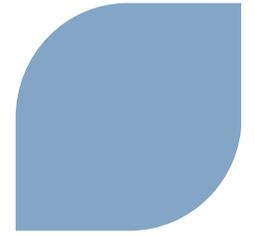


Uranium Market

Christian Polak; AREVA Mines
November 2013

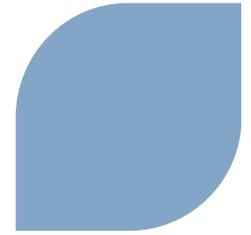


Agenda



- ▶ **Uranium Pricing, 2012 and early 2013 key findings**
- ▶ **Uranium market trends**

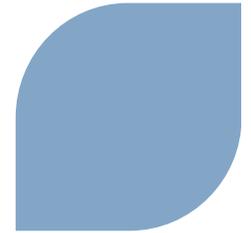
Agenda



▶ **Uranium Pricing, 2012 and early 2013 key findings**

▶ Uranium market trends

Uranium Market features



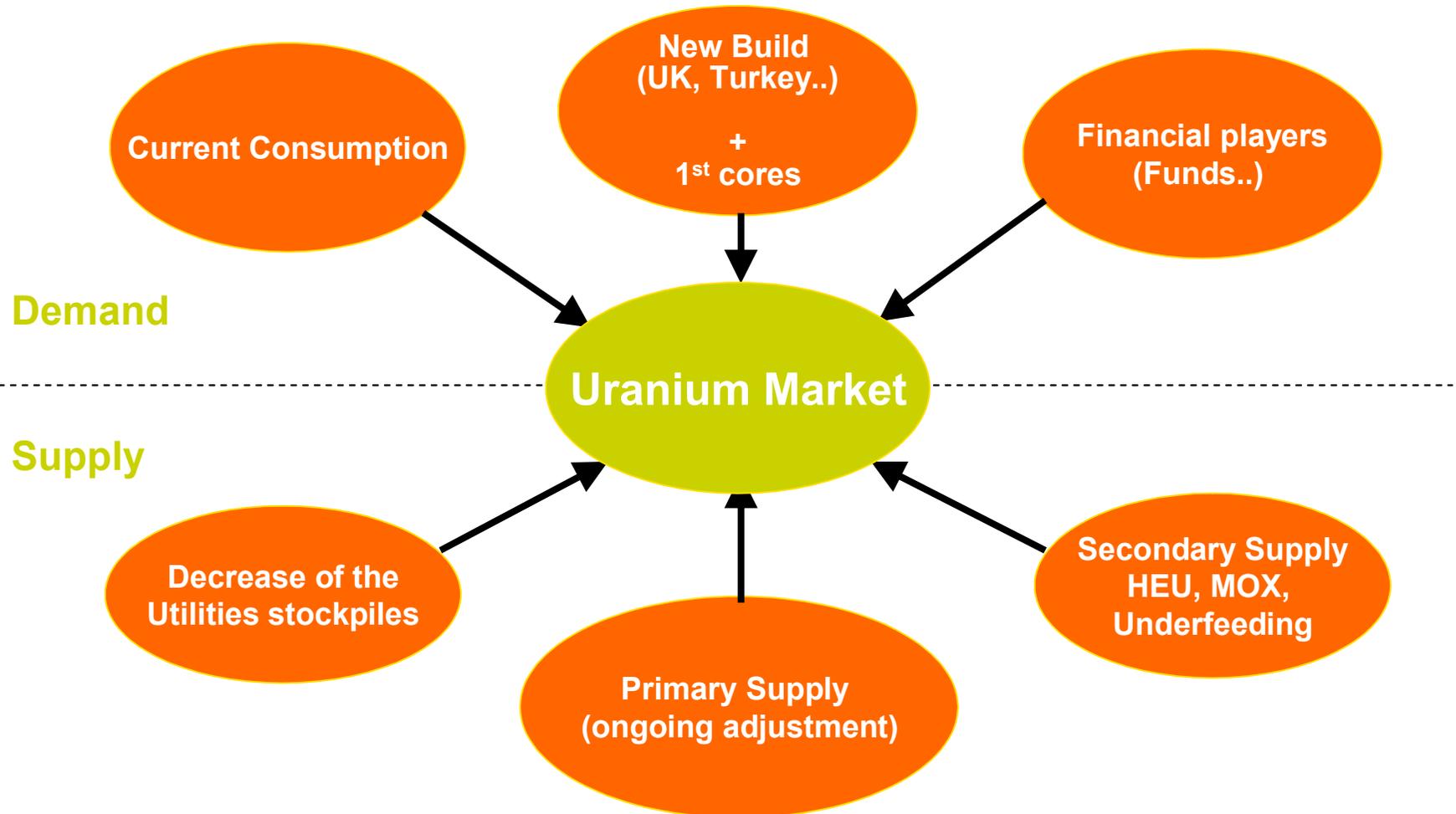
- ▶ **Large share of Long term contracts**
 - ◆ Difference with other metals markets

