

International  
Nuclear  
Fuel  
Cycle  
Evaluation

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**INFCE**

INFCE/DEP.WG.4/30

PRESENT SITUATION AND FUTURE PROGRAMMES FOR REPROCESSING,

PLUTONIUM HANDLING AND RECYCLE

(Summary of questionnaire answers)

6th September 1979

INTERNATIONAL NUCLEAR FUEL CYCLE EVALUATION

WORKING GROUP 4: Reprocessing, Plutonium Handling, Recycle

SUB-GROUP 4A: Reprocessing

SUB-GROUP 4B: Plutonium Handling, Recycle

Present Situation and Future Programmes for  
Reprocessing, Plutonium Handling and Recycle

Technical Secretariat

The attached tables summarise the information received in replies to the April Questionnaire (INFCE/WG4/18(A,B)), together with modifications, corrections and additions subsequently made (shown in italics).

## Contents

	<u>Page</u>
Notes on Presentation	1
<b>1. Spent Fuel Arisings from Thermal Reactors</b>	
- Table 1.1 Stocks held at the end of 1977	2
- Table 1.2A Forecasts of Cumulative Arisings	3
- Table 1.2E Fissile Pu content of cumulative arisings	4
- Table 1.2C Forecasts of spent fuel in storage	5
- Table 1.2D Fissile Pu content of spent fuel in storage	6
<b>2. Reprocessing Plant Capacities and Throughputs</b>	
- Table 2.1 Plants in operation in 1977	7
- Table 2.2A Forecasts of plant capacities	8
- Table 2.2B Forecasts of plant throughputs	9
<b>3. Fissile Plutonium Separated from Reprocessed Fuel</b>	
- Table 3.1 Stocks and usage at the end of 1977	10
- Table 3.2A Forecasts of cumulative fissile Pu separated	11
- Table 3.2B Forecasts of fissile Pu stocks	12
- Table 3.3A Forecasts of usage in research	13
- Table 3.3B Forecasts of usage in thermal reactors	14
- Table 3.3C Forecasts of usage in fast reactors	15
- Table 3.3D Forecasts of other uses	16
<b>4. Storage of Plutonium</b>	
- Table 4.1 Stores in operation and planned	17
<b>5. Pu Recycle in Thermal Reactors</b>	
- Table 5.1A Plans and situation at the end of 1977	18
- Table 5.1B Forecasts of fissile Pu usage	19
- Table 5.1C Forecasts of savings in natural uranium	20
- Table 5.1D Forecasts of savings in separative work	21

## Notes on Presentation

1. In the following tables, the split between OECD and non OECD countries is solely to allow direct comparison with OECD publications, specifically the yellow book "Nuclear Fuel Cycle Requirements".
2. Where possible the tables have been numbered and lettered to correspond directly with the lines of data in the questionnaire. In certain cases however, information on the current situation has been separated from future estimates, e.g. in Tables 3.1 and 5.1A.
3. The entries for each country have been coded as follows:
  - blank = no response to questionnaire.
  - number = data obtained directly from the questionnaire response.
  - = quantity stated as zero.
  - \* = response but no data given.
  - ( ) = data estimated from other quantities given (usually by interpolation, e.g. between High and Low programmes).
4. Where entries in the questionnaire replies have been left blank, they have been assumed to be unknown unless it has been otherwise indicated that they are zero.
5. The totals are shown as approximate minima based on the available data. A question mark in this position merely indicates that no useful summation is possible from the information provided.
6. The information on reprocessing plants (Table 2.1) and plutonium stores (Table 4.1) is given in summary only. Further details may be obtained from the actual replies to the questionnaire.
7. Some general comments included with questionnaire replies are given in Table 1.1.

**TABLE 1.1 - Spent Fuel From Thermal Reactors Stored at End 1977 (to Heavy Metal)**

COUNTRY	te Heavy Metal	te Fissile Pu	General Comments
Belgium Denmark France German F.R. Ireland Italy Luxembourg Netherlands U.K.	64 • 280 46 54.6 50 + 270(1)	0.31 • 1.5 0.276 0.34 0.1 + 1.5(1)	UNGG fuel only, stored prior to reprocessing. No predictions possible beyond 2000. Forecasts beyond 1990 should be based on regional analysis. Magnox fuel not included. (1)From overseas reactors
<b>EEC</b>	> 495	> 2.5	
Austria Finland Greece Iceland Norway Portugal Spain Sweden Switzerland Turkey	- - - - - 155 55 91	- - - - - 0.48 0.25 0.5	No figures after 2000 can be given. Includes 102 te UNGG fuel containing 0.2 te fissile Pu.
<b>EUROPE</b>	> 796	> 3.7	
Canada U.S.A.	2360 3000	6.37 19	No definite plans to reprocess spent fuel. Industrial scale reprocessing deferred indefinitely.
<b>N. AMERICA</b>	5360	25	
Australia Japan New Zealand	- 300 -	- 2 -	No plans to introduce nuclear power stations.
<b>PACIFIC AREA</b>	300	2	
<b>TOTAL OECD</b>	> 6457	> 31.1	
India Mexico Philippines S. Africa	120 - - -	0.40 - - -	No data on existing plants or plutonium stocks Reprocessing and Pu recycle assumed but not definite.
<b>NON OECD</b>	> 120	> 0.4	
<b>TOTAL</b>	> 6577	> 31.5	

TABLE 1.2A - Cumulative spent fuel arisings (to heavy metal), Jan 1978 to end of year

COUNTRY	1985			1990			2000			2025		
	High	Ref	Low	High	Ref	Low	High	Ref	Low	High	Ref	Low
Belgium	700	700	700	1634	(1566)	1498	4794	(4216)	3638	19400	(15600)	11800
Denmark												
France	2900	(2900)	2900	8300	(8100)	7900	22000	(20500)	19000	56000	(49000)	42000
German F.R.	*	3200	*	*	7200	*	*	*	*	*	*	*
Ireland												
Italy	344	(344)	344	2885	(2508)	2131	*	*	*	*	*	*
Luxembourg												
Netherlands	*	158	*	*	560	*	*	1790	*	*	(*)	*
U.K.	1000	(1000)	1000	2300	(2300)	2300	9000	(8700)	8400	50000	(41000)	32000
REC	?	> 8200	?	?	> 22200	?	?	> 35000	?	?	> 105000	?
Austria												
Finland	390	390	390	790	760	730	2310	2010	1710	*	*	*
Greece												
Iceland												
Norway												
Portugal												
Spain	1080	955	845	2985	2630	2370	*	*	*	*	*	*
Sweden	1440	(1150)	860	2690	(2030)	1370	*	*	*	*	*	*
Switzerland	*	787	*	*	1474	*		3164	*	*	*	*
Turkey												
EUROPE	?	> 500	?	?	> 29000	?	?	> 40200	?	?	?	?
Canada	9300	9300	9200	18900	18900	18600	68700	64900	60400	409000	314000	241000
U.S.A.	*	18800	16400	*	38300	34400	*	101400	*	*	*	*
N.AMERICA	?	28100	25500	?	57200	53000	?	166300	?	?	?	?
Australia	-	-	-	-	-	-	-	-	-	-	-	-
Japan	*	3900	*	*	8300	*	*	~ 30000	*	*	*	*
New Zealand												
PACIFIC AREA	?	> 3900	?	?	> 8300	?	?	30000	?	?	?	?
TOTAL OECD	?	> 43500	?	?	> 94500	?	?	236500	?	?	?	?
India	1200	(1050)	900	2700	(2400)	2100	10000	(7900)	5800	*	*	*
Mexico	100	100	-	*	300	*	*	700	*	*	1100	*
Philippines	*	(64)	*	*	(142)	*	*	(221)	*	*	*	*
S. Africa	70	70	23	390	390	250	1880	1530	1170	*	*	*
Argentina (1)	(800)	(600)	(400)	(1500)	(1200)	(900)	(2750)	(2300)	(1900)	*	*	*
R of Korea (1)	*	*	*	*	*	*	*	15000	*	*	*	*
NON OECD	?	> 1800	?	?	> 4430	?	?	> 27500	?	?	?	?
TOTAL	?	> 45300	?	?	> 98930	?	?	> 264000	?	?	?	?

