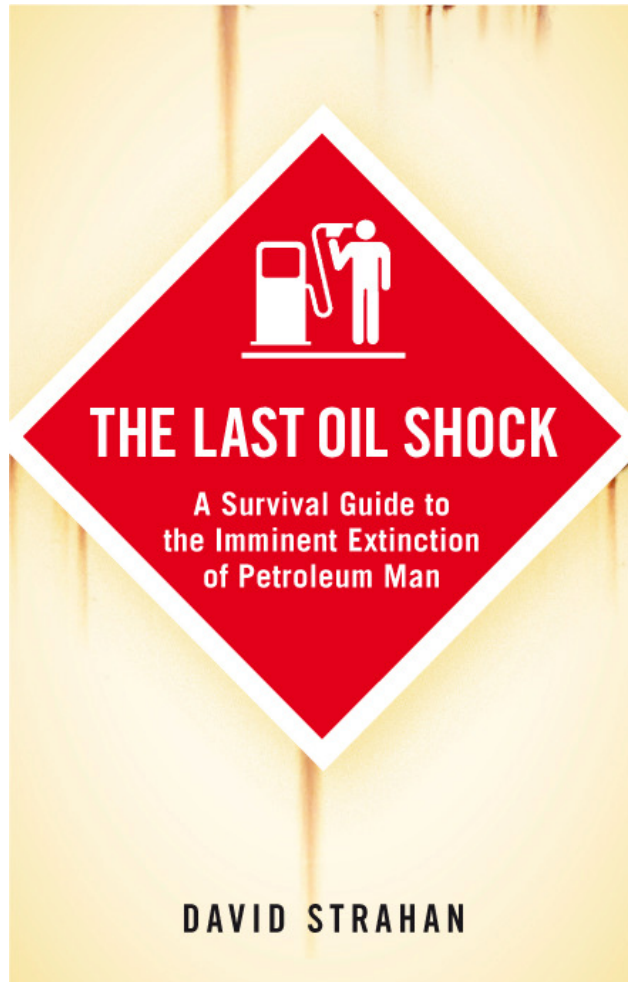


Peak oil and economic crisis



Royal Town Planning Institute

**Peak Oil – Implications for
Planning Policy**

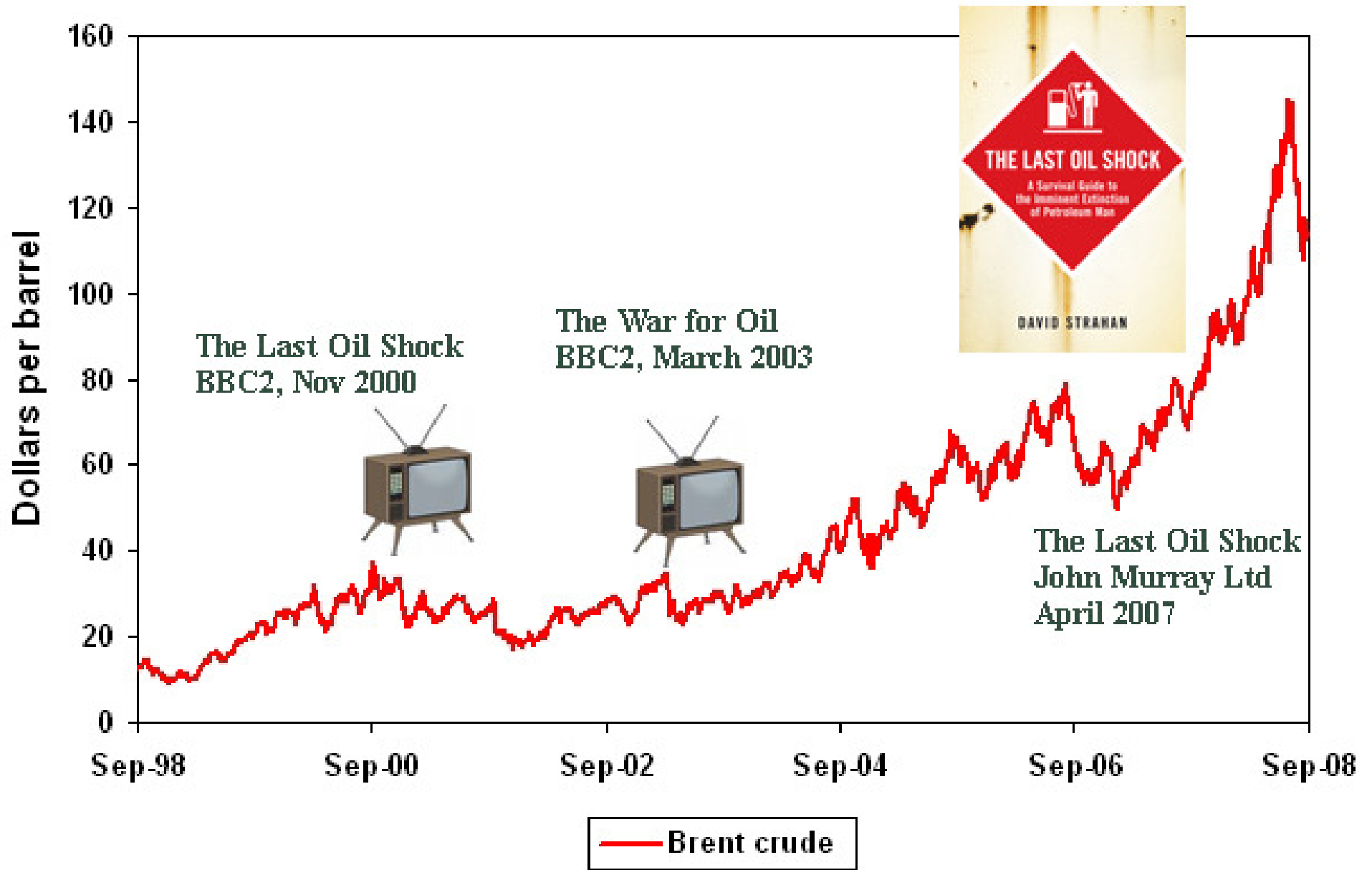
17 January 2012

David Strahan

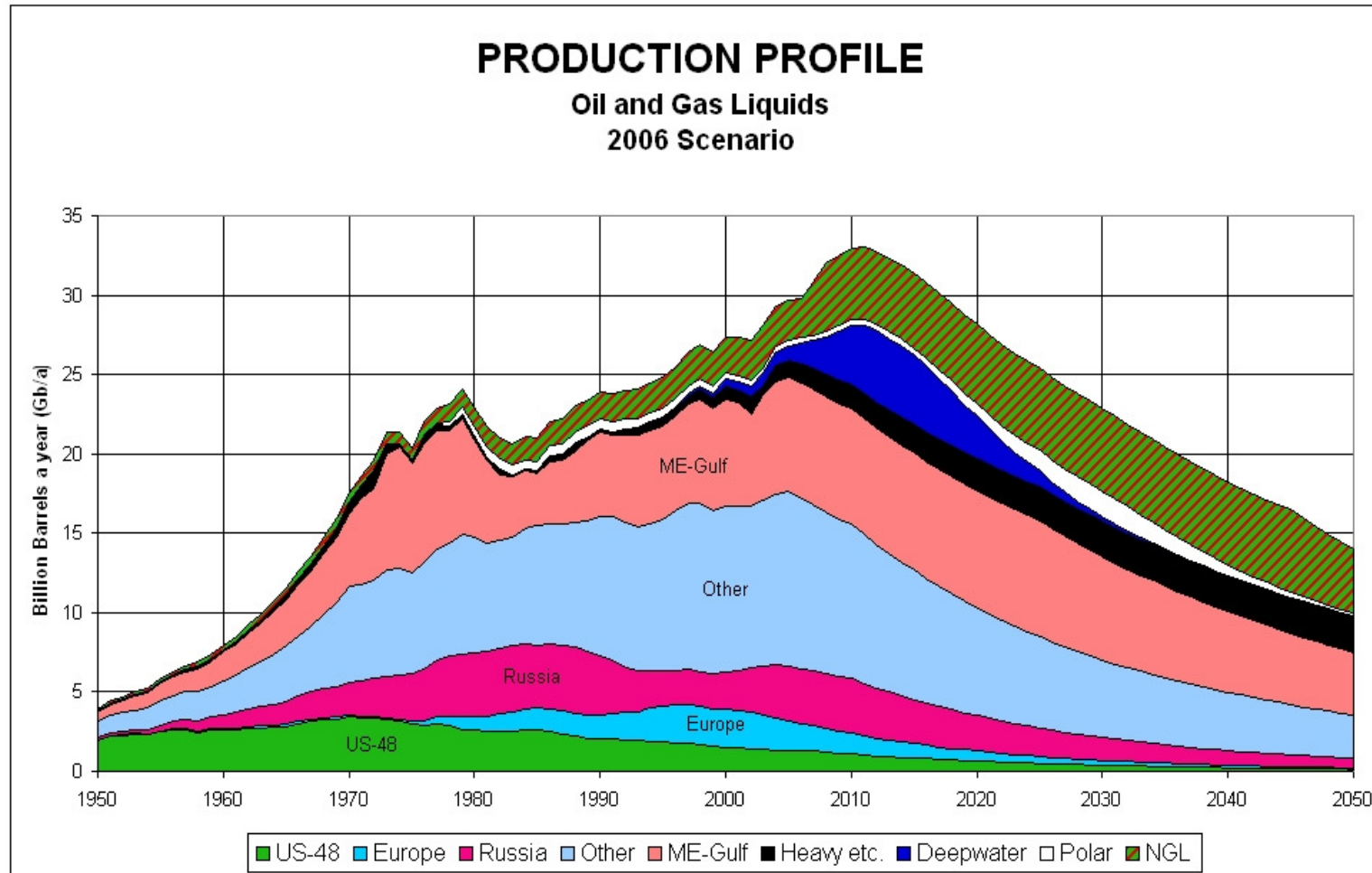
Oil Depletion Analysis Centre

lastoilshock.com





Why they call it peak oil

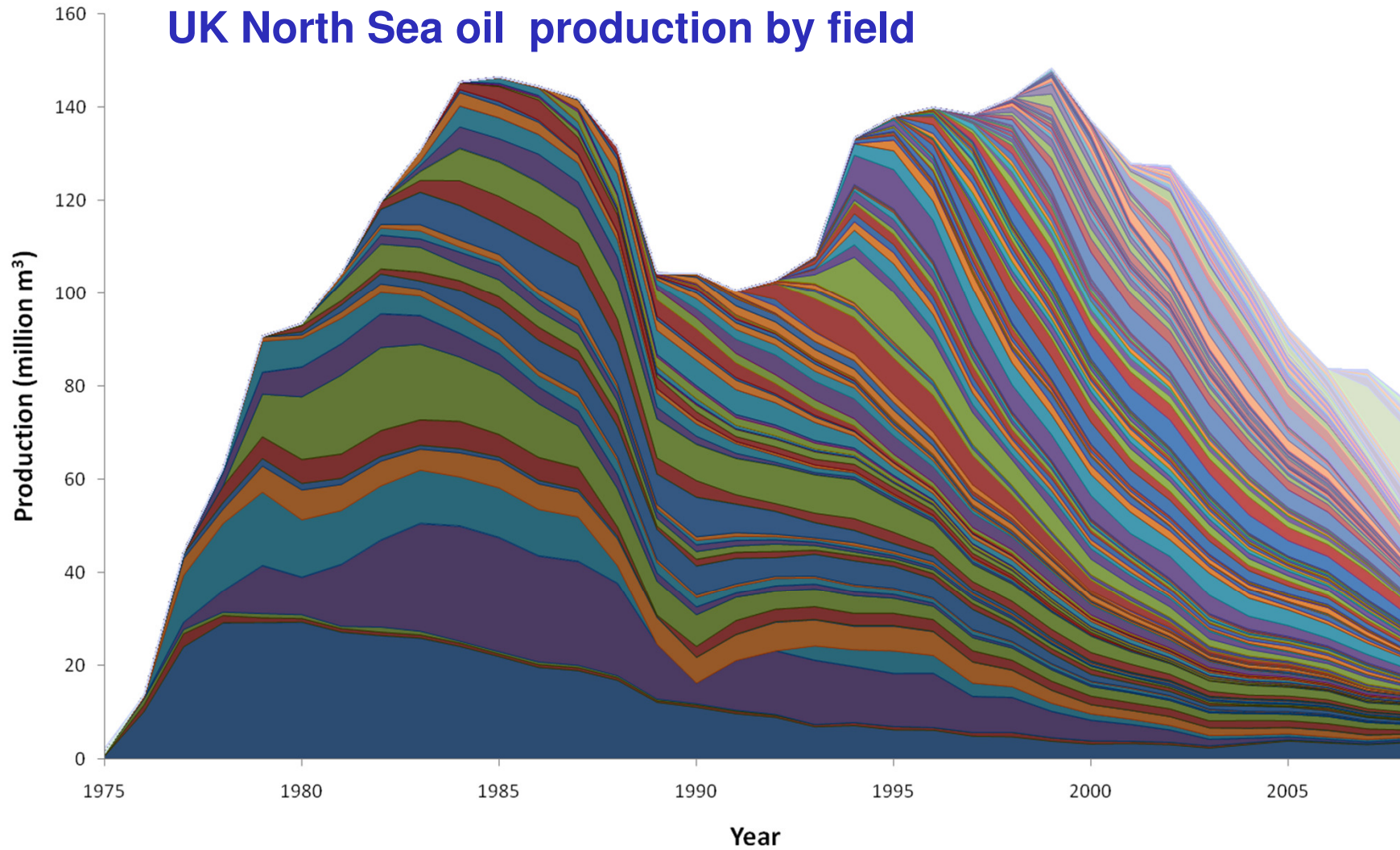