2 markets	Spot	Long term
	Single delivery within 3 to 18 months	Multi annual contract with deliveries from N+3 to N+10
Annual delivery volume	10% - 15% (~20 000 t in 2012)	85% - 90% (~65 000 t in 2012)
Average transaction volume	50-100 t ~ 5 MUSD	le 200 t/y on 5 years ~100 MUSD
Main customers	Utilities, Funds, Producers, Traders	Utilities
Purchasing criteria	Financial Opportunies: (inventory managment / speculative behaviours)	Security, reliability and diversification of supply, visibility of prices, diversified long term suppliers committed to the nuclear industry
Pricing mechanisms	Mainly Fixed price	Base Price (predictability) Market Price (at delivery date) Blend of both
AREVA positioning	AREVA subsidiary UG in Traders Top 3	AREVA in Suppliers Top 3
Current indicators	\$35/lbU3O8	\$50/lbU3O8

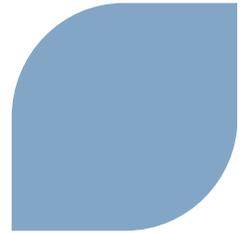
The Uranium Market today: 6 key drivers

Primary supply: 59,000t per year

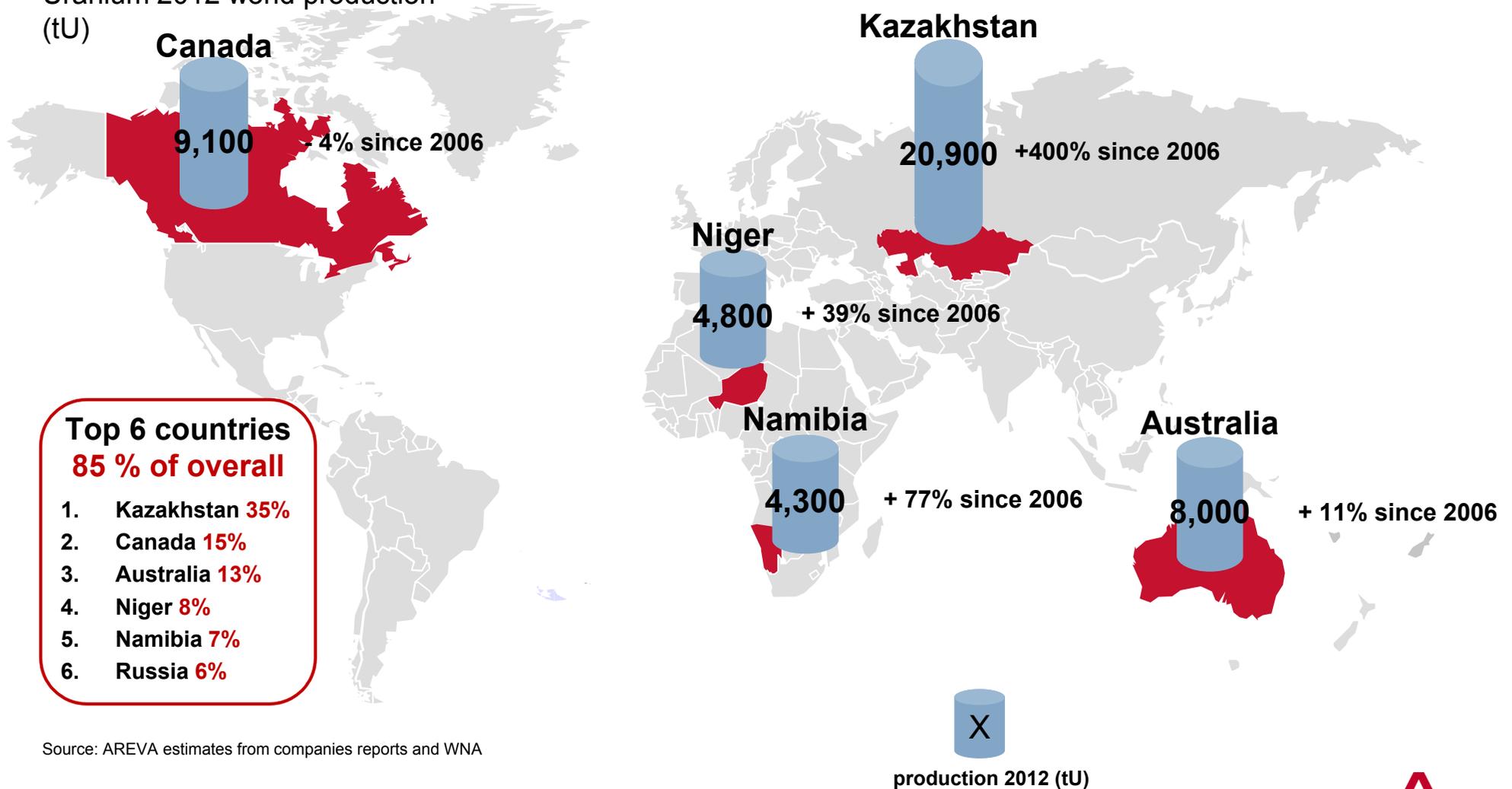
Demand: 52,000t per year



World production reached 59,000 tU in 2012 (+8% annual growth)