TABLE 1.2B - Estimated fissile Pu content of cumulative spent fuel arisings (te)

COUNTRY	1985			1990			2000			2025		
	High	Ref	Low	High	Ref	Low	High	Ref	Low	High	Ref	Low
Belgium	4.57	4.57	4.57	10.34	(10.00)	9.65	30.5	(26.9)	23.3	123	(99)	75
Denmark												
France	20	(20)	20	55	(52)	50	145	(135)	125	365	(320)	275
German F.R.	*	(18)	*	*	(40)	*	*	*	*	*	*	*
Ireland												
Italy	2.06	(2.06)	2.06	17.3	(15.0)	12.8	*	*	*	*	*	*
Luxembourg												
Netherlands	*	0.68	*	*	3.14	*	*	10.0	*	*	(*)	*
U.K.	2.5	(2.5)	2.5	6	(6)	6	30	(29)	28	200	(160)	120
EEC	?	> 48	?	?	> 125	?	?	> 200	*	?	> 550	?
Austria												
Finland	2.3	2.3	2.3	4.7	4.6	4.4	13.9	12.1	10.3	*	*	*
Greece												
Iceland												
Norway												
Portugal												
Spain	6.80	6.02	5.32	18.81	16.57	14.93	*	*	*	*	*	*
Sweden	8.3	(6.5)	4.8	15.5	(11.6)	7.7	*	*	*	*	*	*
Switzerland	*	4.2	*	*	8.3	*	*	18.8	*	*	*	*
Turkey												
EUROPE	?	> 68	?	?	> 165	?	?	?	?	?	?	?
Canada	25.1	25.1	24.8	51.0	51.0	50.2	185	175	163	1104	848	651
U.S.A.	*	*	*	*	*	*	*	*	*	*	*	*
N.AMERICA	?	> 25	?	?	> 50	?	?	?	?	?	?	?
Australia	-	-	-	-	-	-	-	-	-	-	-	-
Japan	*	23	*	*	50	*	*	~ 200	*	*	*	*
New Zealand												
PACIFIC AREA	?	23	?	?	50	?	?	~ 200	?	?	?	?
TOTAL OECD	?	> 116	?	?	> 265	?	?	> 400	?	?	?	?
India	3.5	(3.1)	2.8	7.7	(6.9)	6.1	47	(36)	25	*	*	*
Mexico	0.56	0.56	-	*	1.68	*	*	3.92	*	*	6.15	*
Philippines	*	*	*	*	*	*	*	*	*	*	*	*
S. Africa	0.55	0.55	0.12	3.1	3.1	2.0	16.0	13.2	10.0	*	*	*
NON OECD	?	> 4	?	?	> 11	?	?	> 52	?	?	?	?
TOTAL	?	> 120	?	?	> 266	?	?	> 452	?	?	?	?

**TABLE 1.2C - Estimated spent fuel in storage at end of year (to heavy metal)**

COUNTRY	1985			1990			2000			2025		
	High	Ref	Low	High	Ref	Low	High	Ref	Low	High	Ref	Low
Belgium	•	516	•	917	(849)	781	1118	(931)	744	2275	(1712)	1150
Denmark	•		•	•		•	•		•		•	
France (1)	•	(500)	•	•	(1000)	•	•	(1000)	•	•	(1000)	•
German F.R.	•	800	•	•	4800	•	•	•	•	•	•	•
Ireland	•		•	•		•	•		•		•	
Italy (2)	344	(344)	344	2885	(2508)	2131	•	•	•	•	•	•
Luxembourg	•		•	•		•	•		•		•	
Netherlands	•	17.5	•	•	87.5	•	•	122.5	•	•	(•)	•
U.K. (3)	1050	(1050)	1050	1250	(1250)	1250	6000	•	•	•	•	•
EEC	?	> 3200	?	?	> 10200	?	?	> 2053.5	?	?	?	?
Austria	•		•	•		•	•		•		•	
Finland	340	340	340	610	420	390	1870	580	460	•	•	•
Greece	•		•	•		•	•		•		•	
Iceland	•		•	•		•	•		•		•	
Norway	•		•	•		•	•		•		•	
Portugal	•		•	•		•	•		•		•	
Spain	1040	915	805	2945	2590	2330	•	•	•	•	•	•
Sweden	1050	(1050)	•	2020	(2020)	•	•	•	•	•	•	•
Switzerland	•	273	•	•	710	•	•	2460	•	•	•	•
Turkey	•		•	•		•	•		•		•	
EUROPE	?	> 5800	?	?	> 15900	?	?	5093	?	?	?	?
Canada (2)	9300	9300	9200	18900	18900	18600	68700	64900	60400	40900	314000	241000
U.S.A. (2)	•	18800	16400	•	38300	34400	•	101400	•	•	•	•
N.AMERICA	?	28100	25600	?	57200	53000	?	166300	?	?	?	?
Australia	-	-	-	-	-	-	-	-	-	-	-	-
Japan	*	1500	*	*	2700	*	*	~ 0 <sup>(4)</sup>	*	*	*	*
New Zealand	•		•	•		•	•		•		•	
PACIFIC AREA	?	1500	?	?	2700	?	?	~ 0	?	?	?	?
TOTAL OECD	?	> 35400	?	?	> 75800	?	?	176486	?	?	?	?
India	1100	(950)	800	1600	(1300)	1000	(2800)	(2500)	2200	•	•	•
Mexico (2)	100	100	-	•	300	•	•	700	•	•	1100	•
Philippines	•	•	•	•	•	•	•	•	•	•	•	•
S. Africa	47	47	23	77	77	46	260	135	106	•	•	•
NON OECD	?	> 1100	?	?	> 1677	?	?	> 3000	?	?	?	?
TOTAL	?	> 36500	?	?	> 77477	?	?	179486	?	?	?	?

