

# “THE CASE FOR URANIUM ENRICHMENT IN AUSTRALIA”

By Dr CLARENCE J. HARDY  
MD, Nuclear Fuel Australia Ltd.  
Secretary, Australian Nuclear  
Association



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## AUSTRALIAN URANIUM RESOURCES AND PRODUCTION

### RESOURCES (2005 data + 2007/8)

AUSTRALIA	1,143,000 teU + 390,000	32% of world + 8%
KAZAKSTAN	816,000	22%
CANADA	444,000	12%
USA	342,000	9%

### PRODUCTION

PRODUCTION IN 2006-7    9,577 te U<sub>3</sub>O<sub>8</sub>    A\$658M VALUE  
(EQUIVALENT TO 23% OF WORLD PRODUCTION)

PRODUCTION (5 YEARS 2001-6)    47,524                    A\$2,100 M

CUSTOMERS:    USA, JAPAN, KOREA, TAIWAN, EU (7)

## **WORLD NUCLEAR POWER PROJECTIONS**

### **THE CURRENT SITUATION**

439 NP REACTORS IN OPERATION IN 30 COUNTRIES = 372 GWe  
33 NP REACTORS UNDER CONSTRUCTION AND 94 PLANNED

### **PROJECTED CAPACITY BY VARIOUS ORGANISATIONS GENERAL CONSENSUS**

INCREASED CAPACITY OF 20% BY 2020 (REF. SCENARIO)  
INCREASED CAPACITY OF 40% BY 2030 (REF. SCENARIO)

### **CONCLUSION**

**THERE WILL BE A CORRESPONDING INCREASE IN DEMAND  
FOR CONVERSION, ENRICHMENT AND  
FUEL FABRICATION SERVICES**

## MAJOR ENRICHMENT PLANTS IN OPERATION OR UNDER CONSTRUCTION

YEAR	2005	2010	2015	2020	2030
Units of te SWU					
<b>USA – USEC Diff.</b>	<b>6000</b>	<b>6000</b>	0	0	0
<b>USA – USEC Cent.</b>	0	<b>2000</b>	<b>3800</b>	<b>(5000 ?)</b>	<b>(10000 ?)</b>
<b>USA – HEU Supply</b>	<b>6100</b>	<b>5000</b>	0	0	0
<b>USA – NEF Cent.</b>	0	<b>1000</b>	<b>3000</b>	<b>(5000 ?)</b>	<b>(10000 ?)</b>
<b>USA – AREVA Cent.</b>	0	0	1000	3000	(5000 ?)
<b>France – Eurodif</b>	<b>7000</b>	<b>7000</b>	0	0	0
<b>France – Cent.</b>	0	<b>2000</b>	<b>7500</b>	<b>(10000 ?)</b>	<b>(15000 ?)</b>
Urenco – Tripartite	8100	10000	11000	(12000 ?)	(15000 ?)
Russia – Cent. (est.)	25000	25000	25000	25000	(30000 ?)
<b>Total</b>	<b>52200</b>	<b>58000</b>	<b>51300</b>	<b>(60000 ?)</b>	<b>(85000 ?)</b>

## THE WORLD ENRICHMENT SUPPLY/DEMAND BALANCE

YEAR	2005	2010	2015	2020	2030
	Units of te SWU				
Upper Scenario (WNA)	47660	55927	63242	72803	113626
<b>Reference (WNA)</b>	<b>47660</b>	<b>53328</b>	<b>56932</b>	<b>63493</b>	<b>83492</b>
Lower Scenario (WNA)	47660	43258	51133	51505	40824
<b>Nameplate Supply (NFA)</b>	<b>53825</b>	<b>59625</b>	<b>52925</b>	<b>(66325 ?)</b>	<b>(86625?)</b>
Cf. Reference Demand	6165 (s)	6297 (s)	<u>4007 (d)</u>	2832(s?)	1000(s?)
(s) = surplus; (d) = deficit					

## FEASIBILITY STUDY BY NUCLEAR FUEL AUSTRALIA LTD

NUCLEAR FUEL AUSTRALIA LTD WAS SET UP AS PUBLIC CO. IN FEB, 2007.

**OBJECTIVE** – PLAN, CONSTRUCT & OPERATE MULTINATIONAL CENTRIFUGE ENRICHMENT PLANT IN AUSTRALIA TO UPGRADE AUSTRALIAN URANIUM (WITH ASSOCIATED CONVERSION PLANT)

