

IDEES

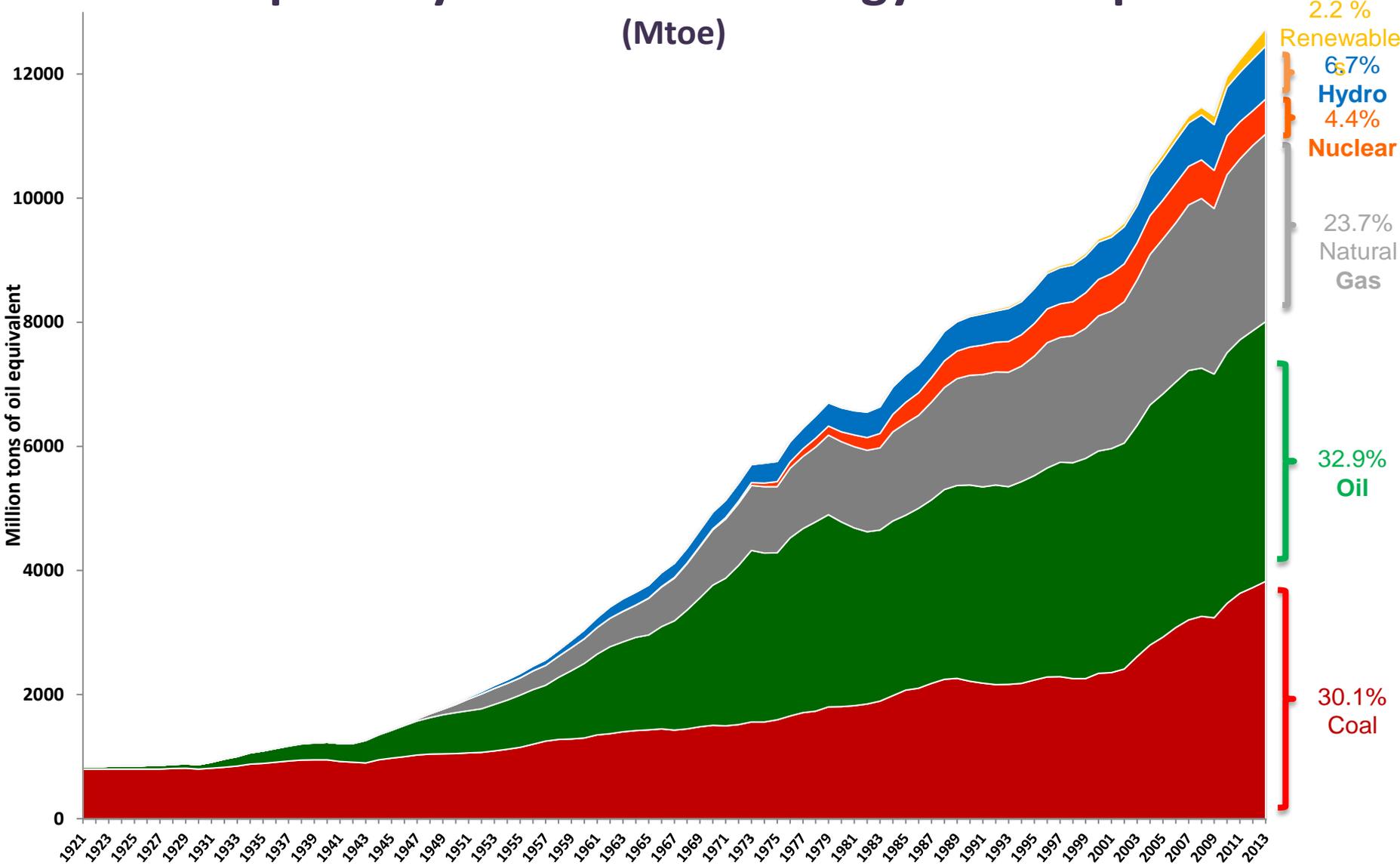
Géopolitique de l'énergie

Cycle 2015 – 2016
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Jean-Pierre Favennec
IFP School Professor