(1) fuel stored prior to reprocessing (estimates based on around 1 year cooling)

(2) countries indicating no reprocessing (quantities as in Table 1.2A)

(3) post 2000 figures will depend on any future decision regarding the installation of fast reactors



TABLE 1.2D - Estimated fissile Pu content of spent fuel in storage (te)

COUNTRY	1985			1990			2000			2025		
	High	Ref	Low	High	Ref	Low	High	Ref	Low	High	Ref	Low
Belgium	..*	3.43	*	5.98	(5.64)	5.29	7.3	(6.2)	5.1	15	(11.5)	7.9
Denmark												
France (1)	*	(3)	*	*	(6)	*	*	(6)	*	*	(6)	*
German F.R.	*	*	*	*	*	*	*	*	*	*	*	*
Ireland												
Italy (2)	2.06	(2.06)	2.06	17.3	(15.0)	12.5	*	*	*	*	*	*
Luxembourg												
Netherlands	*	0.10	*	*	0.49	*	*	0.69	*	*	(*)	*
U.K. (3)	2.6	(2.6)	2.6	3.5	(3.5)	3.5	21	(21)	*	*	*	*
REC	?	>11	?	?	>31	?	?	>33	?	?	?	?
Austria												
Finland	2.0	2.0	2.0	3.7	2.5	2.3	11.2	3.5	2.8	*	*	*
Greece												
Iceland												
Norway												
Portugal												
Spain	6.55	5.76	5.07	18.55	16.32	14.68	*	*	*	*	*	*
Sweden	6.0	(6.0)	*	11.5	(11.5)	*	*	*	*	*	*	*
Switzerland	*	1.6	*	*	4.3	*	*	14.8	*	*	*	*
Turkey												
EUROPE	?	>27	?	?	>65	?	?	>52	?	?	?	?
Canada (2)	25.1	25.1	24.8	51.0	51.0	50.2	185	175	163	1104	848	651
U.S.A. (2)	*	*	*	*	*	*	*	*	*	*	*	*
N.AMERICA	?	>25	?	?	>50	?	?	>175	?	?	?	?
Australia	-	-	-	-	-	-	-	-	-	-	-	-
Japan	*	9	*	*	16	*	*	~0	*	*	*	*
New Zealand												
PACIFIC AREA	?	9	?	?	16	?	?	~0	?	?	?	?
TOTAL OECD	?	>61	?	?	>132	?	?	>227	?	?	?	?
India	3.2	(2.8)	2.5	4.7	(3.9)	3.1	15.8	(13.1)	10.5	*	*	*
Mexico	0.56	0.56	-	*	1.68	*	*	3.92	*	*	6.16	*
Philippines	*	*	*	*	*	*	*	*	*	*	*	*
S. Africa	0.43	0.43	0.12	0.53	0.53	0.32	2.3	1.3	1.0	*	*	*
NON OECD	?	>3	?	?	>6	?	?	>18	?	?	?	?
TOTAL	?	>64	?	?	>138	?	?	>245	?	?	?	?

- (1) fuel stored prior to reprocessing (estimates based on around 1 year cooling)  
 (2) countries indicating no reprocessing (quantities as in Table 1.2B)  
 (3) post 2000 figures will depend on any future decision regarding the installation of fast reactors

**TABLE 2.1 - Reprocessing Plants in Operation 1977**

COUNTRY	PLANT	Type Of Fuel	Capacity te p.a. heavy metal	Throughput te p.a. heavy metal
Belgium	EUROCHEMIC DESSEL-MOL	LWR $\leq 5\%$ $^{235}$ MTR $\leq 93\%$ $^{235}$	75 1.25	(stand by since 1974)
France (1)(2)	LA HAGUE HAO	Oxide	(depends on fuel)	(no French fuel)
German F.R.	WAK	LWR	35	16
Italy (2)	(Pilot plants only)	•	•	•
Netherlands	-	-	-	-
U.K. (1)	-	-	-	-
Finland	-	-	-	-
Spain	PLANTA CALIENTE M-1	MTR	0.3	(closed in 1970)
Sweden	-	-	-	-
Switzerland	-	-	-	-
Canada	-	-	-	-
U.S.A.	(No industrial plants)	-	-	-
Australia	-	-	-	-
Japan (2)	PNC TOKAI	LWR	210	•
India (2)	TROMBAY TARAPUR	U-metal oxide	30 100	• (being commissioned)
Mexico	-	-	-	-
Philippines	-	-	-	-
S. Africa	-	-	-	-

(1) Plants for reprocessing natural uranium fuelled gas cooled reactors are not included.

TABLE 2.2A - Reprocessing Plant Design Capacities (oxide fuel) te p.a.

COUNTRY	1985			1990			2000			2025		
	High	Ref	Low	High	Ref	Low	High	Ref	Low	High	Ref	Low
Belgium	*	100	*	*	100	*	*	*	*	*	*	*
Denmark	*		*	*		*	*	*	*	*	*	*
France (1)	*	1600	*	*	2400	*	*	800	*	*	*	*
German F.R.	*	35	*	*	(1435)	*	*	*	*	*	*	*
Ireland												
Italy	-	-	-	1500	1000	500	*	*	*	*	*	*
Luxembourg												
Netherlands(2)	-	-	-	-	-	-	-	-	-	*	*	*
U.K.	-	-	-	1200	1200	1200	*	*	*	*	*	*
<b>EEC</b>	<b>?</b>	<b>&gt;1900</b>	<b>?</b>	<b>?</b>	<b>&gt;6120</b>	<b>?</b>	<b>?</b>	<b>?</b>	<b>?</b>	<b>?</b>	<b>?</b>	<b>?</b>
Austria	-	-	-	-	-	-	-	-	-	*	*	*
Finland (2)										*	*	*
Greece										*	*	*
Iceland										*	*	*
Norway										*	*	*
Portugal										*	*	*
Spain	-	-	-	*	4	*	*	(1200)	*	*	*	*
Sweden (2)	-	-	-	-	-	-	*	*	*	*	*	*
Switzerland(2)	-	-	-	-	-	-	-	-	-	*	*	*
Turkey										*	*	*
<b>EUROPE</b>	<b>?</b>	<b>&gt;1900</b>	<b>?</b>	<b>?</b>	<b>&gt;6120</b>	<b>?</b>	<b>?</b>	<b>?</b>	<b>?</b>	<b>?</b>	<b>?</b>	<b>?</b>
Canada	-	-	-	-	-	-	-	-	-	-	-	-
U.S.A.	-	-	-	-	-	-	*	*	*	*	*	*
<b>N.AMERICA</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>?</b>	<b>?</b>	<b>?</b>	<b>?</b>	<b>?</b>	<b>?</b>
Australia	-	-	-	-	-	-	-	-	-	-	-	-
Japan	*	210	*	1700	(1500)	1200	*	*	*	*	*	*
New Zealand										*	*	*
<b>PACIFIC AREA</b>	<b>?</b>	<b>210</b>	<b>?</b>	<b>1700</b>	<b>(1500)</b>	<b>1200</b>	<b>?</b>	<b>?</b>	<b>?</b>	<b>?</b>	<b>?</b>	<b>?</b>
<b>TOTAL OECD</b>	<b>*</b>	<b>&gt;2100</b>	<b>*</b>	<b>*</b>	<b>&gt; 7600</b>	<b>*</b>	<b>*</b>	<b>*</b>	<b>*</b>	<b>*</b>	<b>*</b>	<b>*</b>
India	100	(100)	100	200	(200)	200	200	(200)	200	*	*	*
Mexico	*	-	-	*	*	*	*	-	*	*	*	*
Philippines	*	*	*	*	*	*	*	*	*	*	*	*
S. Africa	-	-	-	*	*	*	*	*	*	*	*	*
<b>NON OECD</b>	<b>?</b>	<b>&gt;100</b>	<b>?</b>	<b>?</b>	<b>&gt;200</b>	<b>?</b>	<b>?</b>	<b>&gt; 200</b>	<b>?</b>	<b>?</b>	<b>?</b>	<b>?</b>
<b>TOTAL</b>	<b>?</b>	<b>&gt;2200</b>	<b>?</b>	<b>?</b>	<b>&gt; 7800</b>	<b>?</b>	<b>?</b>	<b>?</b>	<b>?</b>	<b>?</b>	<b>?</b>	<b>?</b>

