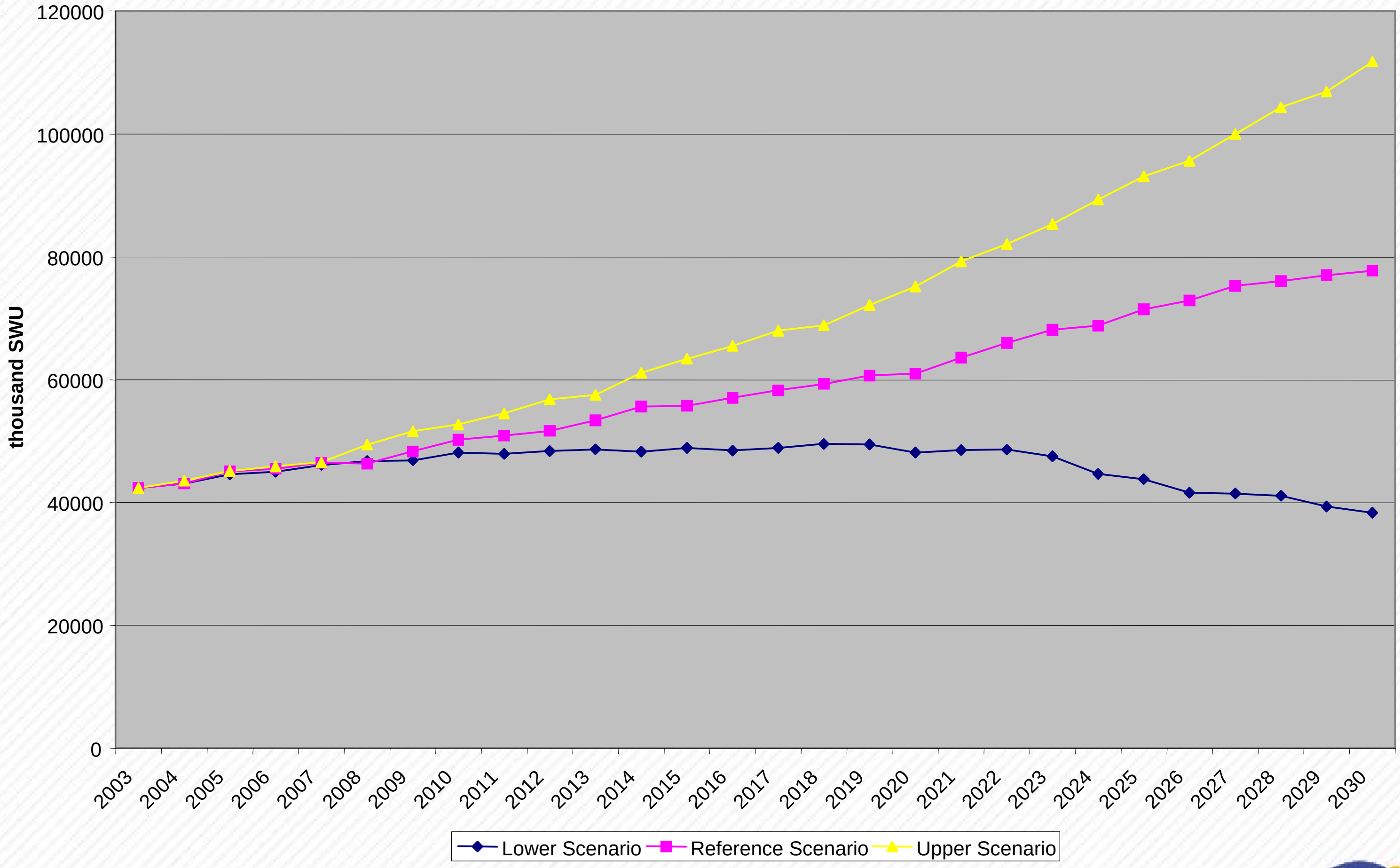
Enrichment requirements to 2030, ‘000s SWUs



Nuclear fuel supply

- Uranium
- Conversion
- Enrichment
- Fuel fabrication
- Primary versus secondary sources

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World uranium production 2002-2004, tU