jpfavennec@yahoo.fr

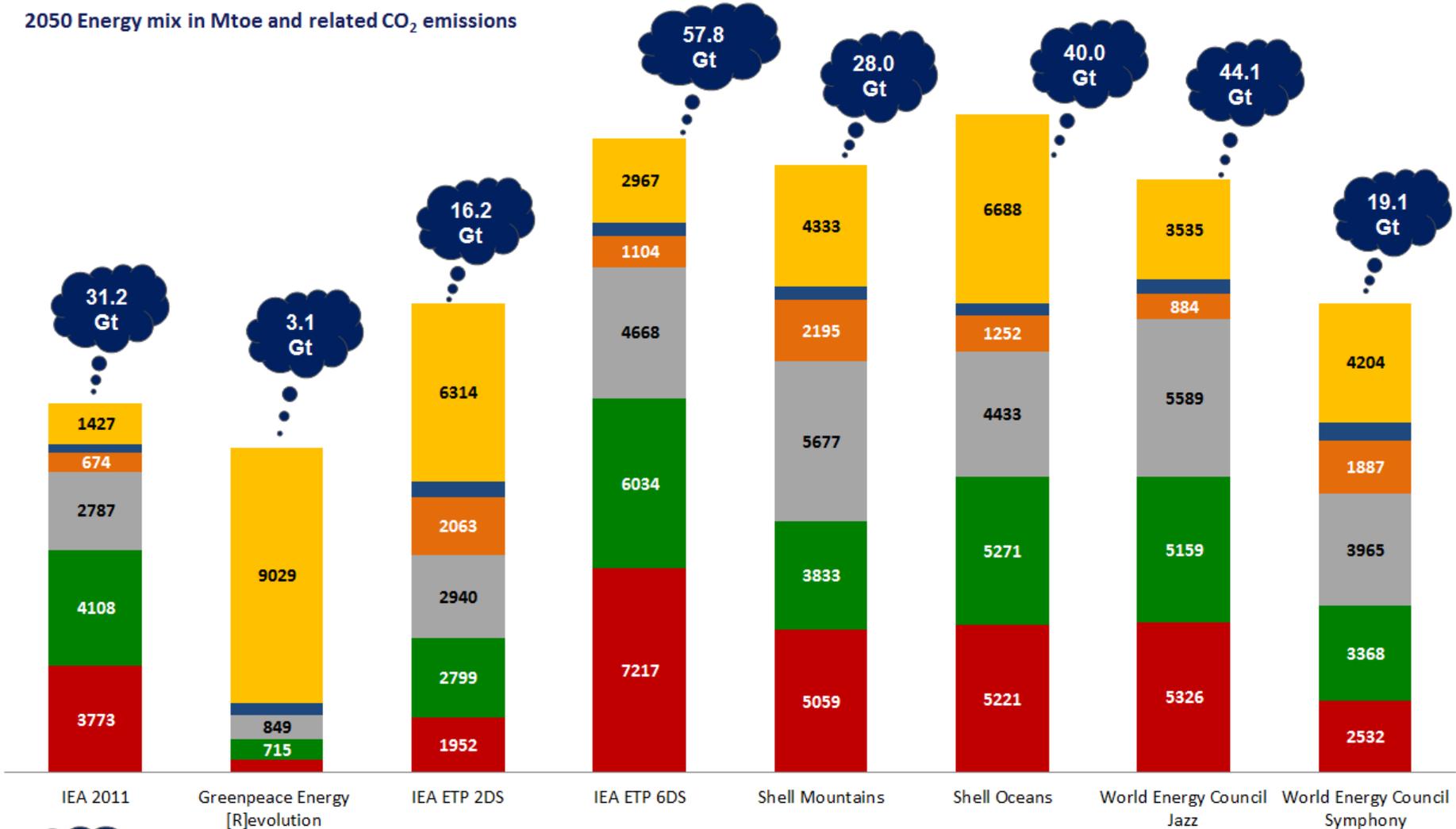
World primary commercial energy consumption (Mtoe)



Sources : Schilling & Al. (1977), BP Statistical 2014

Which energy mix in 2050?