Source: ASPO

lastoilshock.com



Why oil peaks

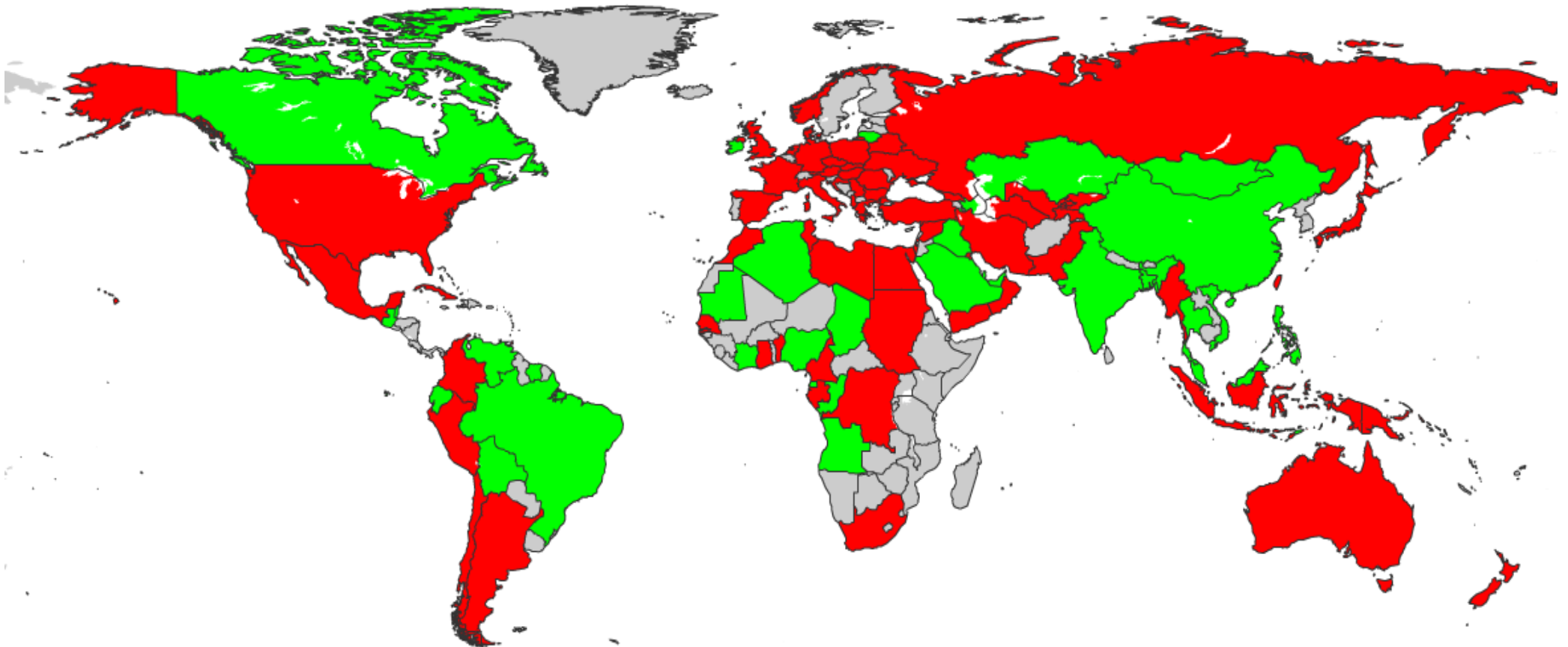


Source: UKERC, DECC

lastoilshock.com



Post peak oil producers (64)



We're all peakists now...

Sadad al-Huseini	2004
Kenneth Deffeyes	2005
Bank Macquarie	2009
Uppsala University	2009
Colin Campbell	2010
Chris Skrebowski	2014
Douglas-Westwood	2015
PFC Energy	2020
UKERC	'significant risk' pre-2020
Total	2015-2020