	2002	2003	2004	% change 2003-2004
Australia	6854	7572	8982	19
Brazil	270	310	300	-3
Canada	11604	10457	11597	11
China*	730	750	750	0
Czech Republic	465	452	412	-9
France	18	9	7	0
Germany	212	150	150	0
India*	230	230	230	0
Kazakhstan	2800	3300	3719	13
Namibia	2333	2036	3038	49
Niger	3075	3143	3282	4
Pakistan*	38	45	45	0
Portugal	2	0	0	0
Romania*	90	90	90	0
Russia*	2900	3150	3200	2
South Africa	824	758	755	0
Spain	37	0	0	0
Ukraine*	800	800	800	0
USA	883	779	878	9
Uzbekistan	1860	1589	2016	27
Total	**36025**	**35622**	**40251**	**13**

*WNA estimate

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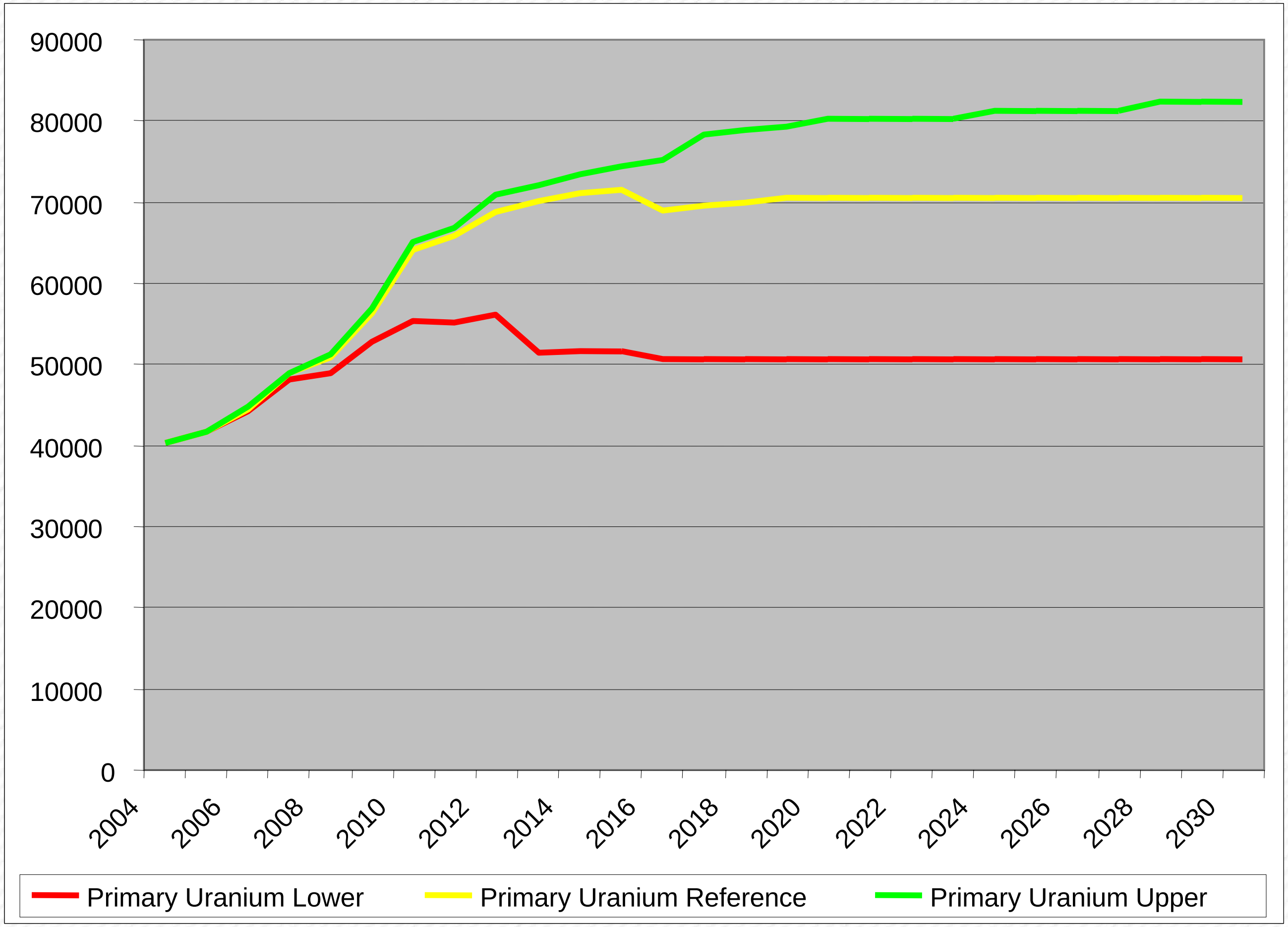
Expected world uranium production capacity, 2005-2030, tU



