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Introduction

The 1999 issue of *Worldwide U₃O₈ Producer Profiles* is the 20th in the series. The first 19 reports were published as follows:

September 1977	October 1986	August 1994
January 1979	June 1987	September 1995
May 1980	June 1988	October 1996
September 1981	October 1989	October 1997
December 1982	June 1990	September 1998
June 1984	July 1992	
September 1985	October 1993	

The *Profiles* provide a brief review of each major uranium producer in the world that has production facilities that are active, under construction or firmly planned. Information contained herein was obtained from personal contact with the producers, publicly available sources and estimates using NAC's Fuel-Trac[®] and Uranium Supply Analysis (USA) System data bases.

Producers are defined as the companies directly involved in the production of U₃O₈ through ownership or operation of the facilities. Companies that meet delivery commitments exclusively through purchasing or borrowing uranium are classified as agents or brokers and are not included in this report.

This report is broken down into several sections for easier use. The changes in mill and mine status and reserve estimates since publication of the September 1998 issue are contained in section 2. Section 3 lists the announced changes in plans for operations of worldwide production centers. The current marketing status of producers and summaries of production, reserves and commitments are provided in section 4. Section 5 gives the format of data presentation for section 6, along with abbreviations and a set of company and property cross-reference tables. The individual profiles presented in section 6 give a concise overview of each producer. Maps of major worldwide production centers are presented in section 7.

The following figures summarize some of the information contained in this report. Figure 1.1 shows the share of 1998 worldwide uranium production by country and figure 1.2 shows the share of 1998 production by region.

FIGURE 1.1 Share of 1998 Worldwide U₃O₈ Production

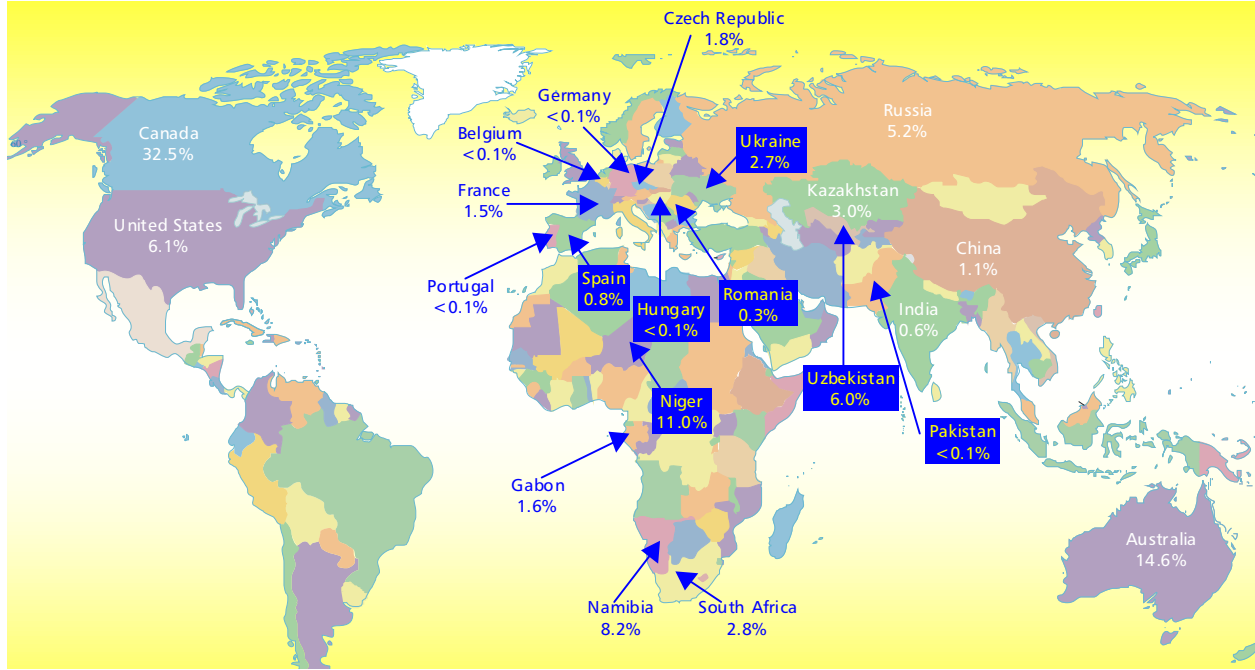
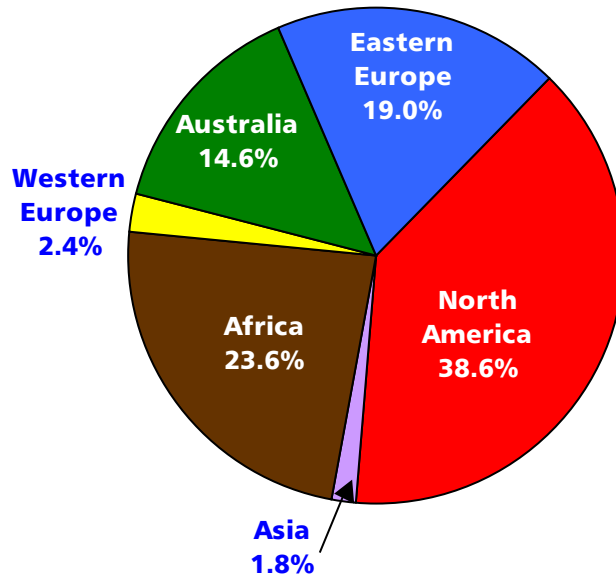


FIGURE 1.2 1998 Worldwide U₃O₈ Production by Region



Comisión Nacional de Energía Atómica (CNEA)

