Navigating to the Land of Secure Conversion Supply

WNFM – Seville, Spain

June 2011

The Good Ship Conversion

? ? ?

Which Is It ?

The Good Ship Conversion

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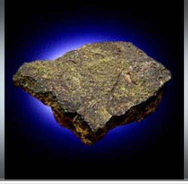
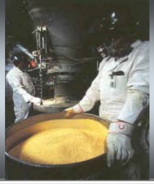
Which Is It ?


Metropolis Status

- **Update**
  - Labor
  - Operations
  - New capacity

Major Labor Issues

- **Cost Drivers**
  - **Medical**
  - **New Hire retiree benefits**
- **Productivity Issues**
  - **Outsourcing of certain functions**
  - **"Bid & Bump"**
- **Overtime – under negotiation**

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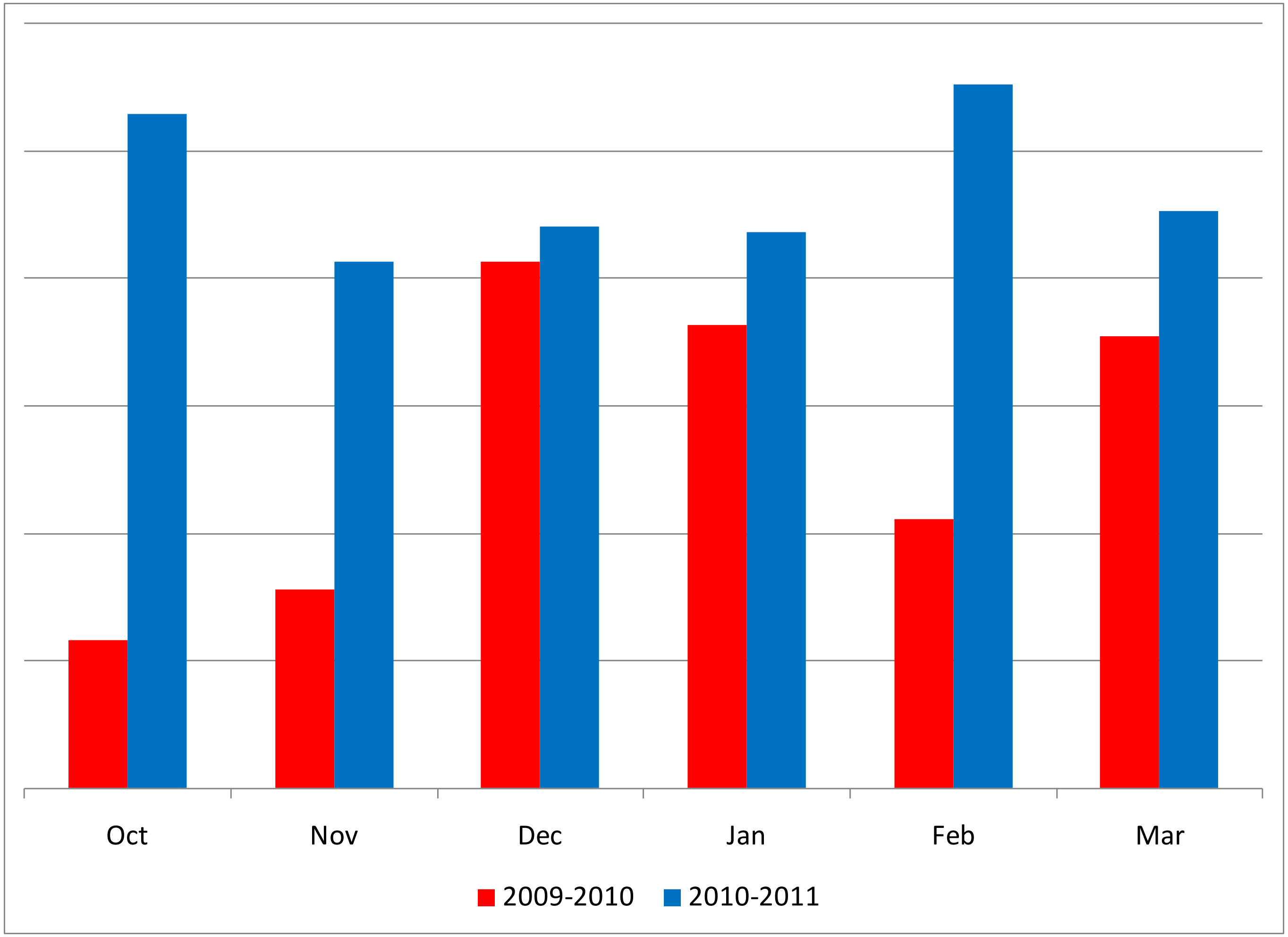
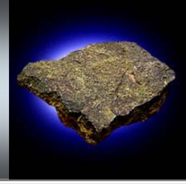
Demonstrated Performance



