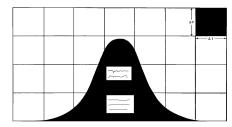
HUBBERT CENTER NEWSLETTER #2001/4



M. KING HUBBERT CENTER FOR PETROLEUM SUPPLY STUDIES

M. KING HUBBERT CENTER Petroleum Engineering Department COLORADO SCHOOL OF MINES GOLDEN CO 80401-1887

PETROLEUM POSITIONS OF CHINA, INDIA, INDONESIA, MALAYSIA, AUSTRALIA **FAR EAST & OCEANIA REGION**

L. F. Ivanhoe

FAR EAST AND OCEANIA

Total population of this huge region is 3.323 billion, with an increase of 427 million during the last decade. Most nations are less-developed-countries (LDCs). The region has only 4.2% of the world's claimed oil reserves, with more than 50% of the world's population. Total oil production in 2000 was 10.6% of global total. China's oil consumption is now #3 in the world after the U.S. and Japan. Australia has only 19 million people and small oil consumption. Asia will soon be one of the world's foremost oil importers.

Table 1: World Petroleum Supply and Disposition

This table is from the U.S. Department of Energy report: International Energy Annual - DOE/EIA-0219(98), Jan. 2000. This compilation combines data from several sources to present the oil Production/Consumption/Imports/Exports of each nation. The t able is always a couple of years late due to the complexity of assembling the various data into one table. It allows direct comparison between the several factors for each of the nations of the table or other HC newsletters. The countries covered in this study are underlined.

Table 1 World Petroleum Supply and Disposition, 1998

The underlined/graphed nations are the most important oil producers in the region.

(Thousand Barrels per Day)				See Table #1 for other nations' recent oil production/consumption.						
		Primary Supply			Disposition	Bunkers				
Region/Country	Oil Production ¹	Crude Oil Imports	Total Imports of Refined Petroleum Products	Crude Oil Exports	Total Exports of Refined Petroleum Products	Apparent Consumption (Including Bunkers) ²	Residual Fuel Oil	Distillate Fuel Oil and Other Products		
Far East & Oceania										
Australia	627	412	96	231	152	831	12	2		
Bangladesh	2	22	36	0	0	58	1	0		
Brunei	179	0	1	166	(s)	14	0	0		
Burma	11	14	7	(s)	1	30	0	(s)		
China	3,198	579	596	313	135	4,106	3	4		
Guam	0	0	20	0	0	20		1		
Hong Kong	0	0	350	0	166	184	30	74		
India	755	774	438	47	30	1,844	7	11		
Indonesia	1,602	181	148	738	228	954	6	16		
Japan	80	4,293	1,190	0	132	5,512		4		
Korea, North	0	38	28	0	(s)	70		0		
Korea, South	70	2,244	482	0	803	1,973	91	36		
Malaysia.	811	41	191	404	169	449		1		
Mongolia	0	0	8	0	0	8	0	0		
New Zealand	56	91	26	34	5	133	5	2		
Pakistan	59	81	213	5	2	347	(s)	3		
Papua New Guinea	79	0	15	79	(s)	15	0	1		
Philippines	2	321	72	0	19	376		13		
Singapore	4	1,038	554	(s)	980	599	256	87		
Sri Lanka	0	43	19	0	3	61	4	3		
Taiwan	3	709	167	0	35	806		5		
Thailand	136	680	43	21	100	706		2		
Vietnam	246	0	137	241	0	135	0	0		
Other	0	0	81	0	3	78		14		
Total	7,922	11,562	4,917	2,278	2,962	19,312	589	278		
World Total	75,124	37,761	15,599	38,831	15,966	73,642	2,278	1,381		

Energy Information Administration/International Energy Annual 1999: DOE/EIA-0219(99), Feb. 2001

Note: This is one of a series of 7 CSM/HC concise "petroleum position" summaries of the most significant oil producing countries in each of the U.S. DOE/EIA-0219 "regions". Please save for future reference/comparisons of graphs.

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Oil production includes crude oil, natural gas plant Iquids, other liquids, and refinery processing gains.

Apparent consumption includes internal consumption, refinery fuel and loss, and bunkering. Also included, where available, are liquefied petroleum gases sold directly from natural gas processing plants for fuel or chemical uses.