2050 Energy mix in Mtoe and related CO₂ emissions

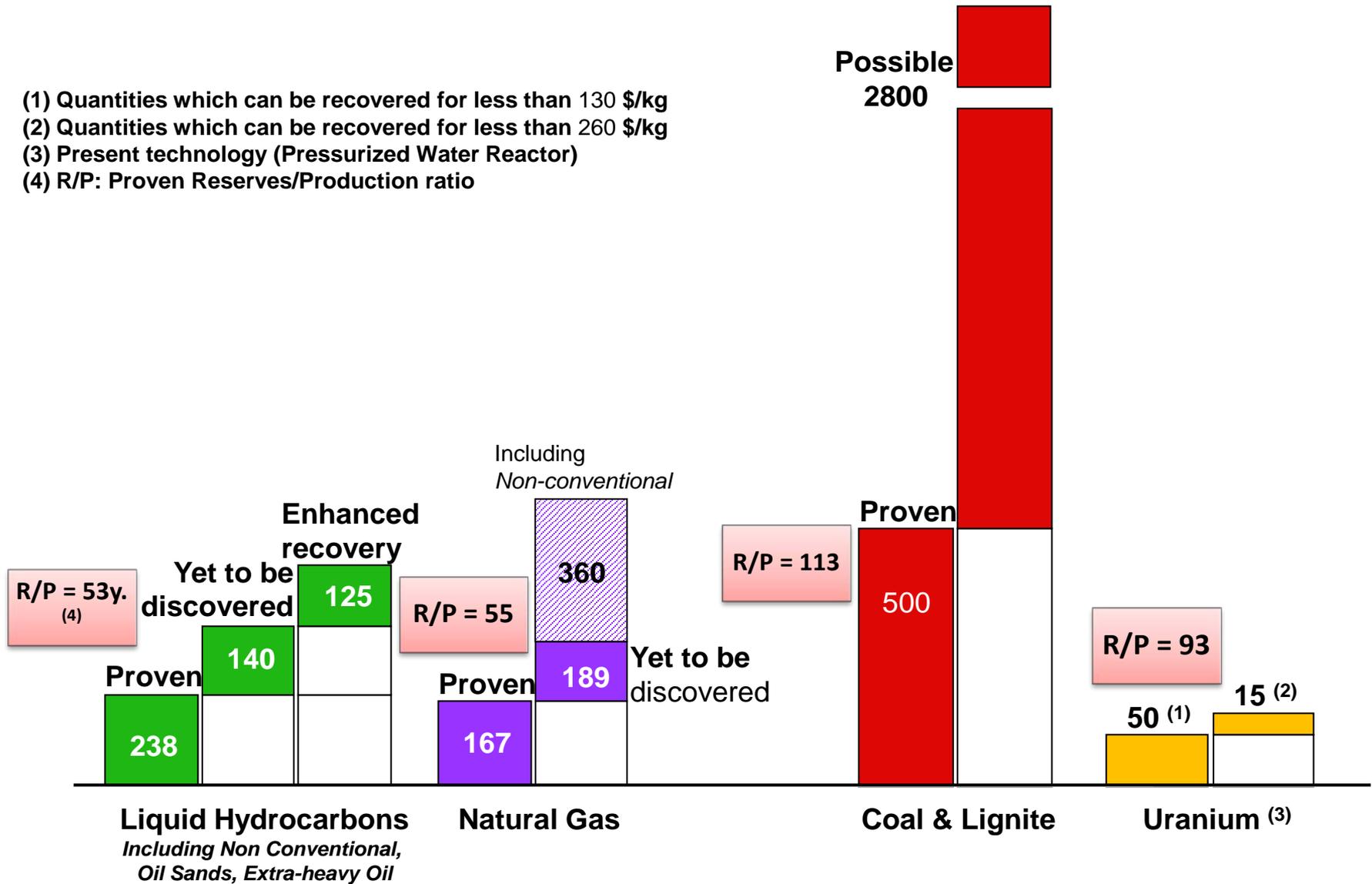


Energy related CO₂ emissions

■ Coal
 ■ Oil
 ■ Natural Gas
 ■ Nuclear
 ■ Hydro
 ■ New Renewables

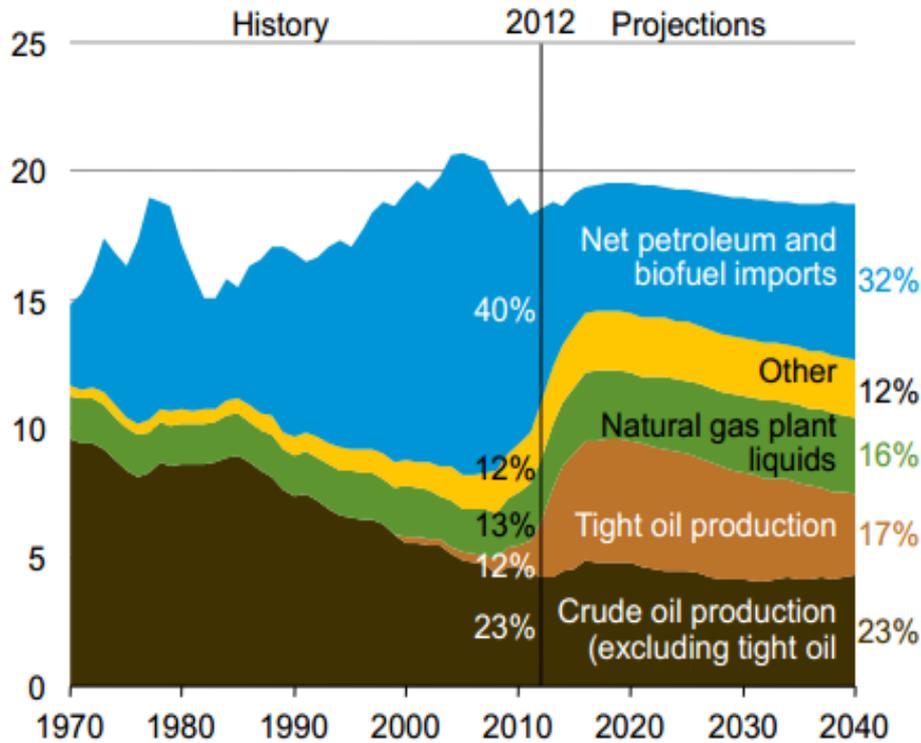
World reserves (Gtoe) - 2014

- (1) Quantities which can be recovered for less than 130 \$/kg
- (2) Quantities which can be recovered for less than 260 \$/kg
- (3) Present technology (Pressurized Water Reactor)
- (4) R/P: Proven Reserves/Production ratio