Secondary supply

- Commercial inventory
- Government inventory
- Ex-military materials
- Reprocessed uranium and MOX fuel
- Re-enriched depleted uranium

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Supply and demand

- Russian-origin reactors
- Western-origin reactors
- Combined to produce world picture

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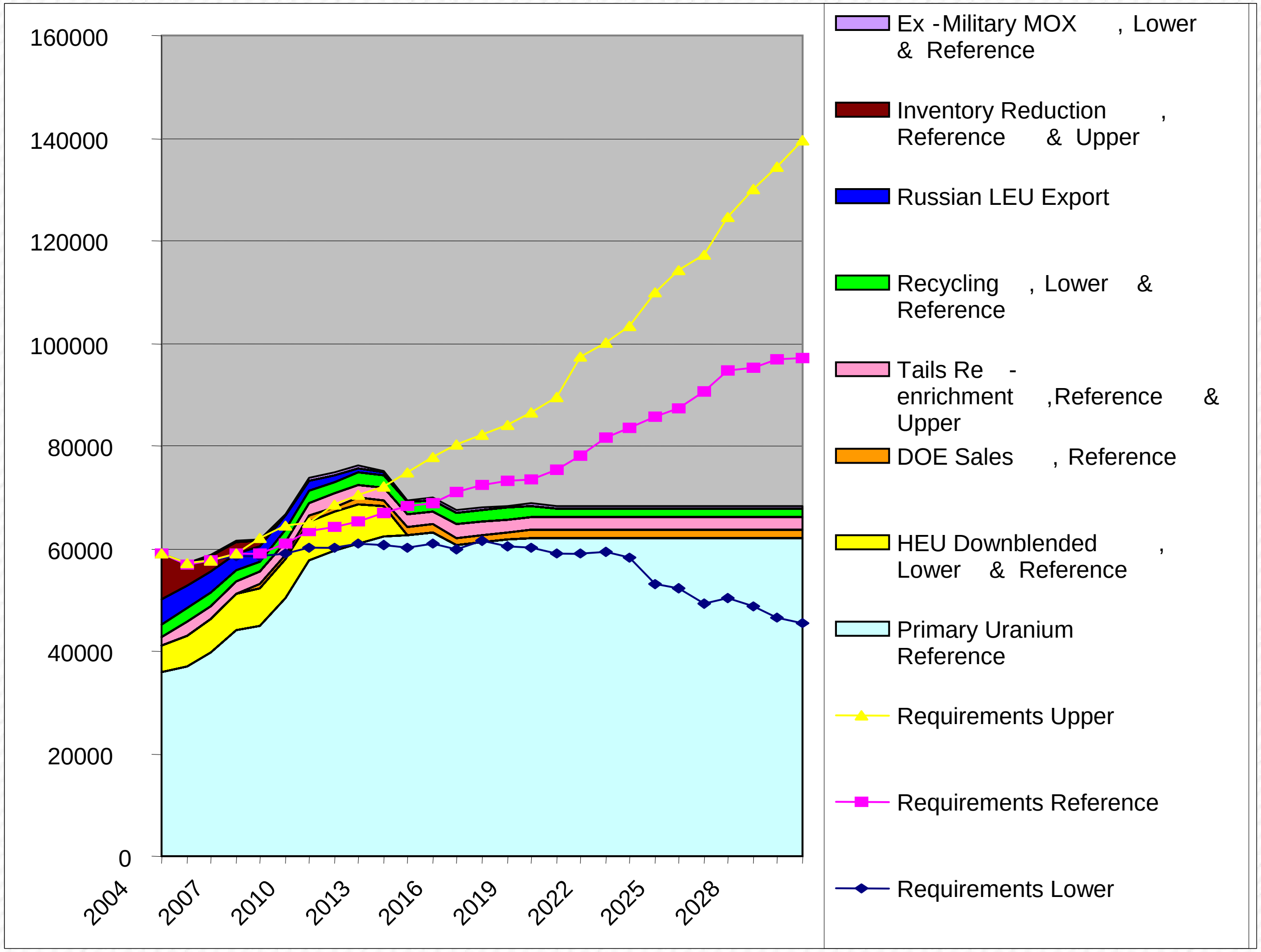
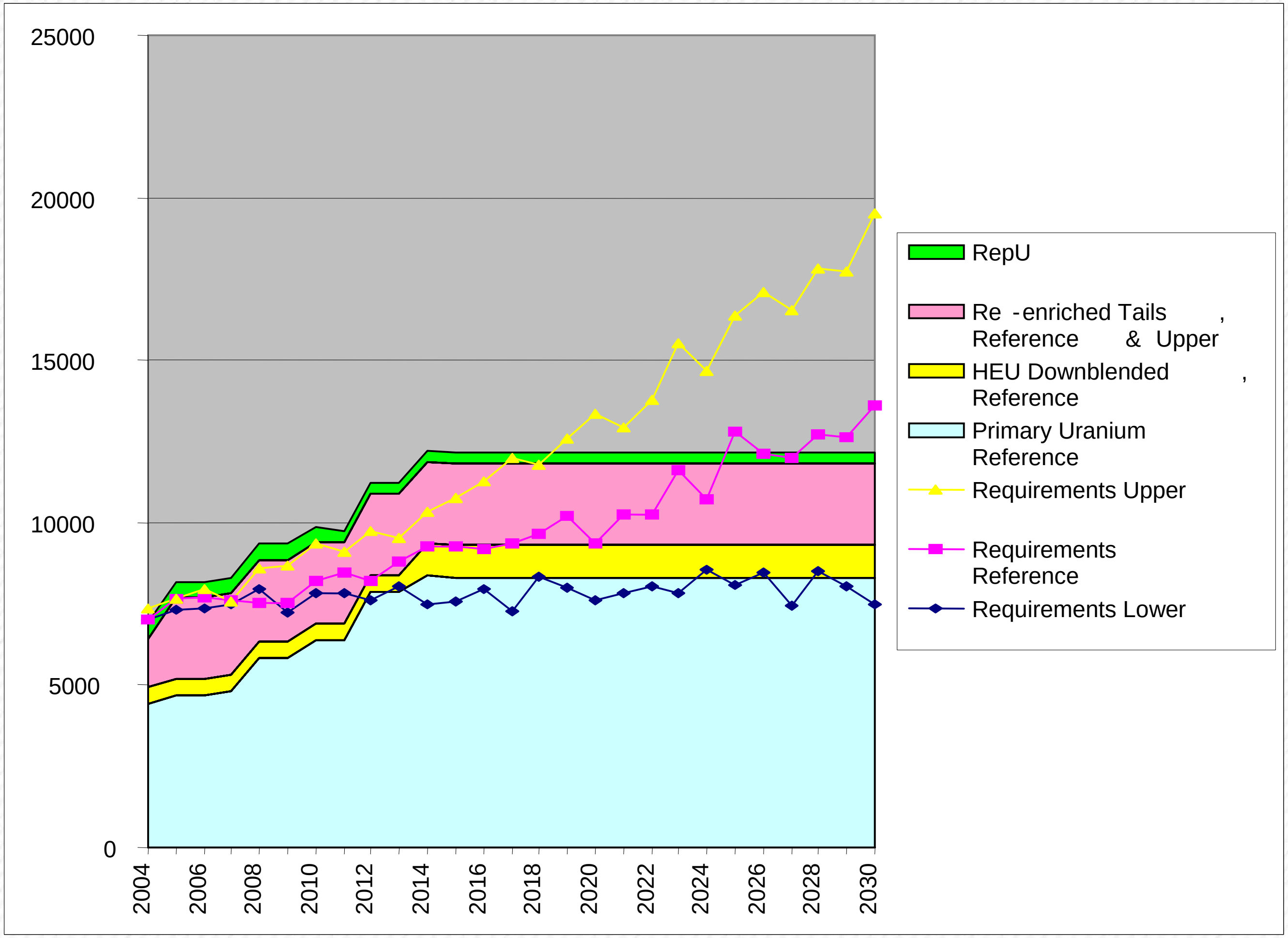
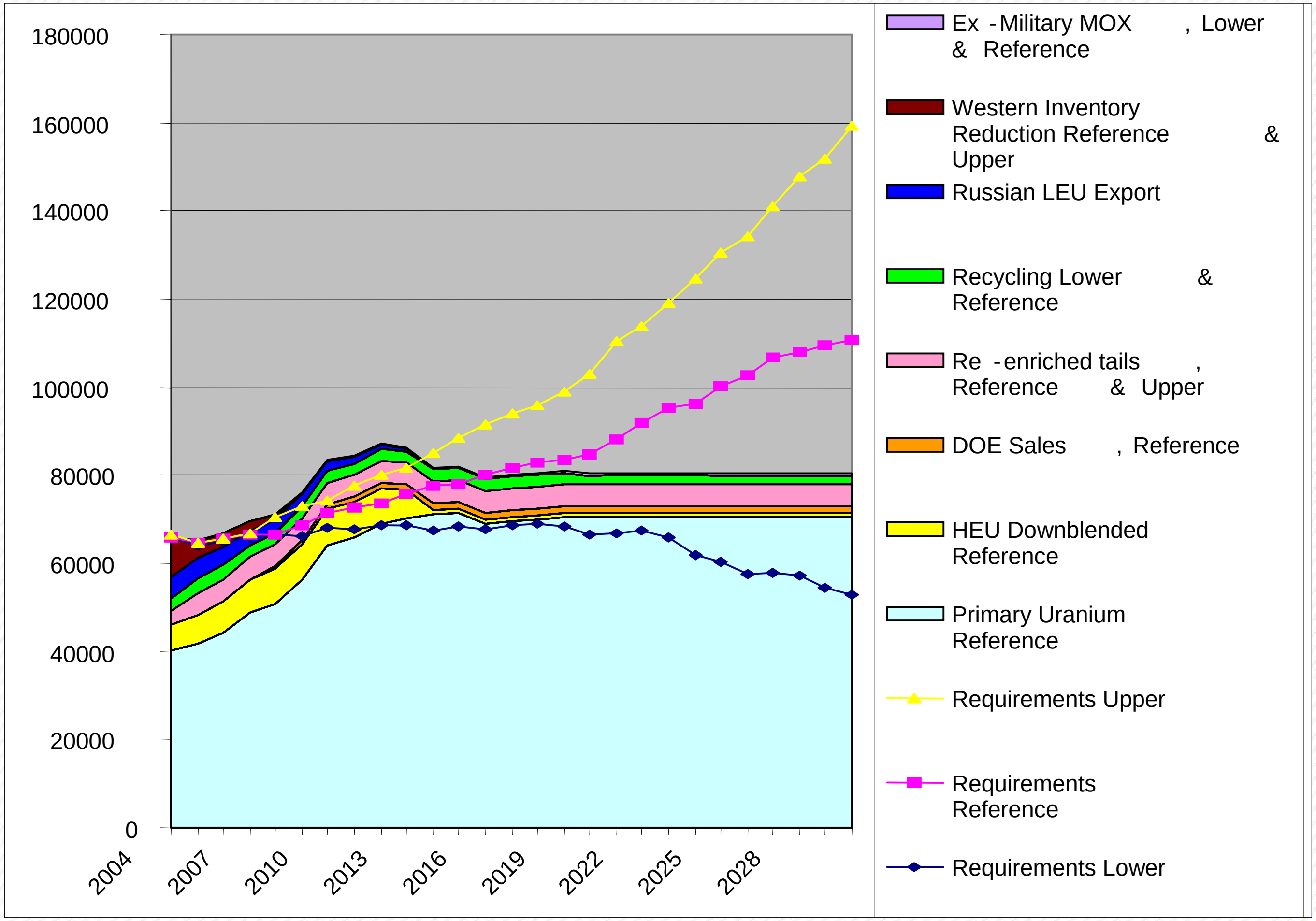
Western-origin reactors and reference case supply



Russian-origin reactors and reference case supply



World reactors and reference case supply



Conversion – current capacity against demand

- 62,000 tU in UF_6
- 4,000 tU in UO_2
- Almost in line with demand
- Secondary supplies make up balance

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Conversion – capacity against demand in 2020

- Demand rises to 80,000 tU as UF_6
- Secondary supplies unstable
- New capacity therefore required

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Enrichment – current capacity against demand

- Capacity is currently in line with demand
- Few sellers
- Market could be disrupted by supply problems

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Enrichment – capacity against demand in 2020

- Possible shortage of capacity after 2010 if demand rises as anticipated
- Secondary supplies remain important
- Reliant on Russian HEU feed supply to 2013 at least
- New capacity probably needed before 2013

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Current fuel fabrication capacity

- More than adequate to meet demand
- More MOX fuel fabrication required to meet upper scenario for MOX use

Conclusions

- Some potential nuclear fuel shortages prior to 2015, unless the lower scenario is accurate
- Primary uranium supply needs to rise sharply to meet rising market demand
- Need to maintain investors' confidence in nuclear
- Possible release of more government inventory and need for more public support for uranium mining

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