(1) Based on 10 yr plant lifetime.

(2) No programme for domestic reprocessing.

**TABLE 2.2B-Reprocessing Plant Throughputs (oxide fuel) to p.a.**

COUNTRY	1985			1990			2000			2025		
	High	Ref	Low	High	Ref	Low	High	Ref	Low	High	Ref	Low
Belgium	75	70	60	75	70	60	*	*	*	*	*	*
Denmark	*	1000	*	*	1500	*	*	800	*	*	*	*
France (1)	*	20	*	1420	(1420)	*	*	*	*	*	*	*
German F.R.	*	20	*	1420	(1420)	*	*	*	*	*	*	*
Ireland	-	-	-	1200	800	300	*	*	*	*	*	*
Italy	-	-	-	1200	800	300	*	*	*	*	*	*
Luxembourg	-	-	-	-	-	-	-	-	-	*	*	*
Netherlands(2)	-	-	-	-	-	-	-	-	-	*	*	*
U.K.	-	-	-	600	600	600	*	*	*	*	*	*
REC	?	>1090	?	?	>4400	?	?	?	?	?	?	?
Austria	-	-	-	-	-	-	-	-	-	*	*	*
Finland(2)	-	-	-	-	-	-	-	-	-	*	*	*
Greece	-	-	-	-	-	-	-	-	-	*	*	*
Iceland	-	-	-	-	-	-	-	-	-	*	*	*
Norway	-	-	-	-	-	-	-	-	-	*	*	*
Portugal	-	-	-	-	-	-	-	-	-	*	*	*
Spain	-	-	-	*	2.0	*	*	(750)	*	*	*	*
Sweden (2)	-	-	-	-	-	-	*	*	*	*	*	*
Switzerland(2)	-	-	-	-	-	-	-	-	-	*	*	*
Turkey	-	-	-	-	-	-	-	-	-	*	*	*
EUROPE	?	>1090	?	?	>4400	?	?	?	?	?	?	?
Canada	-	-	-	-	-	-	-	-	-	*	*	*
U.S.A.	-	-	-	-	-	-	*	*	*	*	*	*
N.AMERICA	-	-	-	-	-	-	*	*	*	*	*	*
Australia	-	-	-	-	-	-	-	-	-	-	-	-
Japan	*	210	*	800	(700)	600	-	-	-	-	-	-
New Zealand	-	-	-	-	-	-	-	-	-	-	-	-
PACIFIC AREA	?	210	?	800	(700)	600	?	?	?	?	?	?
TOTAL OECD	?	>1300	?	?	>5100	?	?	?	?	?	?	?
India	(100)	(100)	(100)	(200)	(200)	(200)	(200)	(200)	(200)	*	*	*
Mexico	*	-	-	*	*	*	*	*	*	*	*	*
Philippines	*	*	*	*	*	*	*	*	*	*	*	*
S. Africa	-	-	-	*	*	*	*	*	*	*	*	*
NON OECD	?	>100	?	*	>200	*	*	>200	*	?	?	?
TOTAL	?	>1400	?	?	>5300	?	?	?	?	?	?	?

(1) Based on 10 year plant lifetime.

(2) No programme for domestic reprocessing.

TABLE 3.1 - Stocks and Usage of Separated Fissile Pu at the end of 1977

COUNTRY	Total Stocks (te)	Held as Fabricated Fuel (te)	Being used in research (kg)	Being recycled in Thermal Reactors (te)	Being recycled in Fast Reactors (te)
Belgium (3)	0.63	0.03	70	0.06	-
Denmark	*	*	840(1)	-	-
France	0.4	0.15	1175(2)	0.5	0.325
German F.R.					
Ireland					
Italy	1	(0.3)	(50)	0.5	-
Luxembourg					
Netherlands	-	-	-	-	-
U.K.	7	-	1500	-	1.1
EEC	> 9	> 0.5	> 3600	> 1.0	> 1.4
Austria					
Finland	-	-	-	-	-
Greece					
Iceland					
Norway					
Portugal					
Spain	10 <sup>-4</sup>	-	-	-	-
Sweden	-	-	7	-	-
Switzerland	0.120	0.112	88	-	-
Turkey					
EUROPE	> 9	> 0.6	> 3700	> 1.0	> 1.4
Canada	*	*	*	*	-
U.S.A.	11.0	5.0	5500	-	2.5
N. AMERICA	> 11	> 5	> 5500	-	> 2.5
Australia		-	2	-	-
Japan	0.9	0.7	600	0.1	0.2
New Zealand					
PACIFIC AREA	0.9	0.7	600	0.1	0.2
TOTAL OECD	> 21	> 6	> 10000	> 1.0	> 4.1
India	*	*	*	-	-
Mexico	-	-	-	-	-
Philippines	-	-	-	-	-
S. Africa	-	-	-	-	-
NON OECD	?	?	?	-	-
TOTAL	> 21	> 6	> 10000	> 1.0	> 4.1

(1) Fast reactor research

(2) includes quantities being recycled in thermal and fast reactors

(3) does not include quantities belonging to other countries.