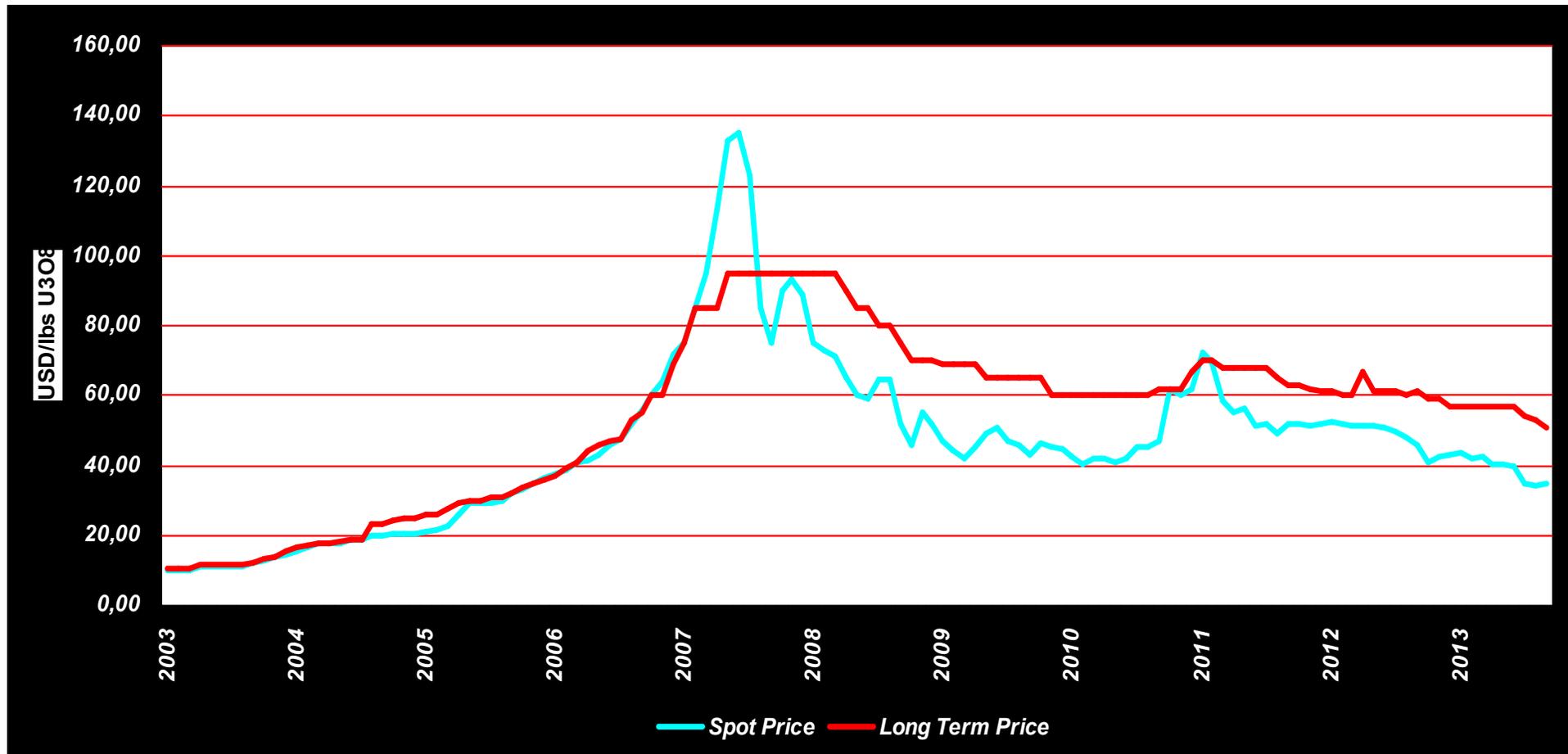


Uranium 2012 world production (tU)

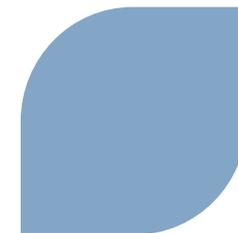


Source: AREVA estimates from companies reports and WNA

Uranium Price 2003-2013



Source TradeTech



Uranium production costs are driven upwards by technical and economical factors

Cost drivers evolution

Technical drivers

Deposit characteristics : deeper, lower grade

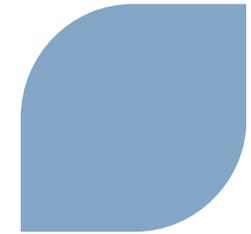
Lack of infrastructure / supply chain requires significant capex

Economic drivers

Inflation of inputs

Fiscal pressure, royalties

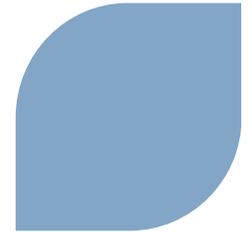
Regulations, Environmental constraints



Cash costs do not capture full mine costs



Bringing new production will demand a strong price signal covering mining cost at the right moment



New mines are challenging.. ...and most miners won't invest at any cost

Tim Gitzel, CEO Cameco Corp., July 30 2012
Speaking about Kintyre project, Australia
«For the project to be economical we would need a \$67 uranium price..[] »

Andrew Goode, Denison project director,
June 28 2012
"we need prices that are \$65 per pound U3O8 to make the Mutanga project feasible."

Bloomberg, July 30 2012
BHP Billiton Ltd., the world's biggest mining company, will delay approval of a \$33 billion [Olympic Dam] mine expansion in Australia for two years because of falling commodity prices

CIBC*; April 9 2012
Spot and term U3O8 prices are at US\$51.25/lb. and US\$60/lb., respectively. These price levels do not justify new mine investment and projects will be delayed. We believe that a U3O8 price of US\$70/lb. would be sufficient to bring on new mine supply.