Significant UF_6 production improvements



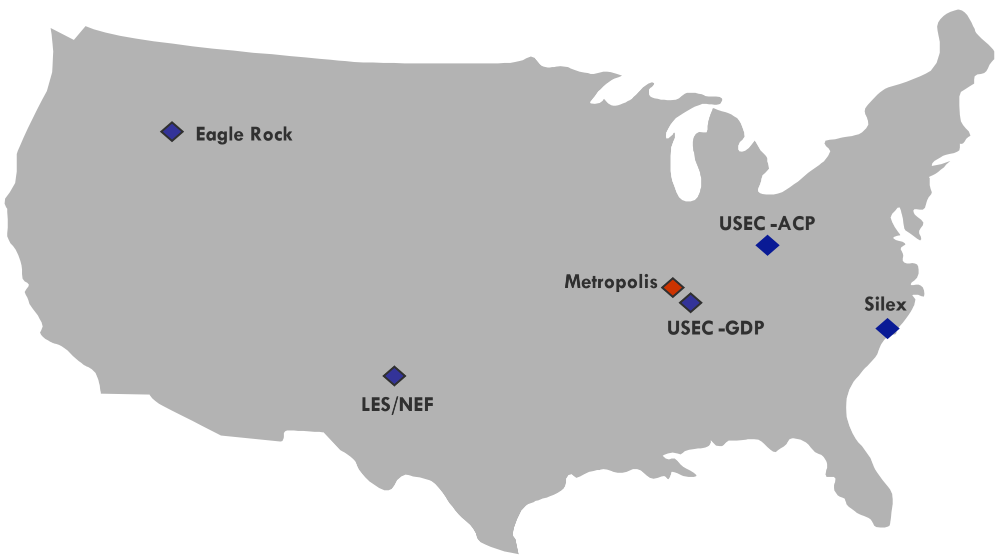


Operations: Recent CAPEX

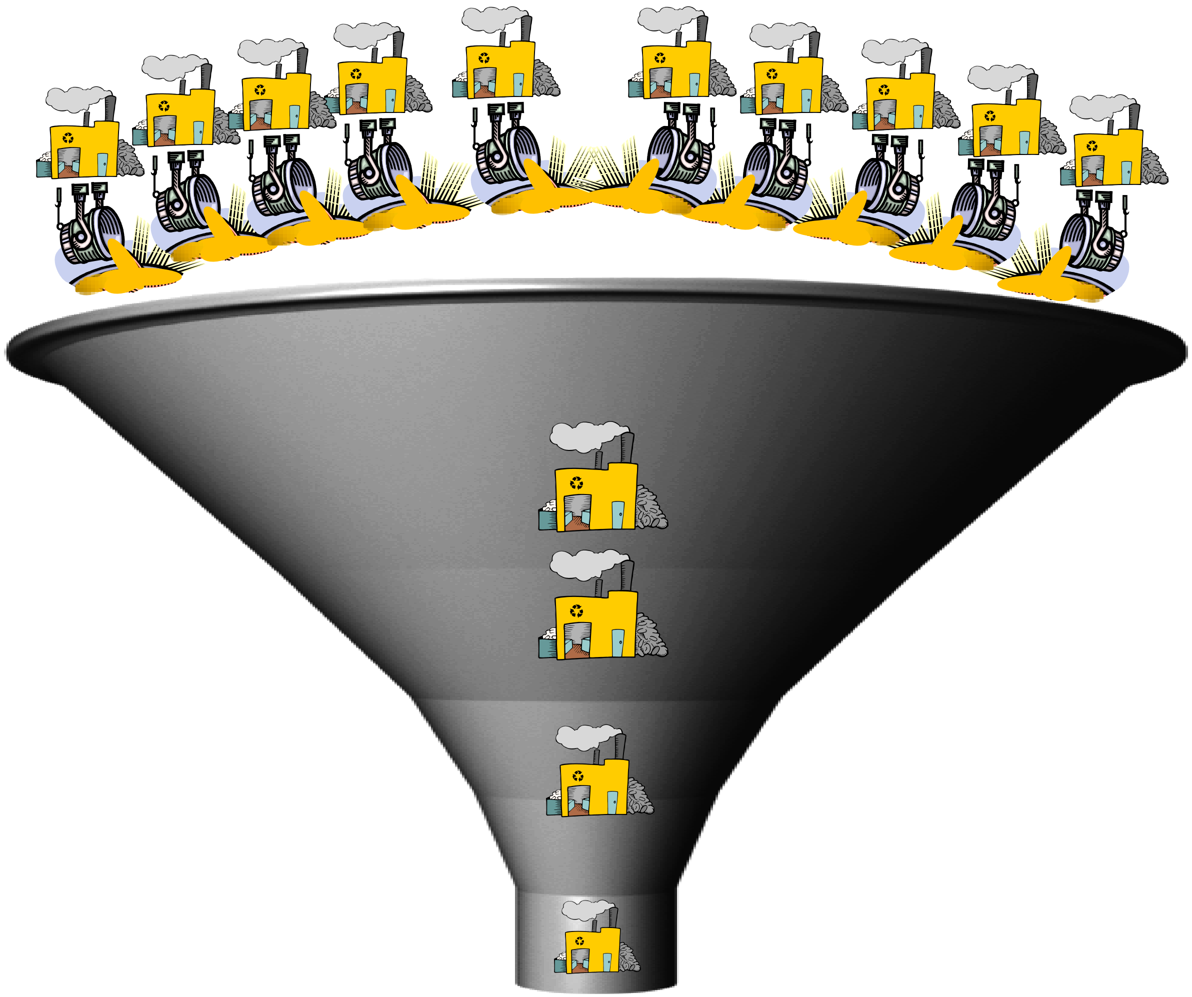
- 2005 – 2010 Focus: $70M on Fluorination & Distillation (UF_6)
- 2011 – 2015 Focus: $80M on Ore Preparation & Green Salt (UF_4)
- Goal: Improvements in
  - Reliability
  - Throughput
  - On-Stream factor
  - Controls
  - Waste management
- CAPEX: Expenditures for
  - Machines
  - Solids handling
  - Chemical process
  - Chemistry