TABLE 3.2A - Cumulative fissile Pu separated from reprocessed fuel (post Jan. 1978) te

COUNTRY	1985			1990			2000			2025			
	High	Ref	Low	High	Ref	Low	High	Ref	Low	High	Ref	Low	
Belgium	•	1.45	•	•	4.67	•	23.16	(20.7)	18.23	•	108	(88)	67.1
Denmark													
France	10	(10)	10	37	(36.5)	36	120	(113)	107	340	(300)	260	
German F.R.	•	13	•	•	14	•	•	•	•	•	•	•	
Ireland													
Italy	-	-	-	-	-	-	•	•	•	•	•	•	
Luxembourg													
Netherlands	•	0.59	•	•	2.06	•	•	8.65	•	•	•	•	
U.K. (1)	14	(14)	14	27.5	(27.5)	27.5	46	(46)	•	•	•	•	
EEC	?	> 39	?	?	> 85	?	?	> 188	?	?	?	?	
Austria													
Finland	*	*	*	*	*	*	*	*	*	*	*	*	
Greece													
Iceland													
Norway													
Portugal													
Spain	-	-	-	•	•	•	•	•	•	•	•	•	
Sweden	-	-	-	-	-	-	•	•	•	•	•	•	
Switzerland	0.5	0.5	0.5	6.5	2.0	-	16.6	2.0	-	•	•	•	
Turkey													
EUROPE	?	> 40	?	?	> 87	?	?	> 190	?	?	?	?	
Canada	-	-	-	-	-	-	-	-	-	-	-	-	
U.S.A.	-	-	-	-	-	-	•	•	•	•	•	•	
N.AMERICA	-	-	-	-	-	-	•	•	•	•	•	•	
Australia	-	-	-	-	-	-	-	-	-	-	-	-	
Japan (2)	*	14	*	*	34	*	*	~ 200	*	*	*	*	
New Zealand													
PACIFIC AREA	?	14	?	?	34	?	?	~ 200	?	?	?	?	
TOTAL OECD	?	> 54	?	?	> 121	?	?	> 380	?	?	?	?	
India	0.3	(0.3)	0.3	3.0	(3.0)	3.0	30.8	(22.7)	14.6	•	•	•	
Mexico	-	-	-	-	-	-	-	-	-	•	•	•	
Philippines	•	•	•	•	•	•	•	•	•	•	•	•	
S. Africa	-	-	-	1.8	1.8	1.3	11.6	10.6	8.0	•	•	•	
NON OECD	?	> 0.3	?	?	> 4.8	?	?	> 33	?	?	?	?	
TOTAL	?	> 54	?	?	> 126	?	?	> 423	?	?	?	?	

(1) Plutonium stocks arising from Magnox fuel are included.

(2) Includes Pu separated in foreign countries.

**TABLE 3.2B - Stocks of separated fissile Pu held at end of year (te)**

COUNTRY	1985			1990			2000			2025		
	High	Ref	Low	High	Ref	Low	High	Ref	Low	High	Ref	Low
Belgium	*	0.5	*	*	1.0	*	5.0	(7.0)	9.0	11.4	(9.7)	8.0
Denmark	-	-	-	-	-	-	-	-	-	-	-	-
France (1)	*	*	*	*	*	*	*	*	*	*	*	*
German F.R.	-	-	-	-	-	-	*	*	*	*	*	*
Ireland	-	-	-	-	-	-	*	*	*	*	*	*
Italy	-	-	-	-	-	-	*	*	*	*	*	*
Luxembourg	*	0.45	*	*	*	*	*	*	*	*	*	*
Netherlands	21	(21)	21	34.5	(34.5)	*	53(2)	(40)	*	*	*	*
U.K.												
EEC	?	>22	?	?	> 35	?	?	> 47	?	?	?	?
Austria	*	*	*	*	*	*	*	*	*	*	*	*
Finland	-	-	-	-	-	-	*	*	*	*	*	*
Greece	-	-	-	-	-	-	*	*	*	*	*	*
Iceland	-	-	-	-	-	-	*	*	*	*	*	*
Norway	-	-	-	-	-	-	*	*	*	*	*	*
Portugal	-	-	-	-	-	-	*	*	*	*	*	*
Spain	-	-	-	*	*	*	*	*	*	*	*	*
Sweden	-	-	-	-	-	-	*	*	*	*	*	*
Switzerland	*	*	*	*	*	*	*	*	*	*	*	*
Turkey	-	-	-	-	-	-	*	*	*	*	*	*
EUROPE	?	> 22	?	?	> 35	?	?	> 47	?	?	?	?
Canada	-	-	-	-	-	-	-	-	-	-	-	-
U.S.A.	-	-	-	-	-	-	*	*	*	*	*	*
N.AMERICA	-	-	-	-	-	-	*	*	*	*	*	*
Australia	-	-	-	-	-	-	-	-	-	-	-	-
Japan	*	0	*	*	~0	*	*	~0	*	*	*	*
New Zealand	-	-	-	-	-	-	-	-	-	-	-	-
PACIFIC AREA	?	0	?	?	~0	?	?	~0	?	?	?	?
TOTAL OECD	?	> 22	?	?	> 35	?	?	> 47	?	?	?	?
India (1)	-	-	-	-	-	-	-	-	-	*	*	*
Mexico	-	-	-	-	-	-	-	-	-	*	*	*
Philippines	-	-	-	-	-	-	-	-	-	*	*	*
S. Africa	-	-	-	1.2	1.2	1.1	2.4	2.1	1.9	*	*	*
NON OECD	?	-	-	?	>1.2	1.1	?	> 2.1	?	?	?	?
TOTAL	?	> 22	?	?	>35	?	?	>50	?	?	?	?

(1) neglecting working stock at fabrication plants  
(2) two FBRs before 2000 could reduce this by 10-15 te.

TABLE 3.3A - Fissile Pu to be used in research (kg)

COUNTRY	1985			1990			2000			2025		
	High	Ref	Low	High	Ref	Low	High	Ref	Low	High	Ref	Low
Belgium	50	40	30	30	20	10	50	35	20	60	50	40
Denmark	*	*	*	*	*	*	*	*	*	*	*	*
France	*	900	*	*	*	*	*	*	*	*	*	*
German F.R.	*		*	*	*	*	*	*	*	*	*	*
Ireland	*		*	*		*	*	*	*	*	*	*
Italy	*	(500)	*	*	1000	*	*	*	*	*	*	*
Luxembourg	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	*	*	*	*	*	*	*	*	*	*	*	*
U.K.	1500	(1500)	1500	*	*	*	*	*	*	*	*	*
EEC	?	>2900	?	?	>1000	?	?	?	?	?	?	?
Austria	-	-	-	-	-	-	-	-	-	*	*	*
Finland	-	-	-	-	-	-	-	-	-	*	*	*
Greece	-	-	-	-	-	-	-	-	-	*	*	*
Iceland	-	-	-	-	-	-	-	-	-	*	*	*
Norway	-	-	-	-	-	-	-	-	-	*	*	*
Portugal	-	-	-	-	-	-	-	-	-	*	*	*
Spain	-	-	-	*	5.0	*	*	*	*	*	*	*
Sweden	-	-	-	-	-	-	*	*	*	*	*	*
Switzerland	*	30	*	*	30	*	*	30	*	*	*	*
Turkey	-	-	-	-	-	-	-	-	-	*	*	*
EUROPE	?	>2900	?	?	>1000	?	?	?	?	?	?	?
Canada	-	-	-	-	-	-	-	-	-	-	-	-
U.S.A.	7500	(6700)	6000	4000	(3500)	3000	*	*	*	*	*	*
N.AMERICA	7500	(6700)	6000	4000	(3500)	3000	?	?	?	?	?	?
Australia	*	*	*	*	*	*	*	*	*	*	*	*
Japan	*	200	*	*	200	*	*	200	*	*	*	*
New Zealand	*	*	*	*	*	*	*	*	*	*	*	*
PACIFIC AREA	?	200	?	?	200	?	?	200	?	?	?	?
TOTAL OECD	?	> 9800	?	?	> 4700	?	?	?	?	?	?	?
India	300	(300)	300	*	*	*	*	*	*	*	*	*
Mexico	*	*	*	*	*	*	*	*	*	*	*	*
Philippines	*	*	*	*	*	*	*	*	*	*	*	*
S. Africa	-	-	-	-	-	-	-	-	-	*	*	*
NON OECD	?	>300	?	?	?	?	?	?	?	?	?	?
TOTAL	?	>10,000	?	?	> 4700	?	?	?	?	?	?	?