Shell	2020s
IEA	2020-30
OPEC	2037
US EIA	2037
CERA	sometime never



Why it matters

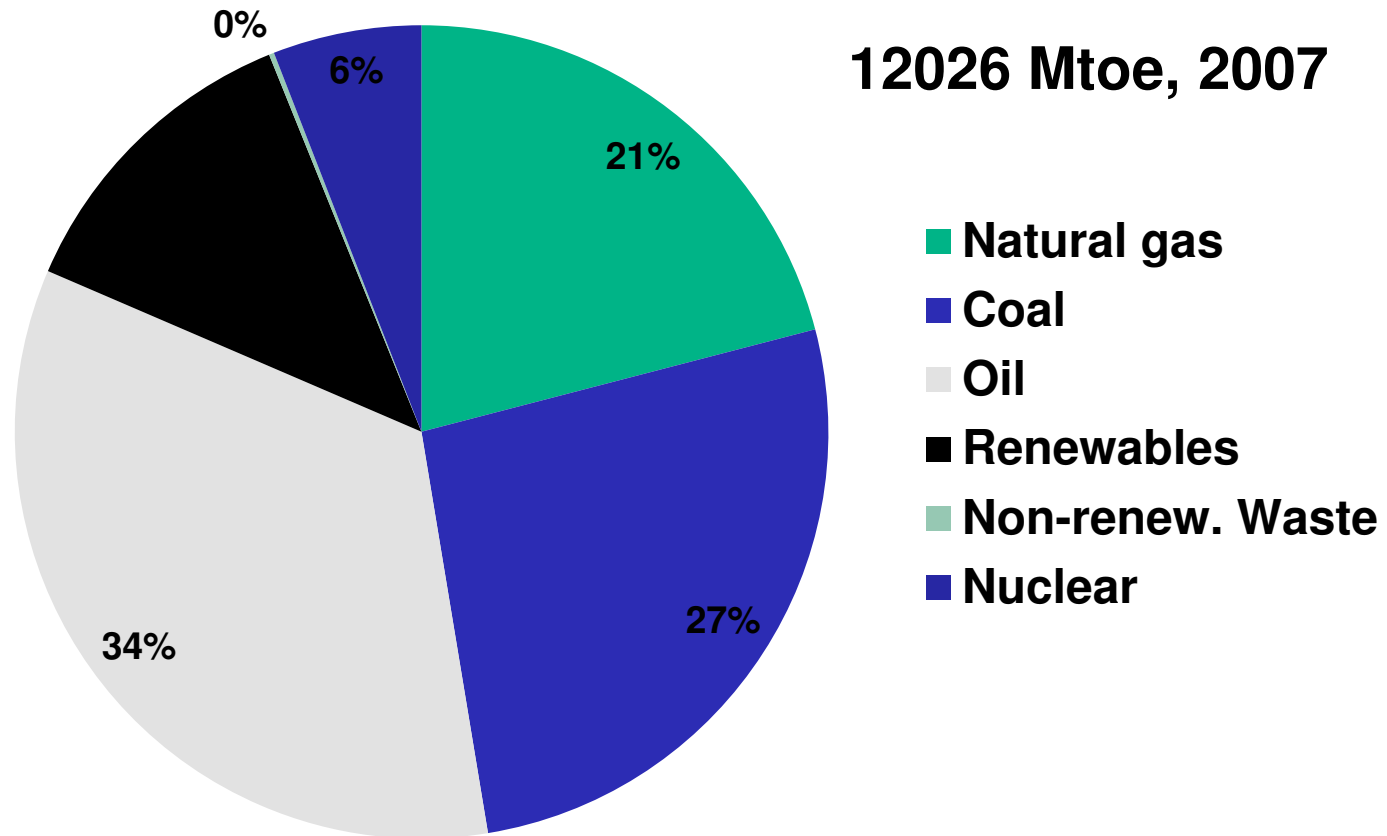
- . Oil supplies 95% transport energy**
- . Agriculture: producing 1 calorie of food requires 10 calories of fossil energy.**
- . Oil and gas provide all petrochemicals and lubricants**
- . Oil drives gas and power prices**
- . Oil price spikes cause recessions**