Advantages of MTW Plant

- Dry conversion process
  - No nitric acid, no organic solvents
- Central location for new enrichment plants
- US converter supports largest & most open nuclear fuel market



Fuel Cycle Funnel



Stand-Alone Converter is "BFF" for Independent U_3O_8 Producer - ☺

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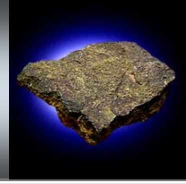
Buyer & Supplier Characteristics

Utility Wants	Integrated Supplier Has	Stand-Alone Supplier Has
Reliable Source	√	√
Supply Country Diversity	√	√
Process Diversity	√	√
Currency Diversity	√	√
Proximity to Enrichers	√	√
Strong Regulations	√	√
Open Market	√	√√√√√

Without stand-alone supplier would "conversion only" be available?

Additionally.....

BNFL Lesson: Even integrated company cannot guarantee conversion

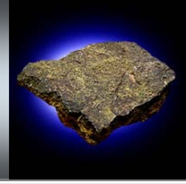




Role of Government Actions

- **Supportive – in Integrated Supplier Countries**
  - Provide low cost funds for marginal business
  - Strong State support in export markets
- **Destructive – in Stand-Alone Supplier Country**
  - Encourage sale of domestic & foreign gov't inventories thus frustrating functioning markets to the detriment of the sole domestic supplier
  - Welcome imports but unable to obtain access to foreign markets