TABLE 3.3B - Fissile Pu to be recycled as fuel in thermal reactors (te)

COUNTRY	1985			1990			2000			2025		
	High	Ref	Low	High	Ref	Low	High	Ref	Low	High	Ref	Low
Belgium	*	0.18	*	*	0.55	*	-	-	-	-	-	-
Denmark	-	-	-	-	-	-	-	-	-	-	-	-
France	*	3.5	*	*	*	*	*	*	*	*	*	*
German F.R.	*		*	*		*	*		*	*		*
Ireland	-	-	-	-	-	-	*	*	*	*	*	*
Italy	-	-	-	-	-	-	*	*	*	*	*	*
Luxembourg	-	-	-	-	-	-	-	-	-	-	-	-
Netherlands	-	-	-	-	-	-	-	-	-	-	-	-
U.K.	-	-	-	-	-	-	-	-	-	-	-	-
EEC	?	>3.7		?	>0.55	?	?	?	?	?	?	?
Austria	-	-	-	*	*	*	*	*	*	*	*	*
Finland	-	-	-	*	*	*	*	*	*	*	*	*
Greece	-	-	-	*	*	*	*	*	*	*	*	*
Iceland	-	-	-	*	*	*	*	*	*	*	*	*
Norway	-	-	-	*	*	*	*	*	*	*	*	*
Portugal	-	-	-	*	*	*	*	*	*	*	*	*
Spain	-	-	-	*	*	*	*	*	*	*	*	*
Sweden	-	-	-	*	*	*	*	*	*	*	*	*
Switzerland	-	-	-	*	0.9	*	*	1.1	*	*	*	*
Turkey	-	-	-	*	*	*	*	*	*	*	*	*
EUROPE	?	>3.7	?	?	>0.9	?	?	>1.1	?	?	?	?
Canada	-	-	-	*	*	*	*	*	*	*	*	*
U.S.A.	*	*	*	*	*	*	*	*	*	*	*	*
N.AMERICA	?	?	?	?	?	?	?	?	?	?	?	?
Australia	-	-	-	*	*	*	*	*	*	*	*	*
Japan	*	1	*	*	~5	*	*	~20	*	*	*	*
New Zealand	-	-	-	*	*	*	*	*	*	*	*	*
PACIFIC AREA	?	1	?	?	~5	?	?	~20	?	?	?	?
TOTAL OECD	?	>4.7	?	?	>6.4	?	?	>21.1	?	?	?	?
India	*	*	*	*	*	*	*	*	*	*	*	*
Mexico	-	-	-	-	-	-	-	-	-	-	-	-
Philippines	*	*	*	*	*	*	*	*	*	*	*	*
S. Africa	-	-	-	0.4	0.4	0.24	1.5	1.2	0.9	*	*	*
NON OECD	?	?	?	?	>0.4	?	?	>1.2	?	?	?	?
TOTAL	?	>4.7	?	?	>6.8	?	?	>22.3	?	?	?	?

TABLE 3.3C - Fissile Pu to be recycled as fuel in fast reactors (te)

COUNTRY	1985			1990			2000			2025		
	High	Ref	Low	High	Ref	Low	High	Ref	Low	High	Ref	Low
Belgium	*	0.14	*	*	0.13	*	2.8	2.8	-	5.6	2.8	-
Denmark												
France	6	(6)	6	14	(13)	12	32	(30)	29	100	(86)	73
German F.R.	*	0.7	*	*								
Ireland												
Italy	*	1	*	*	1	*	*	*	*	*	*	*
Luxembourg	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	*	*	*	*	*	*	*	*	*	*	*	*
U.K.	1.1	(1.1)	1.1	*	*	*	*	*	*	*	*	*
REC	?	> 9	?	?	> 14	?	?	> 32	?	?	?	?
Austria										*	*	*
Finland	-	-	-	-	-	-	-	-	-	*	*	*
Greece										*	*	*
Iceland										*	*	*
Norway										*	*	*
Portugal										*	*	*
Spain	-	-	-	-	-	-	*	*	*	*	*	*
Sweden	-	-	-	-	-	-	*	*	*	*	*	*
Switzerland	-	-	-	-	-	-	-	-	-	*	*	*
Turkey										*	*	*
EUROPE	?	> 9	?	?	> 14	?	?	> 32	?	?	?	?
Canada	-	-	-	-	-	-	-	-	-	-	-	-
U.S.A.	3.0	(2.7)	2.5	3.5	(3.0)	2.5	*	*	*	*	*	*
N.AMERICA	3.0	(2.7)	2.5	3.5	(3)	2.5	?	?	?	?	?	?
Australia	-	-	-	-	-	-	-	-	-	-	-	-
Japan	*	0.8	*	*	~ 1	*	*	~ 8	*	*	*	*
New Zealand										*	*	*
PACIFIC AREA	?	0.8	?	?	~ 1	?	?	~ 8	?	?	?	?
TOTAL OECD	?	> 12	?	?	> 18	?	?	> 40	?	?	?	?
India	-	-	-	-	-	-	5.2	(4.4)	3.6	*	*	*
Mexico	-	-	-	-	-	-	-	-	-	*	*	*
Philippines	-	-	-	-	-	-	-	-	-	*	*	*
S. Africa	-	-	-	-	-	-	-	-	-	*	*	*
NON OECD	-	-	-	-	-	-	?	> 4.4	?	?	?	?
TOTAL	?	> 12	?	?	> 18	?	?	> 44	?	?	?	?