(s)-Value less than 500 barrels per day.

Note: Sum of components may not equal total due to independent rounding.

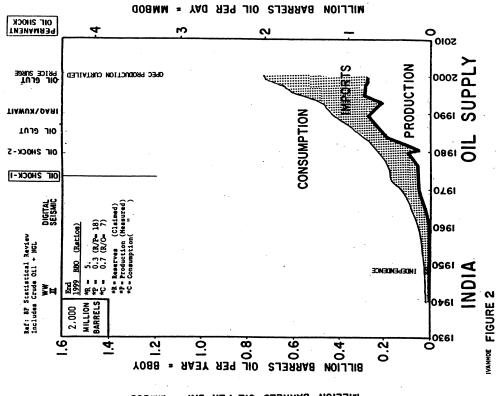
Country Oil Summary

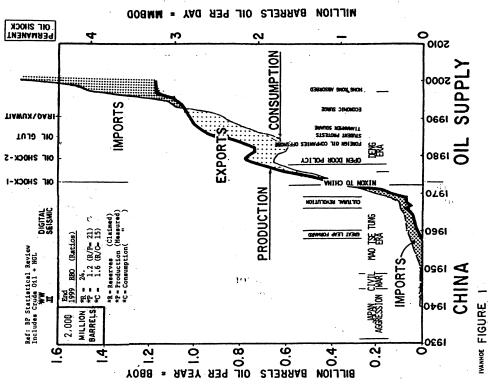
GEOGRAPHY. HISTORY. POLITICS

<u>OLOOKAFI</u>	11, 11151OK	1, FULTICS						
Country:	CHINA		Region:	Far East	Fi	gure No. <u>1</u> (s	scale=2K)	
Population: (1,255 millions			Mandarin Chinese			_
	e: (1911)fro				atus: Communist I			_
Major Social	l Turmoil: (1	949) <u>Civil W</u>	ar-Communi	sts defeat non-c	ommunists to Taiwan	l		
population with invas Western c by the mod during the Mongols b "silk route Manchu/Q held until (Chiang K	n. China is on ions from the hariots and S re numerous (Chin Dynast prought the but).". The Mong Dynasty end of World	ne of the world's e west (Caspian S W Asian plants Chinese. Norther, In 1297 the Mubonic plague (Egols were expell, which was displayed to the state of the state	s oldest civili Sea region), b (wheat, etc.). ern and South Mongols gain Black Death) ed by the Min laced by a Re A bitter civil	zations – since by the first "Shar Common invariern China were ed control of Chiback from Burming Dynasty (136 epublic in 1912. war followed (an the US/48 + Alask before 2000 BC. Wring Dynasty". The Sh ders from the NW we first united in 221 BC ina (Yuan Dynasty va – the plague was so 8-1644 AD), which value in 1931 Japanese se 1945-1949) between no indigenous oil pro-	tten history begins ang brought with the cre always gradually C behind the Great isited by Marco Potoon spread to Europwas followed by the ized Manchuria, when Communists and	1766 BC hem y absorbed Wall lo). pe via the e last hich they ad KMT	
<u>PETROLEU</u>	<u>M</u> :	CHINA		is	derately "oily":	(with <u>2.3</u>	% of world'	's COR.)
		Onshore (211BC			ore: (1970)			
	company for		Name:	CNOG	EDE	Oil Nat	tionalized ()
Joined OPEC	, ,	OAPEC: () MDD	Oil Consument	iom.(2000)	4.940		MDD
Exports:(on: (2000)_	3,243	MBD	Oil Consumpt MBD	Imports:(2000)	4,840 1,595		_MBD MBD
COReserves	(2000)	24	BBO; CG		Tcf. Oil:R/P=_		_yrs;R/C=	
	duction peak:			n effort peak: (EUR:		BO
	tional oil pro				'Other" oil prod. ()MI		
consumpti Daqing oil outlined b tiffs. No c consumpti since then offshore so	on were negled complex in a y Soviet tech other "Giant" on) in 1972 (Chinese conseas and in the	ligible for globa NE China's (Ma nicians before the oil fields have be when President sumption has ex	I consideration conchuria) Sun ney were called the found. On the found with the found the found of the found the found the found for the found	ns. China's firs gliao basin in 19 ed back to the U China became se I China). The nation's production Farim basin. Ch	in 1997. Before 1966 t significant modern of 257. This field was of SSR during one of the lf-sufficient in oil (duation exported some on. Oil discoveries had a is now looking for the sufficient in oil of the learn	oil discovery was the drilled by China on the USSR/China commune to the nation's louil from 1973 to 19 ave been minor in the drilled was the second to the s	ne "Giant" a prospect nmunist ow 92, but he Chinese	
HCN#	98/3, July 1	998, Petroleum Po	ositions of Ex-	USSR & China	ual); (3) CSM Hubber British Petroleum; O&C		Rev:	7/7/01
					&GJ OPEC = Organiza			
Exporting	Countries; O.	APEC = O-Arab-l	PEC. $BBO = I$	Billion Barrels Oil	; Tcf = Trillion cubic for	eet gas;	-	
COR = Cl	aimed Oil Res	erves; CGR = Cla	imed Gas Rese	rves; EUR = Esti	nated Ultimate Recover	ry-BBO. e = estimate	:d.	