Must think long term supply security





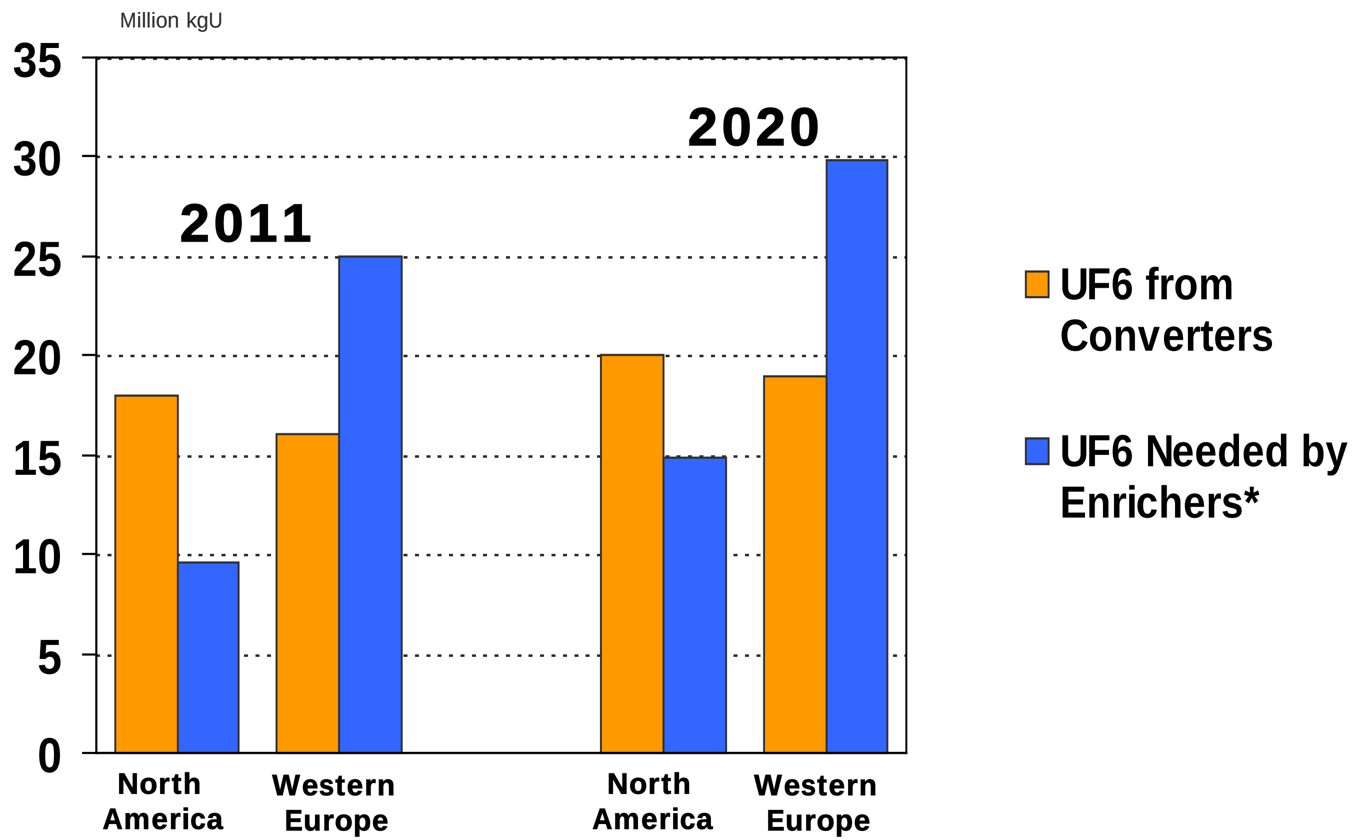
Examples of Destructive Government Intervention

- Ru-US HEU Agreement : ~150,000 mt UF_6 from 1995-2013
- Enricher Privatization : 50 mt weapons U & 7,000 mtU/UF_6
- DOE Sales and Barters : 2009 Sole Source Program
  - Barter sale of 1,314 mtU/UF_6 for Portsmouth D&D
- Possible tails re-enriching : May 2011
  - Energy & Revenue Enrichment Act of 2011 introduced
- Price Impact

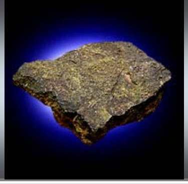
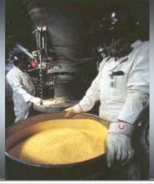
Period	Market	Drop	From, $/kgU	To $/kgU
Jan 98 - Nov 99	Spot	50 %	5.10	2.55
Jan 98 - Nov 99	Term	35 %	5.00	3.25
Jul 09 - Dec 09	Spot	26 %	7.50	5.50
Jul 09 - Dec 09	Term	10 %	12.25	11.00

Source: TradeTech

Conversion Imbalance



Source: ConverDyn, *Based on 4.4% Enrichment Level and 0.22% Tails Assay


ConverDyn Long Term Expansion Plans

- 2 yr feasibility for new build in Europe
  - What happened ?
- Expansion potential at Metropolis
  - 60 acres / 24 hectares in use
  - 1,040 acres / 421 hectares available
    - In receptive community
    - With NRC license