TABLE 3.D - Fissile Pu used for purposes other than in TABLES 3.A,B,C(1e)

COUNTRY	1985			1990			2000			2025		
	High	Ref	Low	High	Ref	Low	High	Ref	Low	High	Ref	Low
Belgium	-	-	-	-	-	-	-	-	-	-	-	-
Denmark	-	-	-	-	-	-	-	-	-	-	-	-
France	-	-	-	-	-	-	-	-	-	-	-	-
German F.R.	-	-	-	-	-	-	-	-	-	-	-	-
Ireland	-	-	-	-	-	-	-	-	-	-	-	-
Italy	-	-	-	-	-	-	-	-	-	-	-	-
Luxembourg	-	-	-	-	-	-	-	-	-	-	-	-
Netherlands	-	-	-	-	-	-	-	-	-	-	-	-
U.K.	-	-	-	-	-	-	*	*	*	*	*	*
EEC	?	?	?	?	?	?	?	?	?	?	?	?
Austria	0.175	-	-	0.175	-	-	0.175	-	-	*	*	*
Finland (1)												
Greece												
Iceland												
Norway												
Portugal												
Spain	-	-	-	-	-	-	*	*	*	*	*	*
Sweden	-	-	-	-	-	-	*	*	*	*	*	*
Switzerland	-	-	-	-	-	-	-	-	-	*	*	*
Turkey												
EUROPE	0.175	?	?	0.175	?	?	0.175	?	?	?	?	?
Canada	-	-	-	-	-	-	-	-	-	-	-	-
U.S.A.	-	-	-	-	-	-	*	*	*	*	*	*
N.AMERICA	-	-	-	-	-	-	?	?	?	?	?	?
Australia	-	-	-	-	-	-	-	-	-	-	-	-
Japan												
New Zealand												
PACIFIC AREA	?	?	?	?	?	?	?	?	?	?	?	?
TOTAL OECD	0.175	?	?	0.175	?	?	?	?	?	?	?	?
India	-	-	-	-	-	-	-	-	-	*	*	*
Mexico	-	-	-	-	-	-	-	-	-	-	-	-
Philippines												
S. Africa	-	-	-	-	-	-	-	-	-	*	*	*
NON OECD	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	0.175	?	?	0.175	?	?	0.175	?	?	?	?	?

(1) expected to be retained by the reprocessor.

TABLE 4.1 - Pu Stores in Operation and Planned

COUNTRY	Status /Date	Pu Form	Capacity	Stock	Costs in US \$ (end 1977)	
			(te heavy metal all isotopes)		Capital	Operation/kg.y
Belgium	Operating end 1978 1982	oxide	1.1	0.7	7-10 x 10 <sup>5</sup>	275-350
		oxide	1.2	-	7-10 x 10 <sup>5</sup>	275-350
		{ nitrate	0.1	-	*	*
		oxide	0.1	-		
France (1)	Operating	oxide	*	*	*	*
German F.R.	1978	{ oxide nitrate/fuel residues }	0.45	0.4	*	*
	1979		5	-	*	*
	1990		10	-	*	*
Italy	1969	various	(kgs)	(kgs)	*	*
Netherlands	-	-	-	-	-	-
U.K. (1)	Operating	oxide	*	9	*	*
Finland	-	-	-	-	-	-
Spain	1990	oxide	*	*	*	*
Sweden	-	-	-	-	-	-
Switzerland	-	-	-	-	-	-
Canada	-	-	-	-	-	-
U.S.A.	Operation deferred	nitrate solution nitrate nitrate oxide nitrate/oxide nitrate oxide oxide oxide	8	-	10.2 x 10 <sup>6</sup>	*
	license terminated		2	-	*	*
	design only		0.65	-	*	*
	1978		6	0.14	*	200
	operating		2	0.5	*	*
	operating		1	0.43	0.3(x 10 <sup>6</sup> )	200
	operating		0.8	0.21	*	400
	*		0.35	*	*	160
operating	0.50	*	*	*		
Australia	-	-	-	-	-	-
Japan	Operating	nitrate	1	*	*	*
India	*	*	*	*	*	*
Mexico	-	-	-	-	-	-
S. Africa	-	-	-	-	-	-

(1) Later stores will be provided as required.

TABLE 5.1A - Pu Recycle in Thermal Reactors (Plans and Situation at End of 1977)

Country	Current Plans? (Answers to Q.1, 2 & 3)	Fissile Pu In Use (te)	Savings In Natural U (te)	Savings In Separative Work (10 <sup>3</sup> SWU)
Belgium (1)	For Pu in excess of FR requirements (LWR in 1973)	0.06	10	10
Denmark				
France	No	-	-	-
German F.R.	Yes (PWR since 1972 BWR since 1974)	0.5	*	*
Ireland				
Italy	Not for the immediate future	-	-	-
Luxembourg				
Netherlands	No	-	-	-
U.K.	No	-	-	-
EEC	(Definite plans in 2 countries)	0.56	10	10
Austria				
Finland				
Greece				
Iceland				
Norway				
Portugal				
Spain	Not for the immediate future.	-	-	-
Sweden	No definite plans.	-	-	-
Switzerland	Yes (PWR in 1978, LWRs later)	-	-	-
Turkey				
EUROPE	(Definite plans in 3 countries)	0.56	10	10
Canada	No definite plans	-	-	-
USA	Indefinitely deferred.	*	*	*
N. AMERICA		*	*	*
Australia	No	-	-	-
Japan	Yes (Pu recycle in FUGEN (1978) and commercially in LWR and HWR by end of 1980's).	0.1	14	14
New Zealand				
PACIFIC AREA	(Definite plans in 1 country)	0.1	14	14
TOTAL OECD	(Definite plans in 4 countries)	0.66	24	24
India	Being planned.	-	-	-
Mexico	No plans yet	-	-	-
Philippines				
S. Africa	Planned but not definite	-	-	-
NON OECD	(Definite plans in 1 country)	-	-	-
TOTAL	(Definite plans in 5 countries)	0.66	24	24

(1) does not include 0.3 te fissile Pu in fuel produced for thermal recycle in other countries.