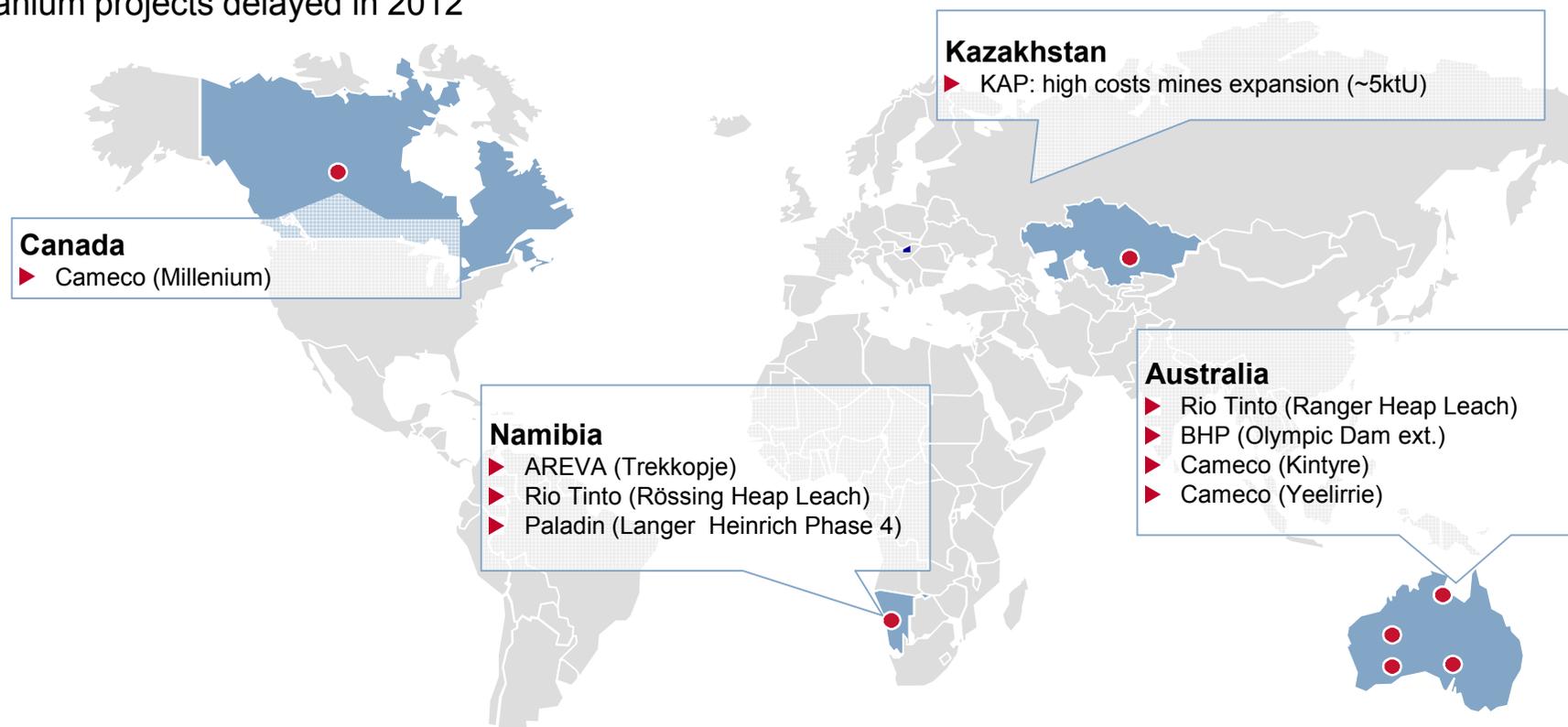


Prices will have to adjust to levels about **75 \$/lb U3O8** minimum to drive mining players to invest and bring online needed production by 2020

*Canadian Imperial Bank of Commerce

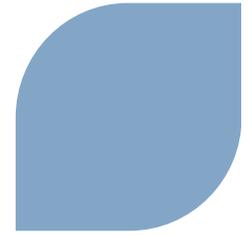
Quick reaction of producers to the post-Fukushima context: future supply has been and continue to be adjusted

Uranium projects delayed in 2012



As a consequence of Fukushima events, several projects – among the least competitive – have been delayed