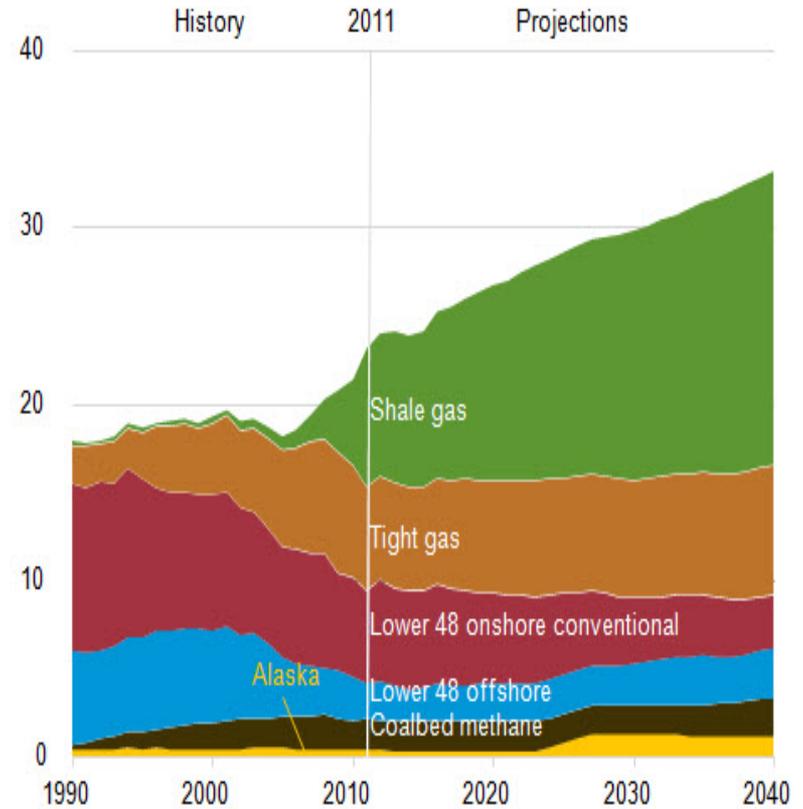


US Oil & Gas production today and tomorrow

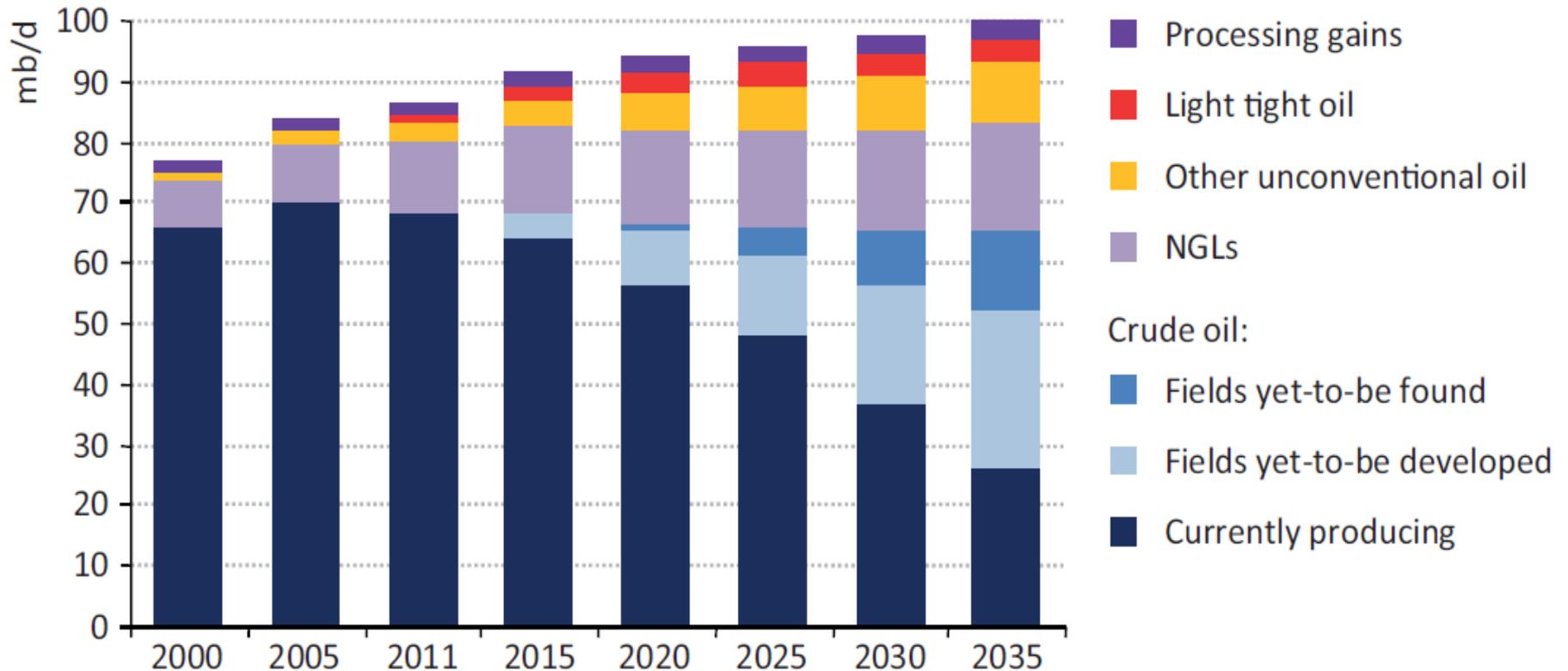
U.S. petroleum and other liquid fuels supply by source, 1970-2040 (million barrels per day)



Natural gas production by source, 1990-2040 (trillion cubic feet)