The primacy of oil

Global primary energy by fuel

12026 Mtoe, 2007



Source data: IEA Renewables Data, 2009

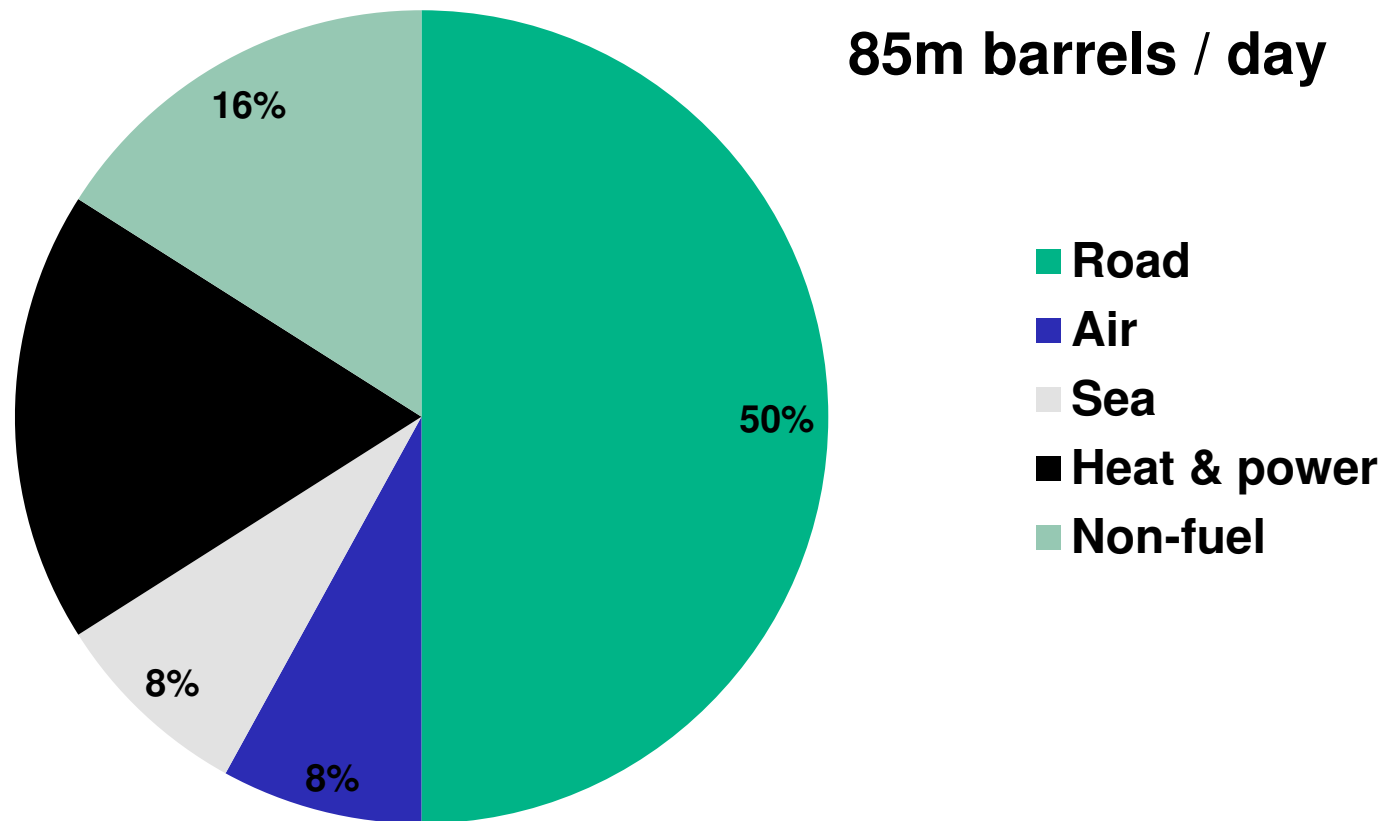
lastoilshock.com



Where the oil goes

Oil use by function

85m barrels / day



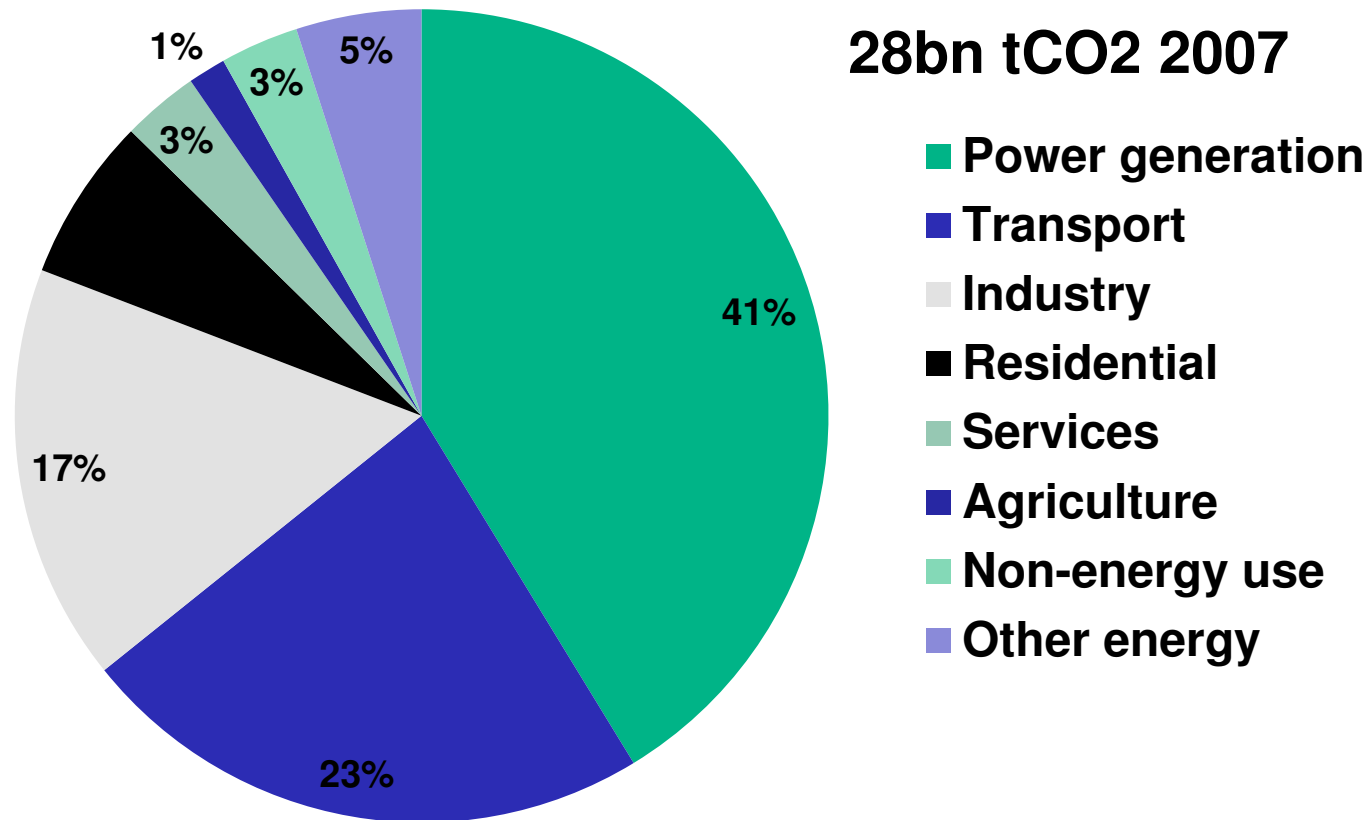