**TABLE 5.1B - Cumulative Fissile Pu used in Thermal Recycle (te)**

COUNTRY	1985			1990			2000			2025		
	High	Ref	Low	High	Ref	Low	High	Ref	Low	High	Ref	Low
Belgium	0.25			1.9			2.5			2.5		
Denmark												
France	-	-	-	-	-	-	-	-	-	-	-	-
German F.R.	4											
Ireland												
Italy	-	-	-	-	-	-						
Luxembourg												
Netherlands	-	-	-	-	-	-	-	-	-	-	-	-
U.K.	-	-	-	-	-	-	-	-	-	-	-	-
REC	? >4.0		?	? >1.9		?	? >2.5		?	? >2.5		?
Austria												
Finland	-	-	-	*	*	*	*	*	*	*	*	*
Greece												
Iceland												
Norway												
Portugal												
Spain	-	-	-	-	-	-	-	-	-	-	-	-
Sweden	-	-	-	-	-	-	*	*	*	*	*	*
Switzerland	-	-	-	6.5	2	-	16.6	2	-	*	*	*
Turkey												
EUROPE	? >4.0		?	? >4		?	? >4.5		?	? ?		?
Canada	-	-	-	-	-	-	-	-	-	-	-	-
U.S.A.	*	*	*	*	*	*	*	*	*	*	*	*
N.AMERICA	? ?		?	? ?		?	? ?		?	? ?		?
Australia	-	-	-	-	-	-	-	-	-	-	-	-
Japan	*	3.5	*	*	~ 15	*	*	~ 150	*	*	*	*
New Zealand												
PACIFIC AREA	? 3.5		?	? ~ 15		?	? ~ 150		?	? ?		?
TOTAL OECD	? >7		?	? >19		?	? >155		?	? ?		?
India	*	*	*	*	*	*	*	*	*	*	*	*
Mexico	-	-	-	-	-	-	-	-	-	-	-	-
Philippines												
S. Africa	-	-	-	0.6	0.6	0.2	9.2	8.5	6.1	*	*	*
NON OECD	? ?		?	>0.6 >0.6 >0.2			>9.2 >8.5 >6.1			? ?		?
TOTAL	? >7		?	? >20		?	? >163		?	? ?		?

**TABLE 5.1C - Cumulative Natural Uranium Savings by Thermal Pu Recycle (te)**

COUNTRY	1985			1990			2000			2025		
	High	Ref	Low	High	Ref	Low	High	Ref	Low	High	Ref	Low
Belgium	*	40	*	*	304	*	*	406	*	*	406	*
Denmark	-	-	-	-	-	-	-	-	-	-	-	-
France	*	*	*	*	*	*	*	*	*	*	*	*
German F.R.	*	*	*	*	*	*	*	*	*	*	*	*
Ireland	-	-	-	-	-	-	*	*	*	*	*	*
Italy	-	-	-	-	-	-	*	*	*	*	*	*
Luxembourg	-	-	-	-	-	-	-	-	-	-	-	-
Netherlands	-	-	-	-	-	-	-	-	-	-	-	-
U.K.	-	-	-	-	-	-	-	-	-	-	-	-
EEC	?	>40	?	?	>300	?	?	>400	-	?	>400	?
Austria	-	-	-	*	*	*	*	*	*	*	*	*
Finland	-	-	-	*	*	*	*	*	*	*	*	*
Greece	-	-	-	-	-	-	-	-	-	-	-	-
Iceland	-	-	-	-	-	-	-	-	-	-	-	-
Norway	-	-	-	-	-	-	-	-	-	-	-	-
Portugal	-	-	-	-	-	-	*	*	*	*	*	*
Spain	-	-	-	-	-	-	*	*	*	*	*	*
Sweden	-	-	-	-	-	-	*	*	*	*	*	*
Switzerland	-	-	-	1300	400	-	3300	400	-	*	*	*
Turkey	-	-	-	-	-	-	-	-	-	-	-	-
EUROPE	?	>40	?	?	>700	?	?	>800	?	?	?	?
Canada	-	-	-	-	-	-	-	-	-	-	-	-
U.S.A.	*	*	*	*	*	*	*	*	*	*	*	*
N.AMERICA	?	?	?	?	?	?	?	?	?	?	?	?
Australia	-	-	-	-	-	-	-	-	-	-	-	-
Japan	*	490	*	*	~2100	*	*	~21000	*	*	*	*
New Zealand	-	-	-	-	-	-	-	-	-	-	-	-
PACIFIC AREA	?	490	?	?	~2100	?	?	~21000	?	?	?	?
TOTAL OECD	?	>530	?	?	>2800	?	?	>21800	?	?	?	?
India	*	*	*	*	*	*	*	*	*	*	*	*
Mexico	-	-	-	-	-	-	-	-	-	-	-	-
Philippines	-	-	-	-	-	-	-	-	-	-	-	-
S. Africa	-	-	-	120	120	50	1630	1490	1090	*	*	*
NON OECD	?	?	?	>120	>120	>50	>1630	>1490	>1090	?	?	?
TOTAL	?	>530	?	?	>2900	?	?	>23300	?	?	?	?

**TABLE 5.1D - Cumulative Separative Work Savings by Thermal Pu Recycle (10 SWU)**

COUNTRY	1985			1990			2000			2025		
	High	Ref	Low	High	Ref	Low	High	Ref	Low	High	Ref	Low
Belgium	*	40	*	*	304	*	*	406	*	*	406	*
Denmark	-	-	-	-	-	-	-	-	-	-	-	-
France	*	*	*	*	*	*	*	*	*	*	*	*
German F.R.	-	-	-	-	-	-	*	*	*	*	*	*
Ireland	-	-	-	-	-	-	-	-	-	-	-	-
Italy	-	-	-	-	-	-	-	-	-	-	-	-
Luxembourg	-	-	-	-	-	-	-	-	-	-	-	-
Netherlands	-	-	-	-	-	-	-	-	-	-	-	-
U.K.	-	-	-	-	-	-	-	-	-	-	-	-
REC	?	>40	?	?	>300	?	?	>400	?	?	>400	?
Austria	-	-	-	*	*	*	*	*	*	*	*	*
Finland	-	-	-	-	-	-	-	-	-	-	-	-
Greece	-	-	-	-	-	-	-	-	-	-	-	-
Iceland	-	-	-	-	-	-	-	-	-	-	-	-
Norway	-	-	-	-	-	-	-	-	-	-	-	-
Portugal	-	-	-	-	-	-	-	-	-	-	-	-
Spain	-	-	-	-	-	-	*	*	*	*	*	*
Sweden	-	-	-	-	-	-	-	-	-	-	-	-
Switzerland	-	-	-	830	250	-	2100	250	-	*	*	*
Turkey	-	-	-	-	-	-	-	-	-	-	-	-
EUROPE	?	>40	?	?	>550	?	?	>650	?	?	?	?
Canada	-	-	-	-	-	-	-	-	-	-	-	-
U.S.A.	*	*	*	*	*	*	*	*	*	*	*	*
N.AMERICA	?	?	?	?	?	?	?	?	?	?	?	?
Australia	-	-	-	-	-	-	-	-	-	-	-	-
Japan	*	490	*	*	~2100	*	*	~21000	*	*	*	*
New Zealand	-	-	-	-	-	-	-	-	-	-	-	-
PACIFIC AREA	?	490	?	?	~2100	?	?	~21000	?	?	?	?
TOTAL OECD	?	>530	?	?	>2650	?	?	>21650	?	?	?	?
India	*	*	*	*	*	*	*	*	*	*	*	*
Mexico	-	-	-	-	-	-	-	-	-	-	-	-
Philippines	-	-	-	-	-	-	-	-	-	-	-	-
S. Africa	-	-	-	100	100	40	1340	1230	900	*	*	*
NON OECD	?	?	?	>100	>100	>40	>1300	>1200	>900	?	?	?
TOTAL	?	>530	?	?	>2750	?	?	>22850	?	?	?	?