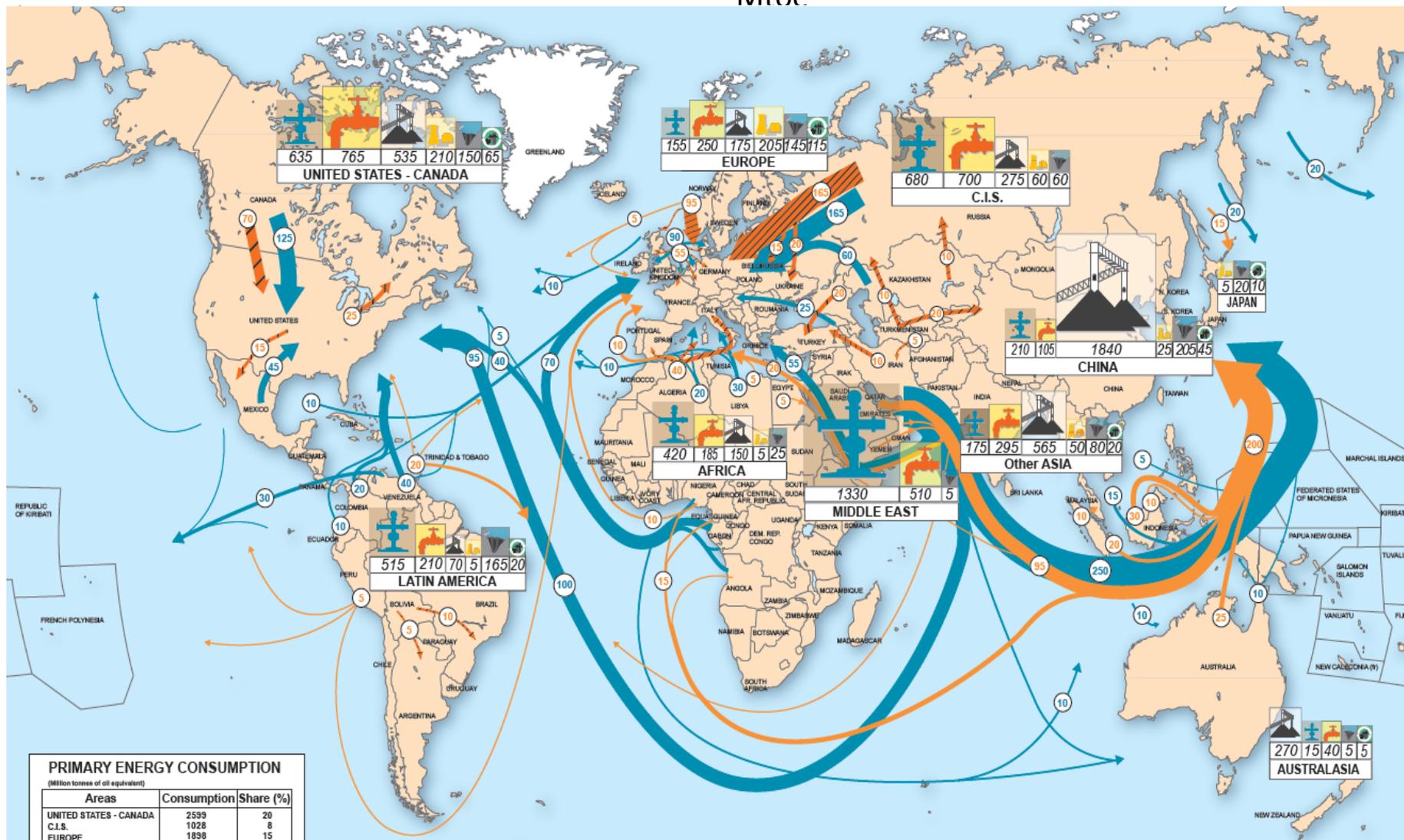


Energy today, energy tomorrow



Worldwide energy flows: 2013

Mtoe



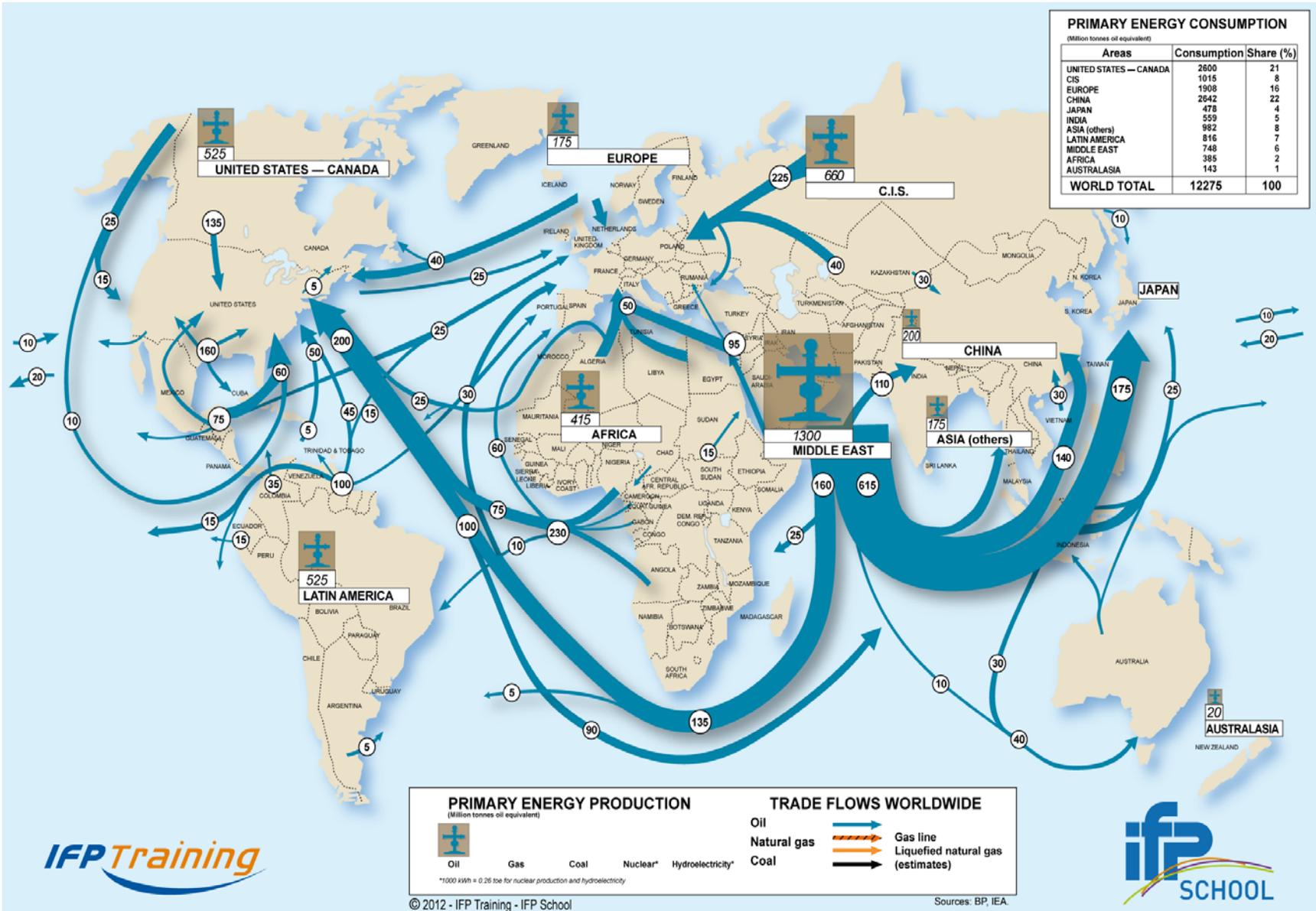
PRIMARY ENERGY CONSUMPTION (Million tonnes of oil equivalent)		
Areas	Consumption	Share (%)
UNITED STATES - CANADA	2599	20
C.I.S.	1028	8
EUROPE	1898	15
CHINA	2880	23
JAPAN	474	4
INDIA	535	5
Other ASIA	1066	8
LATIN AMERICA	862	7
MIDDLE EAST	785	6
AFRICA	408	3
AUSTRALASIA	136	1
WORLD TOTAL	12731	100

PRIMARY ENERGY PRODUCTION (Million tonnes of oil equivalent)					
Oil	Natural Gas	Coal	Nuclear*	Hydroelectricity*	Renewables**