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R/P = COR/Production; R/C=COR/Consumption





HC#2001/4-1-3

Country Oil Summary

GEOGRAPHY, HISTO	RY, POLITICS						
Country: INDIA Population: (1998) Independence: (1947)f Major Social Turmoil: (971 millions M rom Britain	Iain Language/R Current p	olitical status <u>:</u>	lindi & English		(scale=2K)	
India is a huge country population after China highest mountains on pushed the original Drawas founded about 56 wealth exist. The climation from June to Sept (=3.7%/year av.). The they became independent atomic bombs. Most beconomic/social status	a, and is the world's earth. The isolated aravidians into the sou 0 BC. Conquerors a nate varies from temperent occupied Indent in 1947. Since the Indians are members	largest democraces ub-continent was uthern tip of Indi and invaders have perate on the nontion has increased dia from 1774-14 hen the two courses.	cy. The northern is invaded by In a. India has made been absorbed in the subtropicated from about 40 about 50 British Incities have foug	n border is boundo-Aryans from ny races, religion over the centural on the south. 00 MM in 1960 lia was split into the three wars. I	nded by the Hi in Persia about ons, and custon ries. Great diff Monsoon win to 1,000 MM to India and Pal Both of them n	malayas – the 1500 BC, who ms. Buddhism ferences of ds bring heavy in 1999, kistan when low have	
<u>PETROLEUM</u> :	INDIA		is <u>"oil poor'</u>	'"oily":(with <u>0.4</u>	% of world's C	COR.)
Oil Production: (2000) Exports:() COReserves(2000) Hubbert production pea	ormed: (1956); Nar OAPEC: () 785 - 4.7 k: ()	MBD Oil C MBC BBO; CGR: Maximum effor	Consumption: (2) Im 23 Tc t peak: (000) ports:(2000) f. Oil:R/P=)	2,070 1,2 17 EUR:	285 M yrs;R/C=6 BBC	-
Non-conventional oil pro- Like most ex-Gondwa Shield" basement rock production comes fron significance have been spite of strong efforts the Middle East is Ind	unaland countries of as and basalt lava-co m offshore fields of t m found in northeaste to do so. India contr	vered areas (gha he "Bombay Hig ern India. India's acted with Sovie	nisphere, India i tts). India is pe gh" near Bomba s government ha et oil exploration	ncludes large no troleum-poor. My/Mumbai. On as not been able n advisors until	Most of India's ly minor fields to find large of the 1970s. Pet	s oil s of local oil fields in	
References: (1) BP St. HCN#	·	al); (2) DOE/EIA	-0219 (annual); (3	3) CSM Hubbert	Center Newslet	Date: <u>7/</u>	7/01
Ref (1): Oil Production () = year; MBD = 1 Exporting Countries; COR = Claimed Oil Re	,000 Barrels/Day; Rese DAPEC = O-Arab-PEC	erves = (end year)f C. BBO = Billion l	rom BP/O&GJ C Barrels Oil; Tcf =	OPEC = Organiza = Trillion cubic fe	ation of Petroleur eet gas;	m	