Agenda



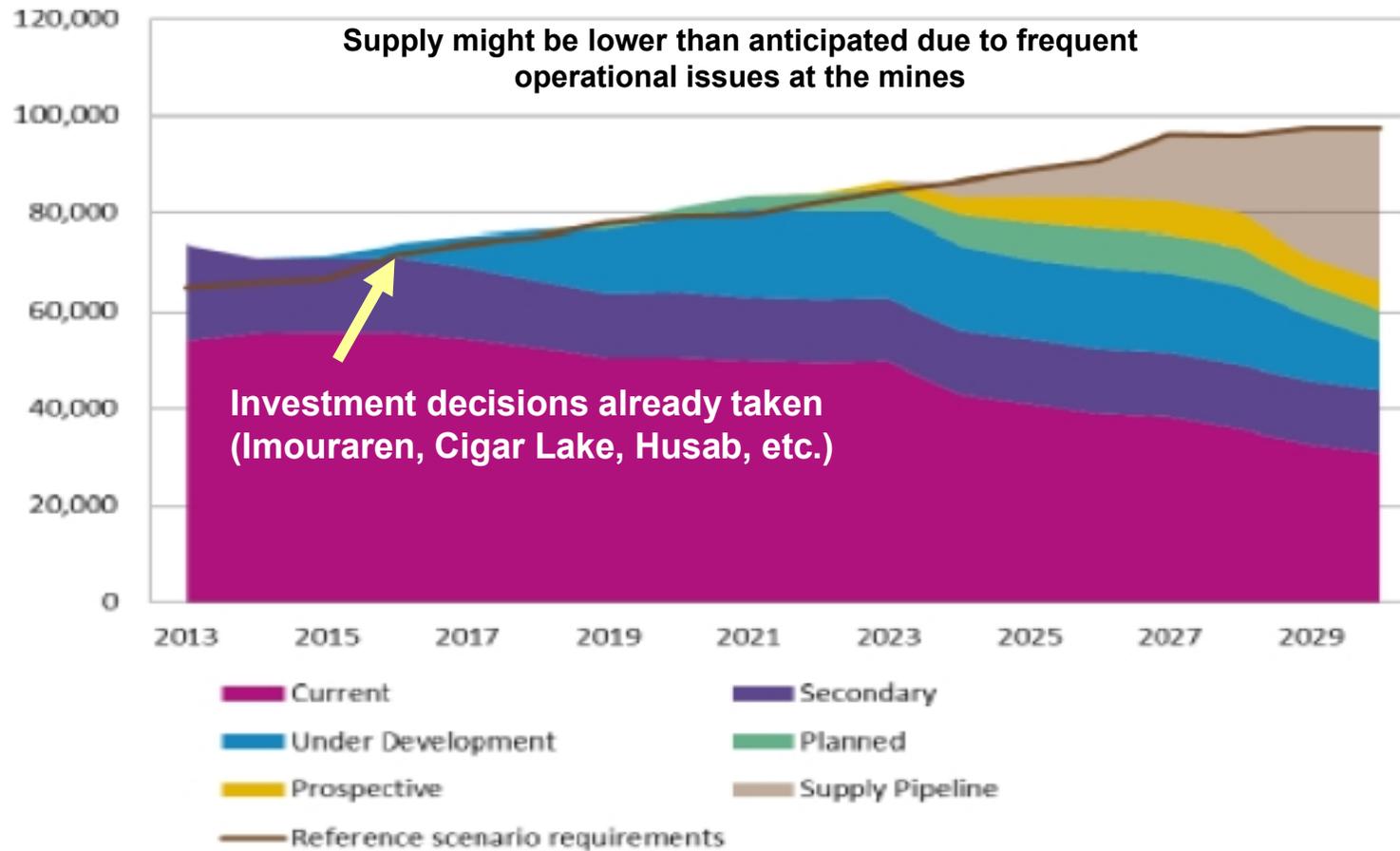
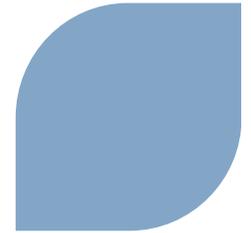
▶ 2012 and early 2013 key findings