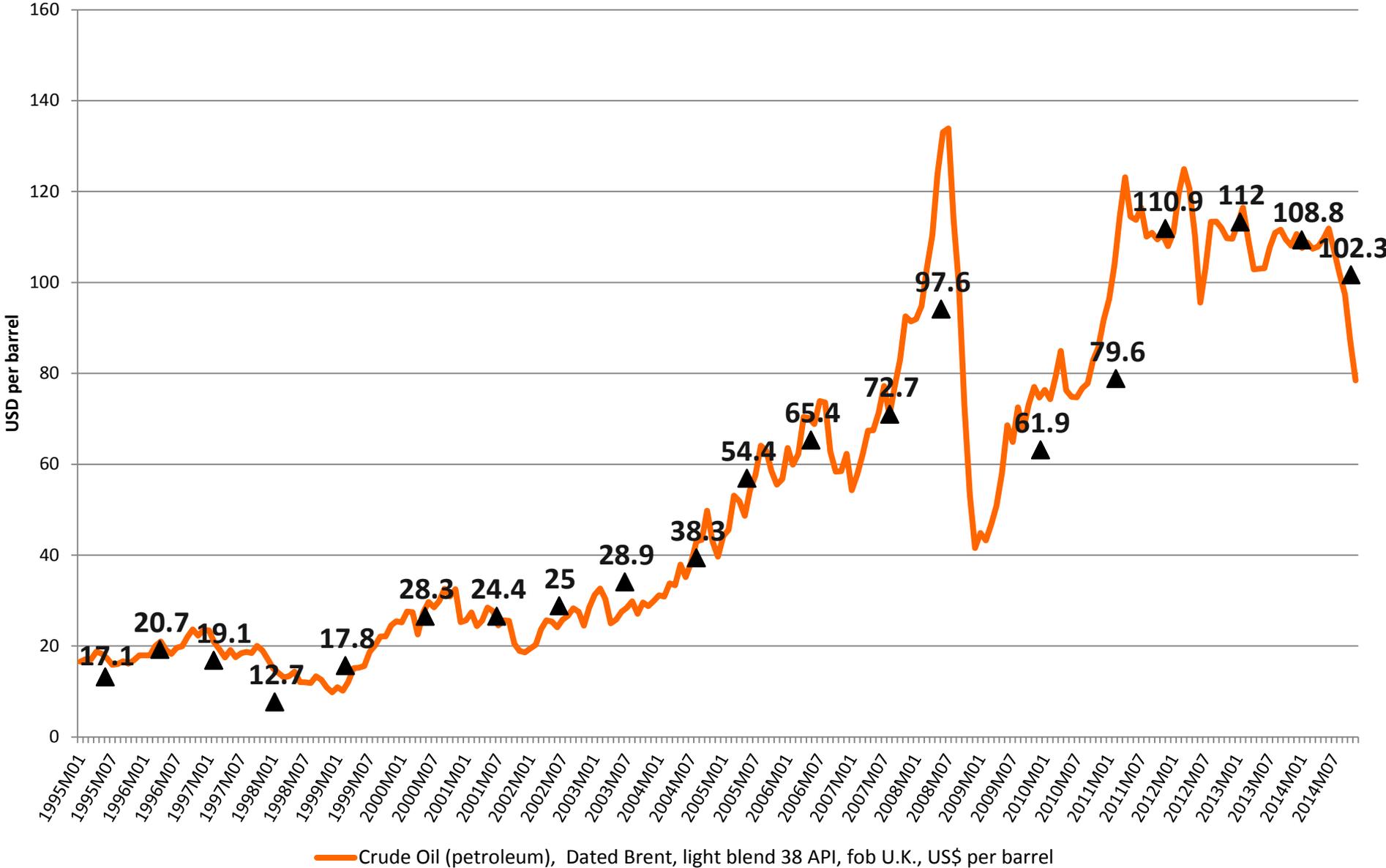
*1000 kWh = 0.28 toe for nuclear production and hydroelectricity
** Modern renewables used to generate electricity. Biofuels

OIL & GAS TRADE FLOWS WORLDWIDE	
Oil	
Natural gas	
	Gas line
	Liquefied natural gas

Worldwide crude flows: 2011



Dated Brent price (monthly) – 1996-2015



Crude Oil (petroleum), Dated Brent, light blend 38 API, fob U.K., US\$ per barrel