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91	US Ene	rgy Information Administ	•	onal Energy Statisti eu/international/energy		Vente <mark>d &amp; Fla</mark> red of						
93 94 95 96 97		Libya Crude oil, condensate, &	Libya		Gross Na	atGas Prod	Prod Market Gas	<b>Libya</b> Reinjected NatGas	gross	Libya Vented & Flared	Libya Dry NatGas Prod	
96 97	1980 1981	1,827 1,175	667 429		NA NA	er year	Bcf per year NA NA	Bcf per year -	70	Bcf per year 161 82	Bcf per year 180 110	
98 99 100	1982 1983 1984	1,190 1,135 1,124	434 414 410		NA NA NA		NA NA NA	-		102 68 44	120 140 162	
101	1985 1986	1,085 1,064	396 388		NA NA		NA NA	-		28 25	180 198	
103 104 105	1987 1988 1989	1,002 1,205 1,185	366 440 433		NA NA NA		NA NA NA	-		28 91 118	189 194 212	
106 107	1990 1991	1,410 1,523	515 556			572 550	239 252	155 168	24%	177 130	219 231	
108 109 110	1992 1993 1994	1,473 1,402 1,419	538 512 518			503 438 442	260 246 247	166 131 132	14%	76 61 63	239 225 226	
111 112	1995 1996	1,430 1,450	522 529			440 446	245 248	132 135	14% 14%	63 64	224 227	
113 114 115	1997 1998 1999	1,506 1,450 1,379	550 529 503			456 445 325	253 246 205	137 135 74	15%	65 65 46	232 225 184	
116 117 118	2000 2001 2002	1,470 1,429	537 521 505			358 365	233 230	88 87	10% 13%	37 48	212 218	
119 120	2002 2003 2004	1,384 1,486 1,583	542 578			366 451 585	232 207 316	87 218 237	6%	48 26 32	219 194 285	
121 122 123	2005 2006 2007	1,740 1,865 1,931	635 681 705			771 956 1,032	434 722 810	125 128 119	11%	91 105 103	399 466 540	
124	2008 2009	1,943 1,836	709 670			1,070 1,034	807 793	125 126	13% 11%	139 115	562 562	
125 126 127 128	2010 2011 2012	1,850 522 1,549	675 191 565			1,069 348 619	825 277 430	120 25 49	13%	123 46 139	594 277 431	
129 130	2013 2014	1,045 577	381 211			608 623	430	41 25	19% 25%	115 158	452 440	
131 132 133	2015 2016 2017	514 501 932	188 183 340		NA NA	592			27%	157 - -	410 350 321	
134 135 136	2018	1,075 Updated June 2019	392		Undated	June 2019		Undeted line 201	n		328 asssumed equal to 2 Updated June 2019	revise with updated EIA data 2017 * (BP 2018/2017)
137		Crude oil, condensate, & NG	PL					Updated June 201		(dr	y gas, EIA stat to 20	17)
138 139 140 141 142 143 144 145				1990-2011 totals	s	13,022	8,329	2,849	13%	1,723	6,757	
142 143												
145 146 147		4	Aprija Salam Zanta Balturry			1		-	_	L.	M. the	47/1/20
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#### Cell: 19

#### Comment: Rick Heede:

"The National Oil Corporation (NOC) was established on 12 November 1970, under Law No: 24/1970, replacing the general Libyan Petroleum Corporation which established under Law No. 13 of 1968 to assume the responsibility of the oil sector operations.'

NOC is carrying out exploration and production operation through its own affiliated companies, or in participation with other companies under service contracts or any other kind of petroleum investment agreements. This is in addition to marketing operations of oil and gas, locally and abroad . For this purpose, NOC has its own fully owned companies which carry out exploration, development and production operations, in addition to local and international marketing companies. NOC also has participation agreements with specialized international companies. Such agreements have developed into exploration and production sharing agreements, in accordance with the development of the international oil and gas industry, and international petroleum marketing .

NOC owns refining, and oil and gas processing companies, operating refineriessuch as Zawia and Ras Lanuf refineries, ammonia, urea and methanol plants, the Ras Lanuf petrochemical complex and the gas processing plan. To establish petrochemical industries, anther stage of development of the ethylene plant has been completed, as well as the low and high density linear polyethylene plants.