HC#2001/4-1-4

R/P = COR/Production; R/C=COR/Consumption

Country Oil Summary

<u>GEOGRAPHY, HISTORY, POLITICS</u>

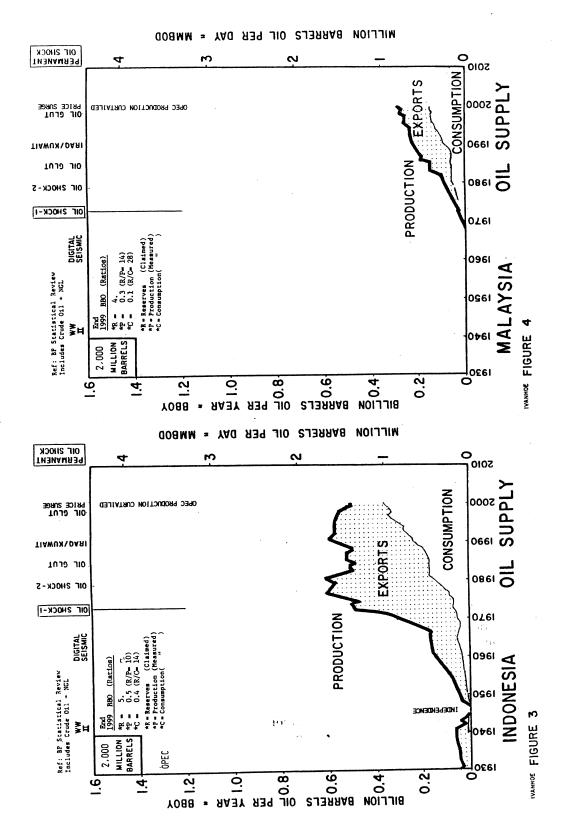
Country:	INDONES	SIA	Region:_	Far Eas	t	Fig	gure No. 3	(se	cale=2K)
Population: (1998) 2	<u>millions</u>	Main Langu	uage/Religion	Indor	nesian/Sunn	i Muslim		
Independenc	e: (1949)fro	om Dutch	Cu	rrent political	status: R	epublic			
Major Social	Turmoil: (1	965-) Riots - re	moved Suka	arno; (1998) I	Riots - remov	ed Suharto			
Indonesia is the most populous Muslim nation. Indonesia is made up of more than 13,000 islands that lie along the equator, spread over an area about the size of the U.S. Indonesia has always been a trade center on SE Asian spice trade routes. The Portuguese captured Malacca in 1511, which was taken by the Dutch in 1641. By the late 1700s the Dutch East India Company controlled commerce on most of the islands. The region became known as the Dutch East Indies. Anti-Dutch groups rebelled against the Dutch between 1825 and 1942. Japanese forces took and held the islands during WW II from 1942-1945. Local rebellions resumed after WW II, and the Dutch were forced to grant independence to Indonesia in Dec. 1949. The first president was Sukarno (1945-1966) followed by Suharto (1968-1998). A major financial/economic crisis occurred in 1997-1998, when student riots brought down Suharto. The economic/political problems continue. After the 1985 oil price collapse, the economy was diversified to be less dependent on oil & gas prices. The population increased from 172MM in 1987 to 201MM in 1997 – an increase of 17% in ten years. Many local businesses are Chinese-owned.									
PETROLEU	<u>M</u> :	INDONESI	A	is	gassy" &	"oily":(with <u>0.5</u>	%	of world's COR.)
First oil/gas	discovery: O	onshore (1885)		Off	shore: (19	068)			
_	•	med: (1958); Na	ame:		mina	/		Oil Natio	onalized (1960)
	1 2	OAPEC: (-							
	,	1,430		Oil Consum	ption:(2000)	1,065		MBD
Exports:(20	00)	365		_MBD	Impor	ts:()_		_	MBD
COReserves	(1999)	5	_BBO; CG	R: 72	Tcf.	Oil:R/P=	10		yrs;R/C= <u>13</u> yrs
Hubbert prod			Maximun	n effort peak:	()		EUR:		BBO
Non-convent	ional oil prod	1.()		MBD;	"Other" oi	l prod. ()	MBI)
Natural Ga	ıs (LNG) to J	producing country apan since 1978. ssible that Indone	Indonesian	oil consumpt	ion is increa	sing, with it	s populatio	n, faster	than its