Source data: ITPOES, 2010

lastoilshock.com



Peak oil and climate change

CO2 emissions by sector

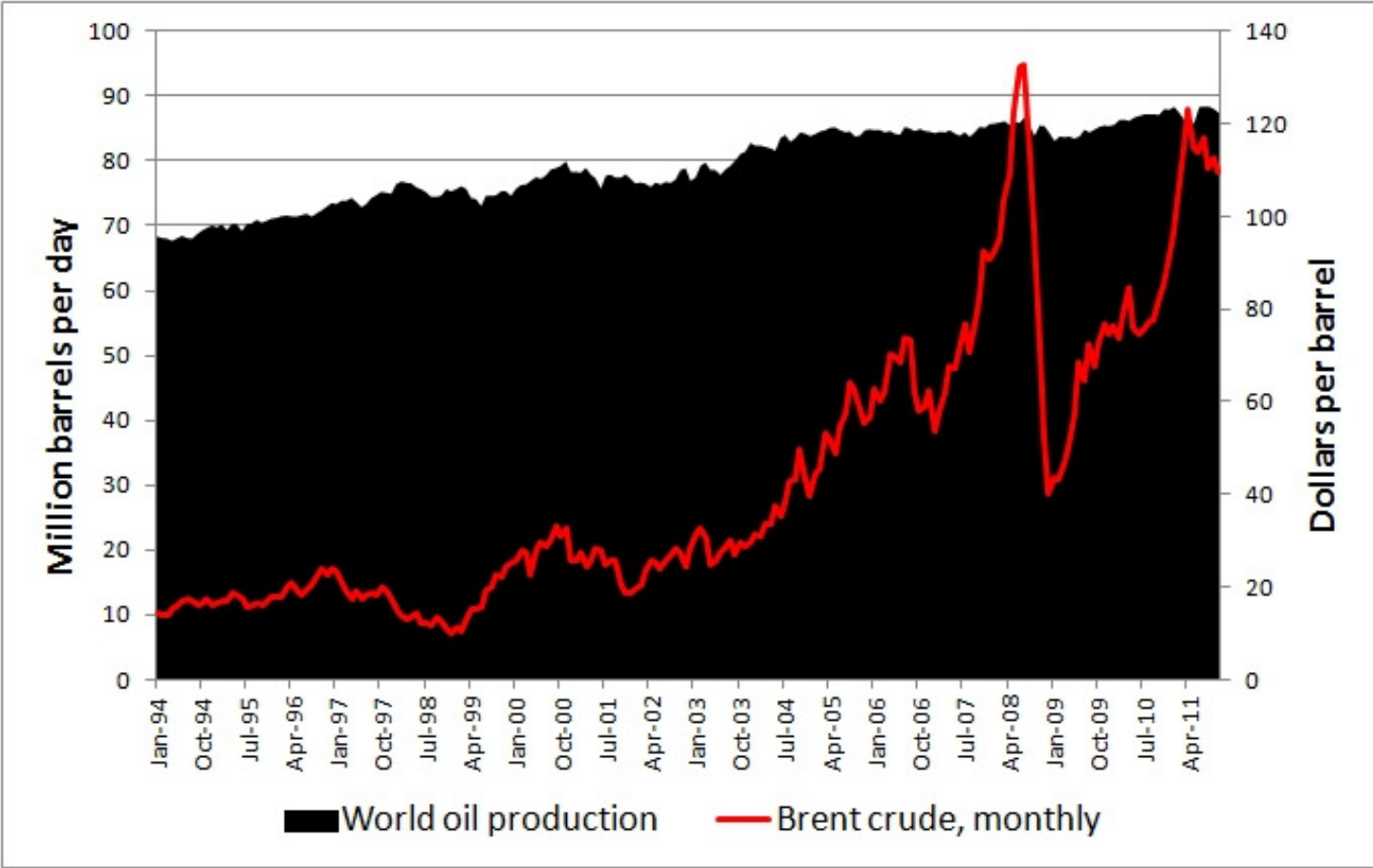


Source data: IEA WEO 2009

lastoilshock.com



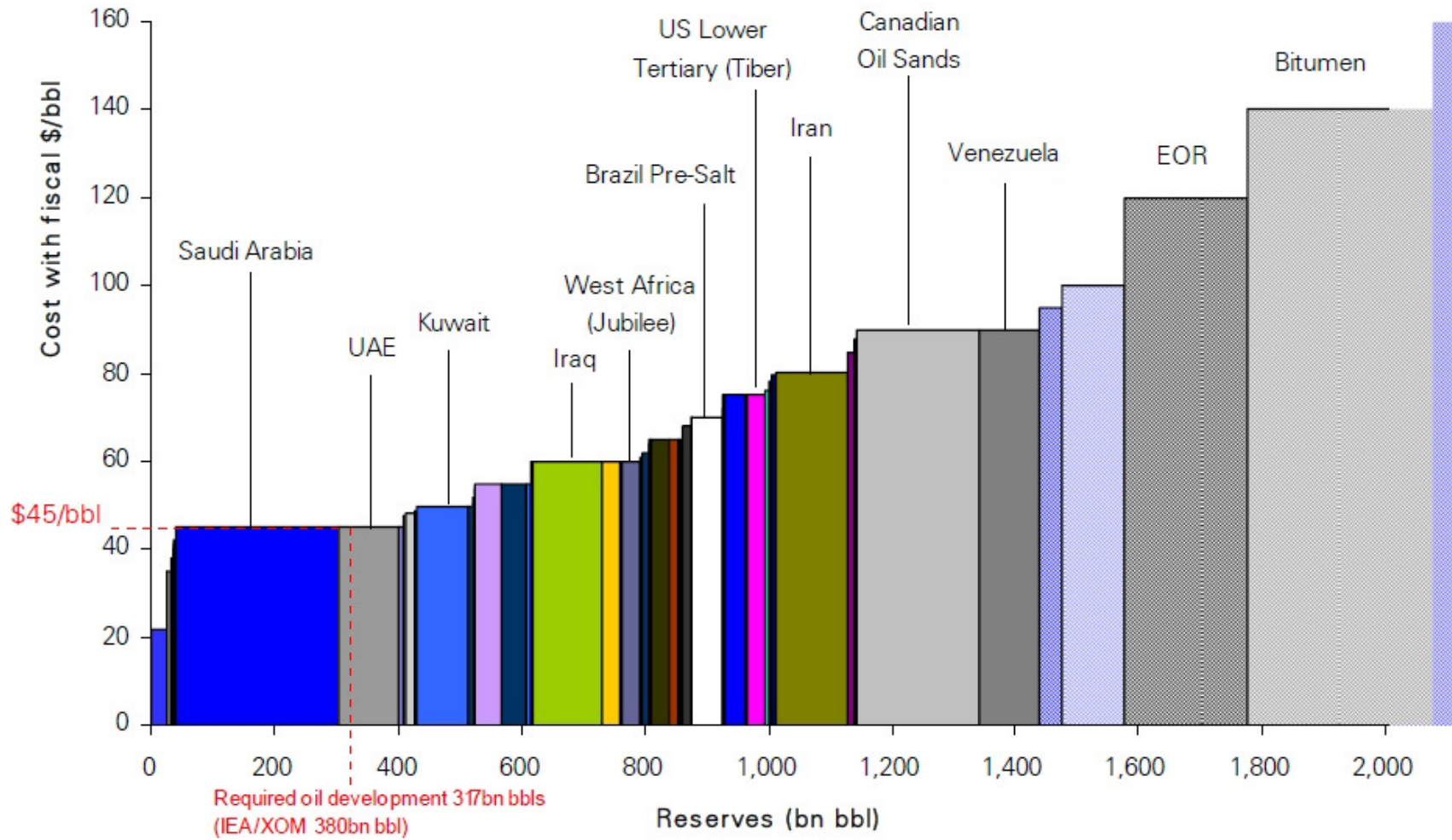
Are we there yet?