Avenida del Libertador 8250

Buenos Aires, 1429

Argentina

[54] (1) 704-1217 FAX: [54] (1) 704-1165

Mills	Status	Location	Ownership Percent /Company		Nominal Capacity Lbs U₃O₈/Year	Process
Malargue	D	Mendoza Province, Argentina	70.0	CNEA	–	Acid leach, solvent extraction
			30.0	Private Industry		
Don Otto	SD	Salta Province, Argentina	70.0	CNEA	–	Heap leaching
			30.0	Private Industry		
Los Adobes	SD	Chubut Province, Argentina	70.0	CNEA	–	Acid leach, solvent extraction
			30.0	Private Industry		
San Rafael	S	San Rafael, Mendoza Province, Argentina	70.0	CNEA	150,000	Heap leaching
			30.0	Private Industry		
La Estela	SD	San Luis Province, Argentina	70.0	URANCO S.A.	–	Heap leaching
			30.0	Private Industry		
Los Gigantes	SD	Córdoba Province, Argentina	70.0	Sanchez Granel	–	Heap leaching
			30.0	Private Industry		
Los Colorados	SD	La Rioja Province, Argentina	100.0	URANCO S.A.	78,000	Heap leaching

Mines	Status	Location	Ownership Percent /Company		Percent Average Grade	Estimated Reserves Millions of Lbs U₃O₈	Type
Agua Botada & Huemul	MO	Mendoza Province, Argentina	70.0	CNEA	0.17	None	Underground
			30.0	Private Industry			
Don Otto & Los Berthos	MO	Salta Province, Argentina	70.0	CNEA	0.09	None	Underground
			30.0	Private Industry			
Los Adobes & Cerro Condor	MO	Chubut Province, Argentina	70.0	CNEA	0.12	None	Open pit
			30.0	Private Industry			
Los Colorados	SD	La Rioja Province, Argentina	100.0	URANCO S.A.	NA	NA	Open pit
La Estela	MO	San Luis Province, Argentina	70.0	CNEA	0.08	None	Open pit
			30.0	Private Industry			
Los Gigantes	MO	Córdoba Province, Argentina	70.0	CNEA	0.04	None	Open pit
			30.0	Private Industry			
Sierra Pintada District: Tigre I II III Guacho I II III Media Luna I II III IV	S	San Rafael, Mendoza Province, Argentina	70.0	CNEA	0.12	24.1	Open pit
			30.0	Private Industry			
Cerro Solo	E	Chubut Province, Argentina	70.0	CNEA	0.35	9.1	NA
			30.0	Private Industry			
						<i>Total Reserves</i>	33.2

ARGENTINA

		<u>1999–2003</u>	<u>2004–2008</u>	<u>2009–2013</u>
Forward Sales Commitments (Lbs U₃O₈):		0	0	0
Capacity Utilization (percentage):		0	0	0
Historical Production (Lbs U₃O₈):				
Pre–1988	–	4,874,100		
1988	–	369,200		
1989	–	134,100		
1990	–	226,000		
1991	–	None		
1992	–	286,000		
1993	–	326,000		
		13,000	(Los Colorados)	
		<u>339,000</u>	(Total)	
1994	–	143,000	(San Rafael)	
		62,400	(Los Colorados)	
		<u>205,400</u>	(Total)	
1995	–	169,000	(San Rafael)	
		NA	(Los Colorados)	
		<u>169,000</u>	(Total)	
1996	-	72,800	(San Rafael)	
		NA	(Los Colorados)	
		<u>72,800</u>	(Total)	
1997	–	91,000	(San Rafael)	
1998	–	0		

Additional Information:

- The Argentine uranium industry, previously wholly-owned by the Government Agency, CNEA, is now owned about 70 percent by CNEA and 30 percent by domestic private industry.
- The Los Colorados facility located in La Rioja province is owned and operated by URANCO, S.A., a private company. Production began at Los Colorados in 1993 and was suspended in 1996.
- In April 1981, CNEA rescinded its contract with a French-Argentine consortium to build the Sierra Pintada mill. The mill is now deferred indefinitely. Ore from the Sierra Pintada District mines has been milled at Malargue and San Rafael. Ore from Sierra Pintada was milled at San Rafael through 1997.
- Between 1964 and 1975, ore from the Agua Botada and Huemul mines was processed at the 100-TPD Malargue mill. From 1975 to 1986, the Malargue mill processed ore from the Tigre III and Tigre I mines in the Sierra Pintada District. Malargue mill capacity was expanded in 1978 and started operation at 250 TPD (180,000 to 200,000 lbs U₃O₈ per year) in 1979. The Malargue mill was shut down in 1986.
- Ore from Don Otto and Los Berthos mines was processed at the Don Otto mill. The Don Otto mill was shut down in 1981.
- Ore from Los Adobes and Cerro Condor mines was processed at the Los Adobes heap leach plant. The Los Adobes operation was shut down in 1981.
- Original capacity of the San Rafael mill was 156,000 lbs of U₃O₈ per year, later expanded to 312,000 lbs of U₃O₈ per year in 1986 as the Malargue mill was shut down. Ore from mines in the Sierra Pintada District was processed at the San Rafael mill.
- In 1990, CNEA began assessing the Cerro Solo uranium deposit in the Chubut Province. Average grade is 0.35 percent U₃O₈ and estimated reserves are 9.1 million lbs U₃O₈. The project will be developed in line with uranium requirements for the Argentine nuclear reactor program and projections regarding the worldwide uranium market.
- CNEA has revised its policy of self reliance with regards to uranium supply, and has begun purchasing uranium on the open market.