"NOC in Brief", at www.noclibya.com.ly (12Dec11).

#### Cell: M9

## Comment: Rick Heede:

100 percent government owned. World Bank (2008b) A Citizen's Guide to National Oil Companies, Part B: Data Directory, World Bank, Washington, & Center for Energy Economics, Bureau of Economic Geology Jackson School of Geosciences University of Texas, Austin, 764 pp.

#### Cell: F26

## Comment: Rick Heede:

We have no information on Libya NOC's equity production or details of production sharing agreements with international operators (such as Turkish Petroleum, BP, Eni, and others). Until detailed information is available, we use a ownership stake of 51 percent starting when international oil company assets were nationalized in 1973 and rising to a 70 percent stake in 1977 through 2010. This factor may significantly under-estimate Libya's stake in the country's oil production and will be revised if more detailed information on working interest production becomes available.

The Oil & Gas Journal estimates for 1987-2010 appear to reflect total Libyan production, not Libya NOC's, and we do not use the O&GJ data (reproduced in column L).

#### Cell: E28

## Comment: Rick Heede:

Libya oil production 1961-1969 from US Bureau of Mines (1971), International Petroleum Encyclopedia, p. 37. CAI uses BoM data for 1961 to 1964.

Nigerian oil production for 1965 through 1979 from BP Statistical review of World Energy 2019, with revised data 1965-2018.

# Cell: J34

# Comment: Rick Heede:

We assume that Libya's equity production (through production sharing agreements, concessions, and royalties) was 51 percent upon Libya's nationalization of international production assets in 1973, and rising to 70 percent percent 1977-2010.

The Oil & Gas Journal estimates for 1987-2010 appear to reflect total Libyan production, not Libya NOC's, and we do not use the O&GJ natural gas data (reproduced in column M).

#### Cell: 034

## Comment: Rick Heede:

According to the UN, "As of 2002, the NOC had an overall share of more than 70% in the oil industry." Nations' Encyclopedia; see cell note in column M. CMS applies this percentage to all of Libya's crude oil production from the year of industry nationalization in 1970 to 1986; thereafter CMS uses Oil & Gas Journal OGJ200 production estimates for Libya NOC for 1987 - 2008.

#### Cell: H35

## Comment: Rick Heede:

U.S. Bureau of Mines, Minerals Yearbook 1970, page 764, gross and marketed production 1968-1970. Note: "no marketed production reported."

#### Cell: B37

#### Comment: Rick Heede:

BP operations in Libya were nationalized in 1970, and other producers that did not agree to a government production share of 51 percent were also nationalized.

# Cell: H37

Comment: Rick Heede

Total net worldwide crude oil plus natural gas liquids produced by each company or state-owned enterprise. Where data is available, we list gross production (before royalty production is netted out). More often, however, oil companies report production net of royalty production.

Crude production includes natural gas liquids (NGL) unless noted.

## Cell: H39

# Comment: Rick Heede:

U.S. Bureau of Mines Minerals Yearbook 1974, page 887, reports both gross and marketed production for 1972-1973.

# Cell: B40

## Comment: Rick Heede:

The government of Libya negotiated an immediate 51 percent equity share in 1973. Stevens, 2012, page 181.

## Cell: G40

# Comment: Rick Heede:

The government of Libya negotiated an immediate 51 percent equity share in 1973. Stevens, 2012, page 181.

See Stevens, Paul (2012) "Saudi Aramco: the jewel in the crown," in Victor et al, eds, Oil and Governance, pp. 173-233, Cambridge Univ. Press, 1034 pp.

## Cell: H41 Comment: Rick Heede:

U.S. Bureau of Mines Minerals Yearbook 1976, page 887, reports both gross and marketed production for 1974-1976. Note: "Includes gas reinjected to reservoirs, if any,"

# Cell: L54

# Comment: Rick Heede:

Oil & Gas Journal data for 1987-2004, Libya National Oil Corporation.

#### Cell: L76 Comment: Rick Heede:

OGJ100 6Sep2010 pg 69; OGJ 3 Oct 2011 pg 49

# Cell: M76

# Comment: Rick Heede:

OGJ100 6Sep2010 pg 69; OGJ 3 Oct 2011 pg 49

# Cell: M134

## Comment: Rick Heede:

EIA gas production data for Libya not available

Cell: 0187

# Comment: Rick Heede:

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