Source: EIA



Marginal barrel costs \$90

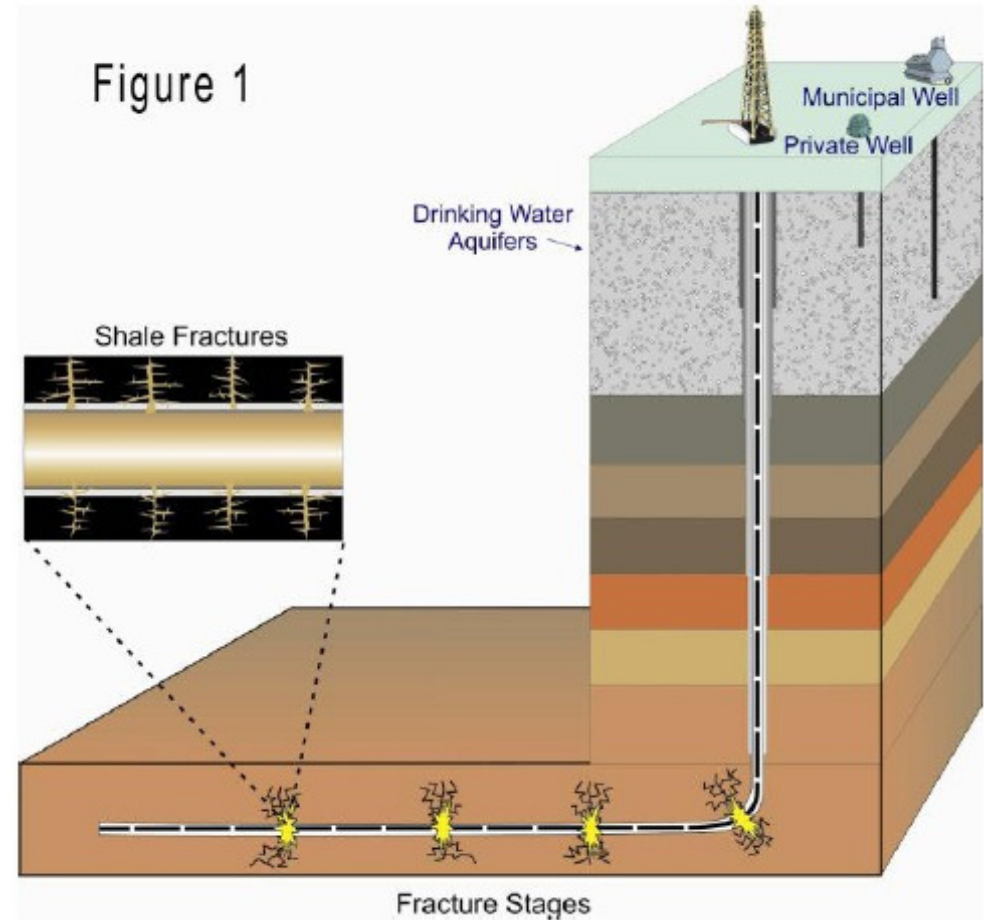
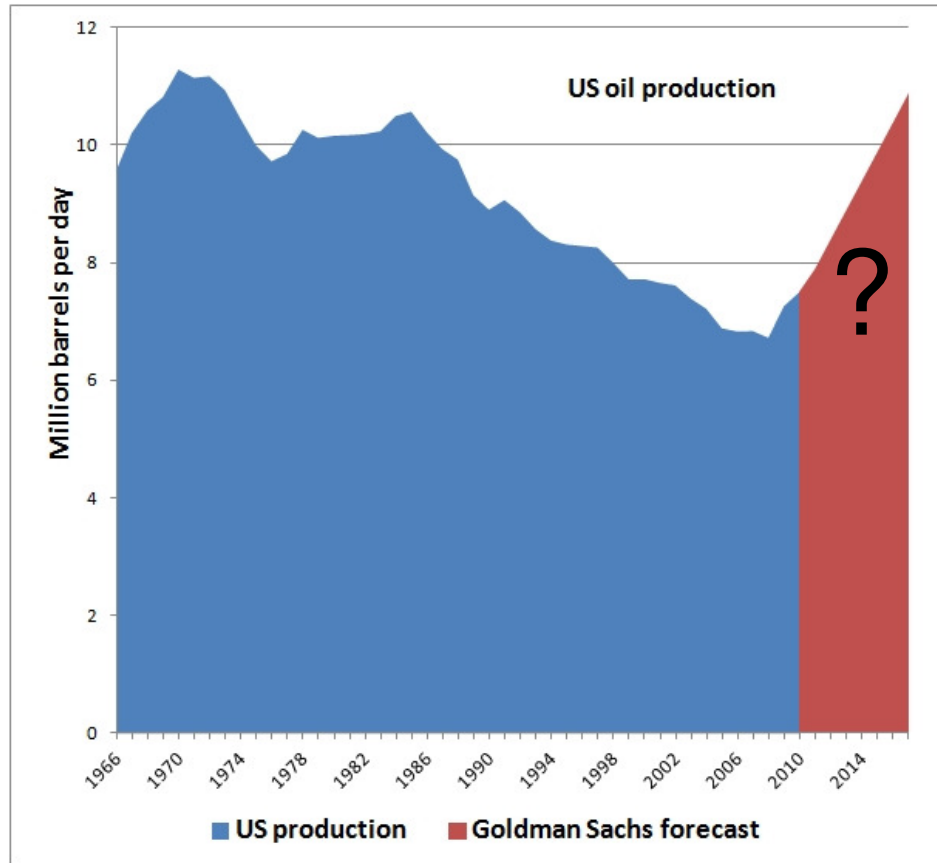


Source: Goldman Sachs

lastoilshock.com



US shale oil to destroy Hubbert's peak?

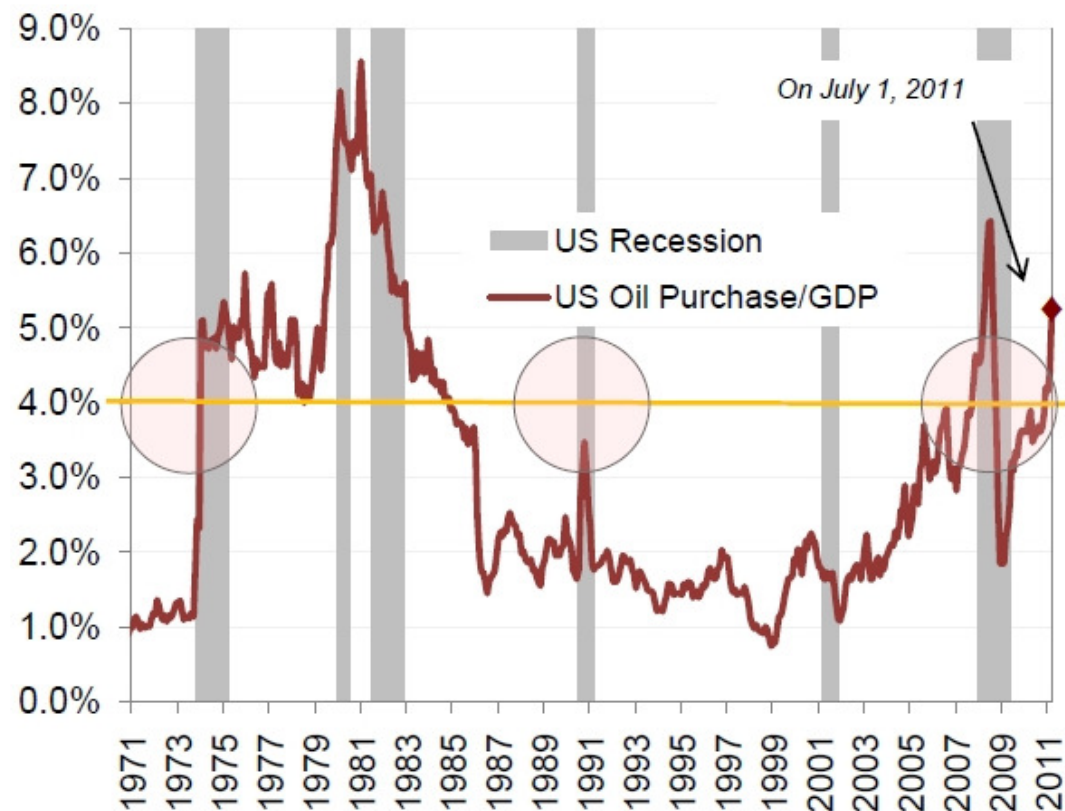


Data sources: BP Statistical Review; Goldman Sachs

lastoilshock.com



Oil price spikes cause recessions



**4% GDP
=\$90/bbl**

US Crude Oil Expenditure as a Percent of GDP

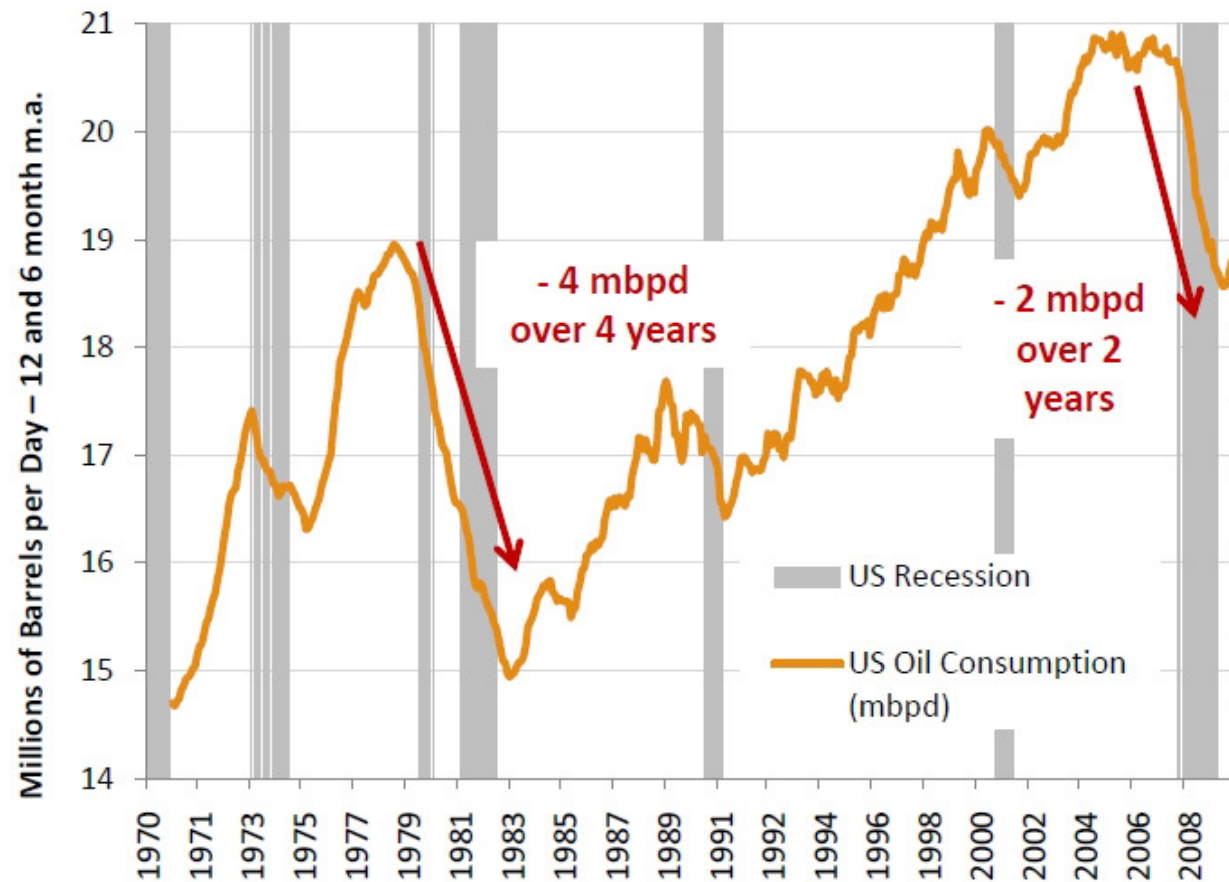
Source: EIA STEO, Monthly data, through March 2011