References: (1) BP Statistical Review (annual); (2) DOE/EIA-0219 (annual); (3) CSM Hubbert Center Newsletter:	Ivanho	e
HCN#	Date:	7/7/01
	Rev:	
Ref (1): Oil Production = crude oil + oil sands + natural gas liquids. BP = British Petroleum; O&GJ = Oil & Gas Journal;		
() = year; MBD = 1,000 Barrels/Day; Reserves = (end year) from BP/O&GJ OPEC = Organization of Petroleum		
Exporting Countries; OAPEC = O-Arab-PEC. BBO = Billion Barrels Oil; Tcf = Trillion cubic feet gas;		
COR = Claimed Oil Reserves; CGR = Claimed Gas Reserves; EUR = Estimated Ultimate Recovery-BBO. e = estimated.	Í ——	
R/P = COR/Production: R/C=COR/Consumption	İ	

and Natural Gas currently account for about 25% of Indonesia's export earnings - down from more than 80% in the

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early 1980s.



HC#2001/4-1-6

Country Oil Summary

OLOGKAFIII, IIISTOK	1, FULTICS						
Country: MALAYS	JA	Region:	Far East	F	igure No. 4	(scale=2K)	
Population: (1999) 2			e/Religion		h / Sunni Muslin		_
Independence: (1957)fro				us: Constitution			_
Major Social Turmoil: (W II Japan o		as <u>. Constitution</u>	ar monarchy		_
Wajor Bociar Turmon.)	vv 11 Japan o	ccupation				_
Malaysia includes the form (=Straits Settlements.) Europeans arrived in what In 1641 the Dutch took the Malay Peninsula. Boccupied the peninsula The Malaysia Peninsula	hat is now Malaysia over Melaka from t out total British conduring WW II 1941	a during the 1 the Portugues trol was not e 1-1945.	500s. In 1511 tee. In the late 1'established until	the Portuguese sei 700s the British aı	zed the kingdom	of Melaka. 4 took over	
PETROLEUM:	MALAYSIA			<u>y"&"low"</u> "oily"	:(with 0.4	% of world's	s COR.)
First oil/gas discovery: O National oil company for	med: (1974); Nan	ne:	Offshore Petronas	e: (1974)	Oil N	Nationalized ()
Joined OPEC: (-)	OAPEC: (-)			()			
Oil Production: (2000)			il Consumption		445		MBD
Exports:(2000)	360		IBD	Imports:()_	-		MBD
COReserves(2000)		BBO; CGR:		_Tcf. Oil:R/P=_	14	yrs;R/C=_	•
Hubbert production peak:		Maximum ef)	EUR:		30
Non-conventional oil prod	i.()		MBD; "O	ther" oil prod. ()	MBD	
Most of Malaysia's oil a Thailand	and gas fields were	discovered in	1 the 1970s offs	shore in the South	China Sea and th	e Gulf of	
References: (1) BP Stat	istical Review (annua	l): (2) DOF/F	FIA-0219 (annual): (3) CSM Hubber	t Center Newslette	er: Ivanhoe	
	2000, Oil & Australi			,, (=) ==1.11145001		Date:	7/7/01
						Rev:	
Ref (1): Oil Production =							
() = year; MBD = 1,0							
Exporting Countries; Oz COR = Claimed Oil Rese						nated -	
R/P = COR/Production;			s, EUK – Estillat	ica Omnate Recove	1y-DDO. E – ESIIII	aicu.	

HC#2001/4-1-7

Country Oil Summary

GEOGRAPHY, HISTORY, POLITICS	
Country:AUSTRALIARegion:OceaniaFigure No.5(scalePopulation: (1998)19millions Main Language/ReligionEnglish / Protestant ChristianIndependence: (1901) fromBritish ColonyCurrent political status:Constitutional Monarchy (1914-18) & WW II (1939-45); Great Depression 1930s	e=2K) British)
Australia is a great "island-continent", about the size of the U.S./48. It is very thinly populated, most people livis six coastal cities. The Great Australian Desert covers the interior of the continent. Australia was discovered by seamen in the early 1600s. A great deal of the continent's animal and plant life is unique, with very distinctive animals and plants found nowhere else.	
In 1770 Captain Cook explored the fertile SE coast and claimed the region for Britain. After U.S. independence British courts shipped convicts to Australia from 1788 to 1868 to relieve overcrowding in English jails. The Australian gold rush (1851-1860) brought thousands of prospectors who stayed on after the gold rush fizzled out 1901 Britain approved the formation of the Commonwealth of Australia, keeping the British monarch as the hea state. The discoveries of offshore oil and gas during the 1960s and 1970s helped the national balance of payments.	t. In
PETROLEUM: is low oil & gassy :(with 0.3 % of	f world's COR.)
Joined OPEC: (-) OAPEC: (-) Oil Production: (2000) 815 MBD Oil Consumption: (1999) 870 Exports:() - MBD Imports: (1999) 55	il and field ast of nelf
HCN# 2000/3, July 2000, Oil & Australia	Ivanhoe Date: 7/7/01 Rev:
Ref (1): Oil Production = crude oil + oil sands + natural gas liquids. BP = British Petroleum; O&GJ = Oil & Gas Journal;	