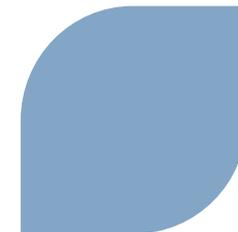
▶ **Uranium market trends**

Supply & demand forecasts 2013-2030

Market on the edge until 2020, need for new projects onwards

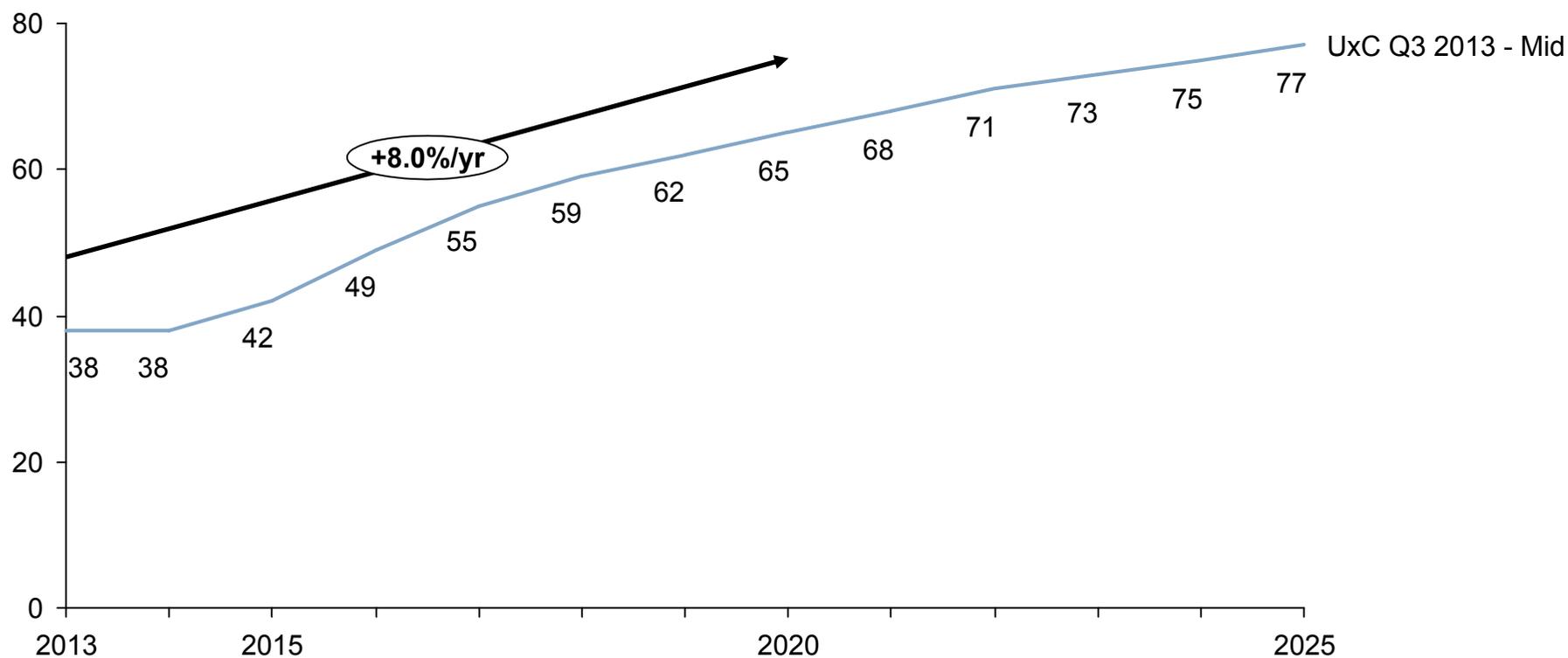
(Source WNA-2013)





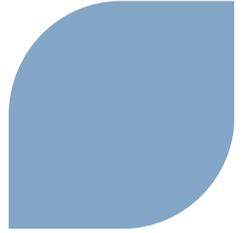
Uranium price is expected to grow by an average 8%/yr over 2013-20

Uranium spot price – UxC projections
(\$/lb, current money)



Source: UxC Q3 2013

CONCLUSION



- ▶ **Today, Uranium price do not allow to develop new Mining Projects**
- ▶ **Full costs need to be well understood, including exploration, development and site reclamation**
- ▶ **There are many risks associated with uranium production that need to be taken into account, some of which can be foreseen, some of which cannot**
 - ◆ Breakeven point for some existing capacities
 - ◆ Start-up and ramp-up uncertainties

- ▶ **Cost of existing and future production are rising : New investments will demand strong price signal to feed the market after 2020**

- ▶ **New projects are lower grades, deeper, etc.**
- ▶ **Numerous projects lack the necessary infrastructure**
- ▶ **Governments are capturing an increasing part of the investor's value**

- ▶ **Re-start schedule of Japanese reactors will be a key parameter for the equilibrium until 2020**

- ▶ **Increasing demand confirmed for next decade**

Muito Obrigado