Source: Douglas Westwood

lastoilshock.com



Oil consumption only falls during recessions



US Crude Oil Consumption

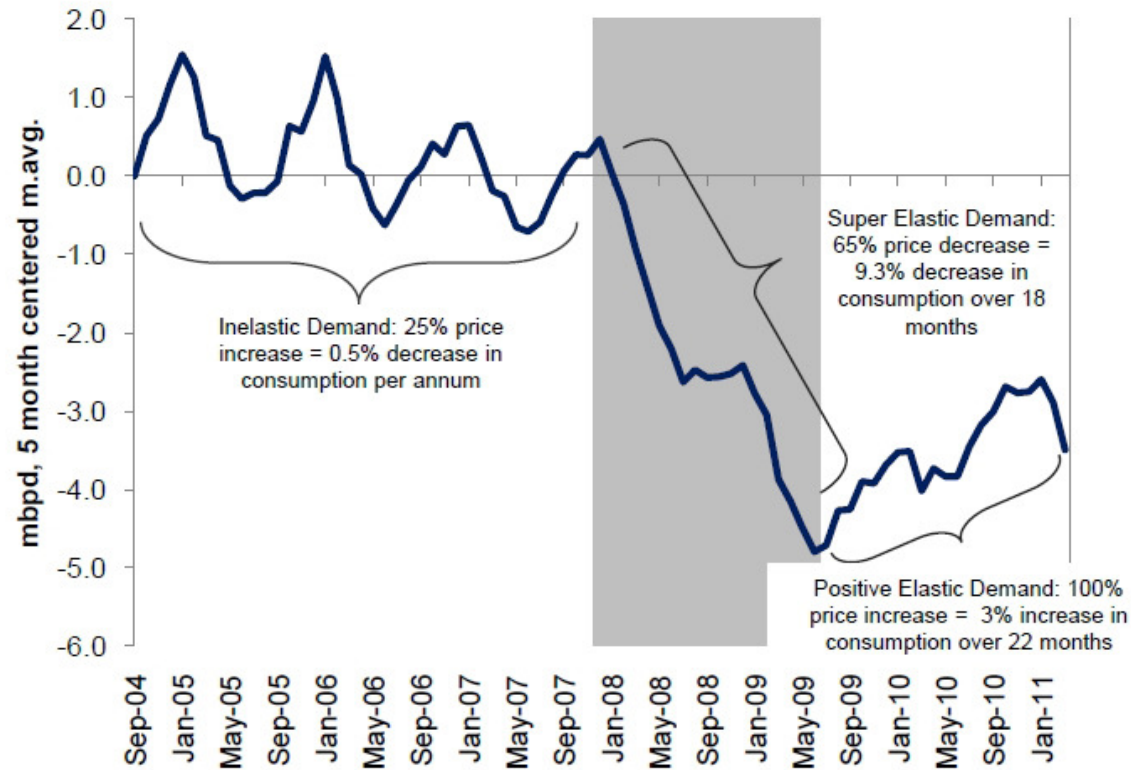
Source: NBER, EIA

Source: Douglas Westwood

lastoilshock.com



Last recession OECD loses 4mbpd oil demand



Change in OECD Oil Consumption from the Stalling of the Oil Supply in H2 2004

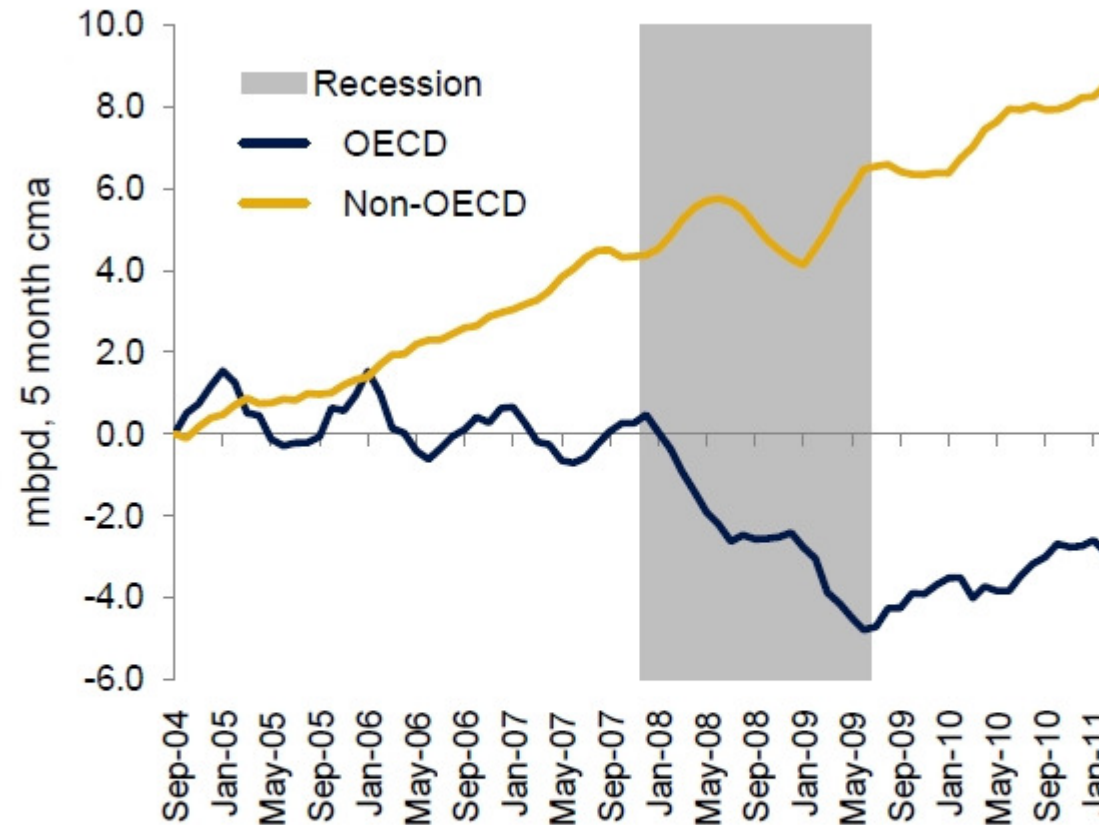
Source: NBER, EIA

Source: Douglas Westwood

lastoilshock.com



\$90 oil shifts consumption from developed to developing countries



Change in OECD and non-OECD Oil Consumption, from Stalling of Oil Supply in Q4 2004