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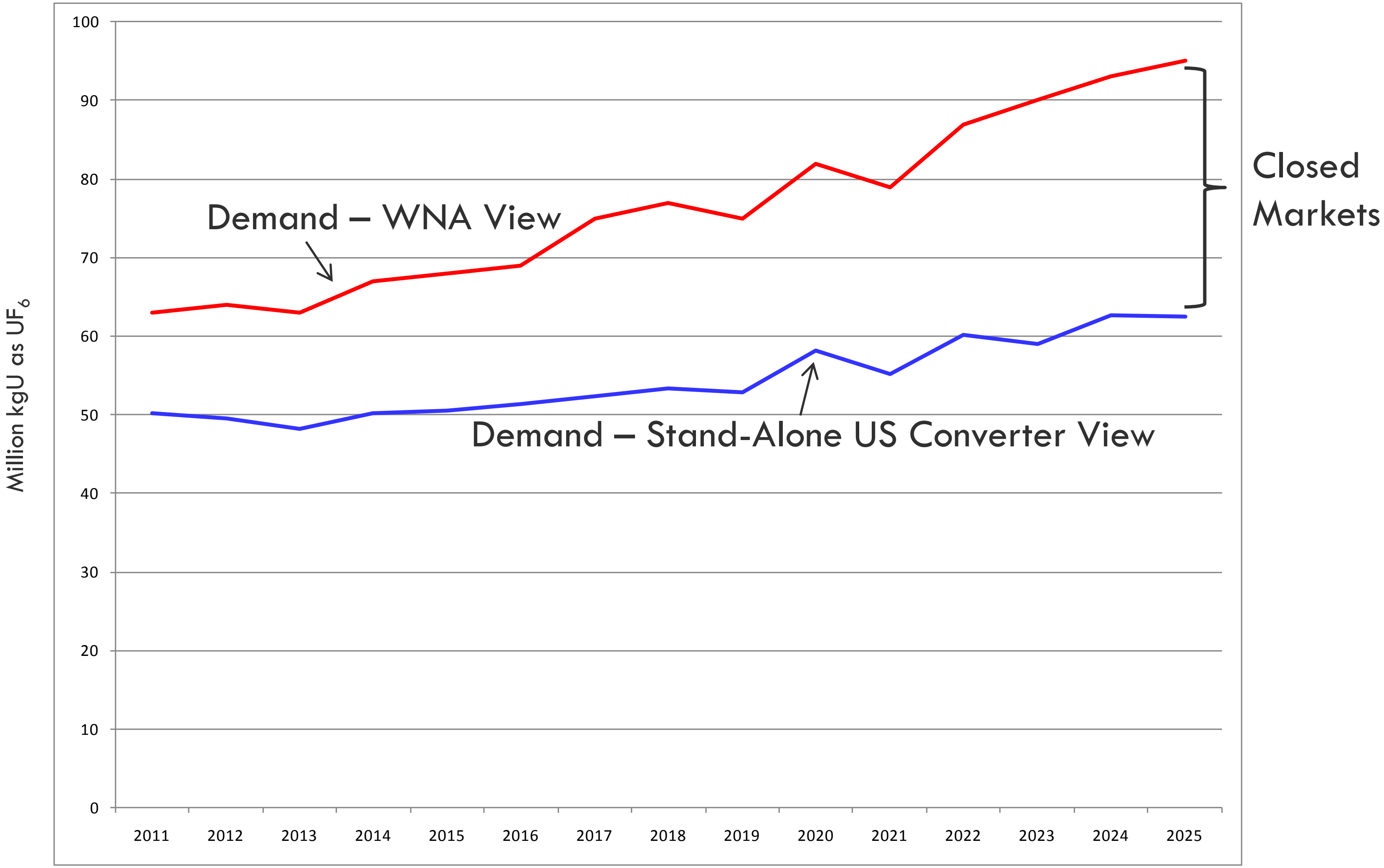
When Can Conversion Expand?

- Only when time is right
- When is right time ?
  - Supply & Demand shows new build needed, but
    - China – will be self sufficient
    - Russian new reactors – will be self sufficient
    - New Areva reactors – will be self sufficient
    - Other reactor vendors – TBD
- For stand alone converter
  - Who will support?
  - Expansion or New Build?

Conversion Demand



Source: WNA Reference Case , post-Fukushima.





To Expand ConverDyn Needs

- Open Markets
  - In regions with nuclear new build programs
- Financially Sound Economics
  - $$ needed for existing plant expansion
  - $$$$ needed for new build
  - Support for regulatory impacts
  - Clarity on disposal of government inventories





The Good Ship Conversion