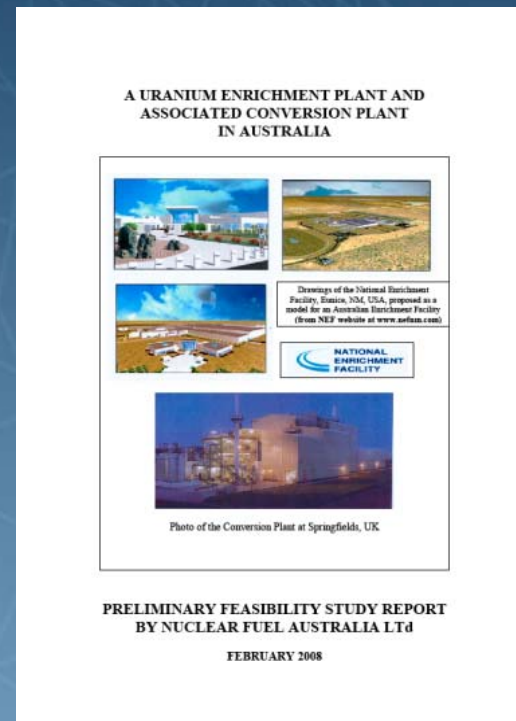
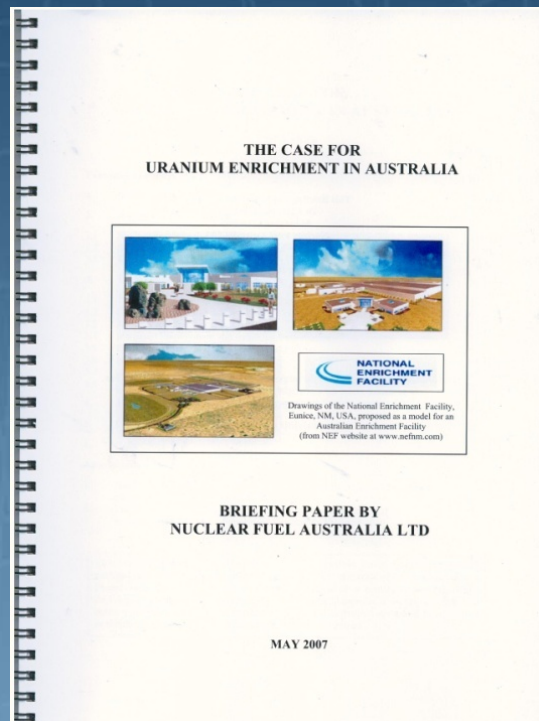
**NEW URENCO PLANT IN THE USA USED AS A MODEL**



# FEASIBILITY STUDY (CONTINUED)

**STAGE 1 – REPORT ON THE CASE FOR AN ENRICHMENT PLANT**  
**(Completed 2007 & sent to previous government)**

**STAGE 2 – REPORT ON PRE-FEASIBILITY STUDY**  
**(Completed 2008 and sent to present government)**



## FEASIBILITY STUDY (CONTINUED)

- **STAGE 3 – DISCUSSION OF STAGE 2 REPORT WITH ALL INTERESTED PARTIES WITH OBJECTIVE OF OBTAINING SUPPORT BY AUSTRALIAN GOVERNMENT, TECHNOLOGY SUPPLIERS AND FINANCIERS**
- **STAGE 4 – PREPARATION OF **DETAILED FEASIBILITY STUDY** INCLUDING ENVIRONMENTAL ASSESSMENT AND LICENCE APPLICATION TO REGULATORY BODY**
- **STAGE 5 - NEGOTIATION OF TREATIES, COMMERCIAL CONTRACTS FOR SITES, TECHNOLOGY AND SUPPLY TO CUSTOMERS**
- **STAGE 6 – **COMMITMENT TO CONSTRUCT - \$2.5B**  
**(TIMESCALE 2012-2017)****

# Benefits to Australia

- (1) Contribution to non-proliferation initiatives with new commercial multinational enrichment plant**
- (2) Adding value to Australia's large uranium resources**
- (3) Capital investment of \$2.5B offers opportunities for Australian companies to supply goods and services**
- (4) Employment of over 1200 workers in construction and over 300 in continued operations in regional Australia**
- (5) Expected profitable operation for owners (Cf. URENCO)**
- (6) Introduction of a high technology export industry**
- (7) Retention of depleted uranium in Australia for use in future advanced reactors**

# Benefits to the World

- (1) Contribution to non-proliferation initiatives with new commercial multinational enrichment plant and associated conversion plant in Australia which has excellent non-proliferation credentials and large uranium resources
- (2) Provision of new plant in the **Asia-Pacific Region** with its rapidly growing demand for conversion and enrichment services
- (3) Lower cost to customers for supply of a package of uranium, conversion and enrichment services from Australia **with lower transport distances in the Asia-Pacific region**

# Challenges

- (1) Persuade present Government that upgrading uranium in Australia is worth supporting as a contribution to improved non-proliferation initiatives, export revenue, jobs and capital expenditure in regional Australia.**
- (2) Persuade present Government that it should amend two Commonwealth Acts to remove restrictions on upgrading plants (and nuclear power) and thereby create a level playing field compared with the present large subsidies to clean coal technology, solar and wind technologies.**
- (3) The Government has abandoned its long-held restrictive policy on uranium mining so there is hope that it will abandon its long-held policy on upgrading and nuclear power.**