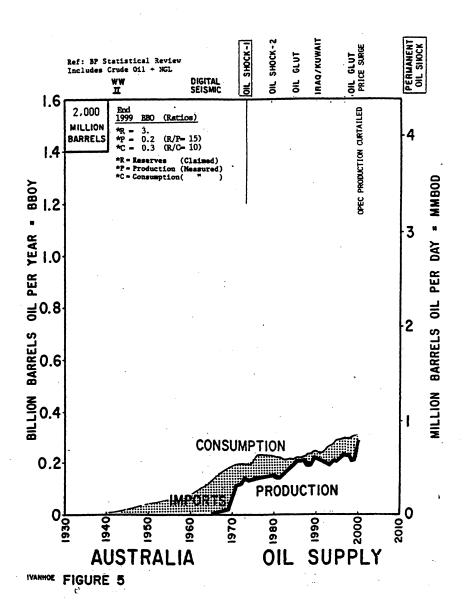
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R/P = COR/Production; R/C=COR/Consumption

 $(\quad \) = year; \ MBD = 1,000 \ Barrels/Day; \ Reserves = (end \ year) from \ BP/O\&GJ; \ OPEC = Organization \ of \ Petroleum \ Applied to the property of t$

COR = Claimed Oil Reserves; CGR = Claimed Gas Reserves; EUR = Estimated Ultimate Recovery-BBO. e = estimated.

Exporting Countries; OAPEC = O-Arab-PEC. BBO = Billion Barrels Oil; Tcf = Trillion cubic feet gas;



HC#2001/4-1-9

A) CSM / HCN OIL SUPPLY GRAPHS

The OIL SUPPLY GRAPHS of the CSM/HCN PETROLEUM POSITION papers are designed/standardized to facilitate comparisons between oil supply factors (production/consumption/exports/imports) of selected nations (eg China vs Egypt, etc.) The OIL SUPPLY graphs also summarize trends/facts to help recognize any nation's HUBBERT PRODUCTION PEAK (HPP). (See HCN#2001/3 p. 10 for a discussion of problems in recognizing the HPP.)

B) ASSUMPTIONS ARE NOT FACTS

PETROLEUM RESOURCES ARE ASSUMPTIONS-NOT FACTS

Measurements are FACTS. Assumptions, forecasts, and projections are not. Assumptions can be 1% to 100% WRONG. Analyses of ASSUMPTIONS are still ASSUMPTIONS – even after they are run through sophisticated computer programs/models. All "models" include assumptions, regardless of how logical they may be to the designer. Any analyses of USGS undiscovered RESOURCES produce ASSUMPTIONS - not FACTS.

As the computer programmers say: "GIGO" (Garbage in = Garbage out.)

C) "Our problem is that much of what we know – just ain't so" (Will Rogers).



The M. KING HUBBERT CENTER FOR PETROLEUM SUPPLY STUDIES

located in the Department of Petroleum Engineering Colorado School of Mines Golden, Colorado

The Hubbert Center has been established as a non-profit organization for the purpose of assembling and studying data concerning global petroleum supplies and disseminating such information to the public.

The question of WHEN worldwide oil demand will exceed global oil supply is stubbornly ignored. The world's oil problems, timing and ramifications can be debated and realistic plans made only if the question is publicly addressed. A growing number of informed US and European evaluations put this crisis as close as now to 2014. The formation of this center is to encourage a multifield research approach to this subject.

HC#2001/4-2-10

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Notes

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