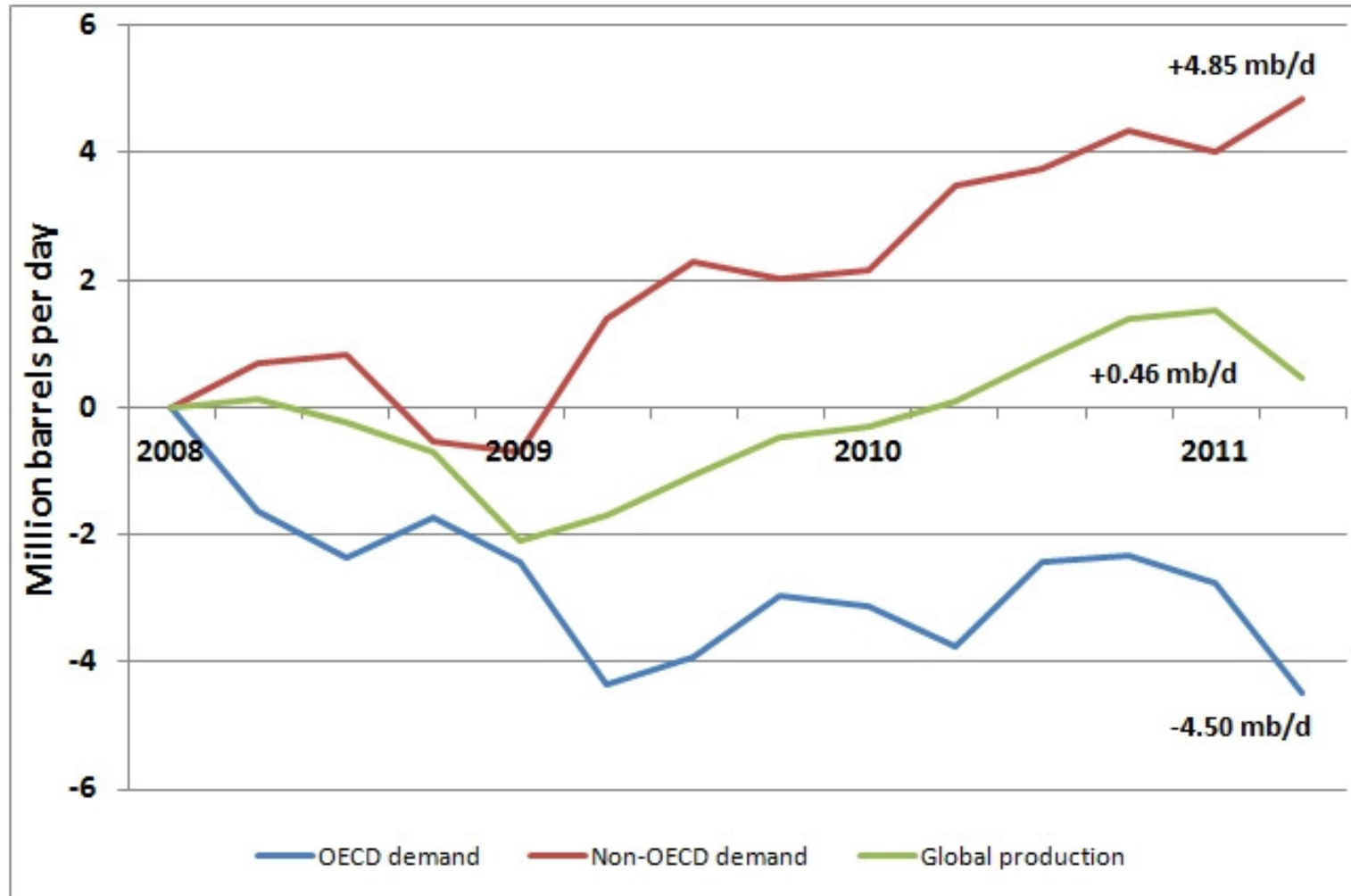
Source: EIA STEO

Source: Douglas Westwood

lastoilshock.com



OECD cedes oil to non-OECD

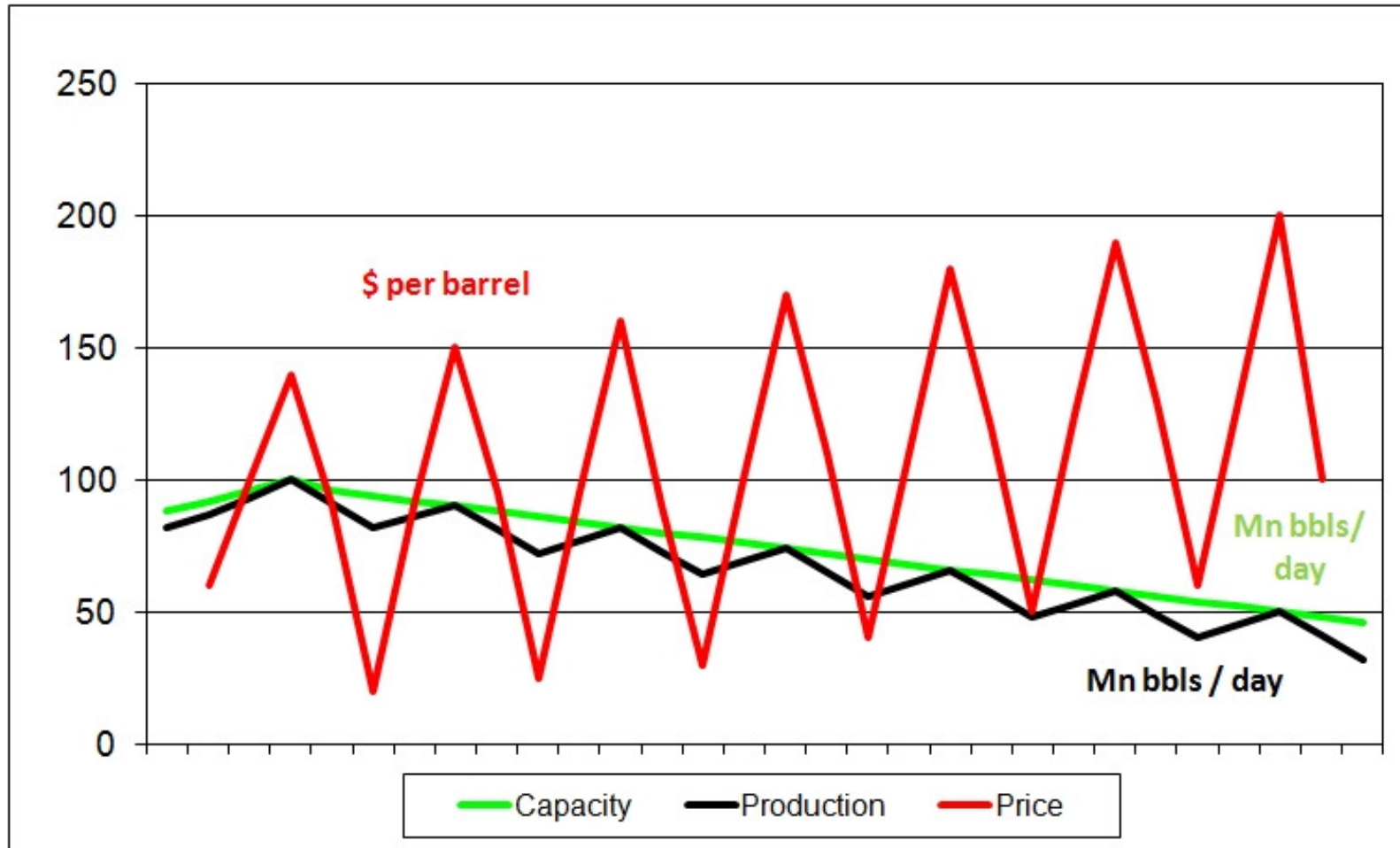


Data source: IEA

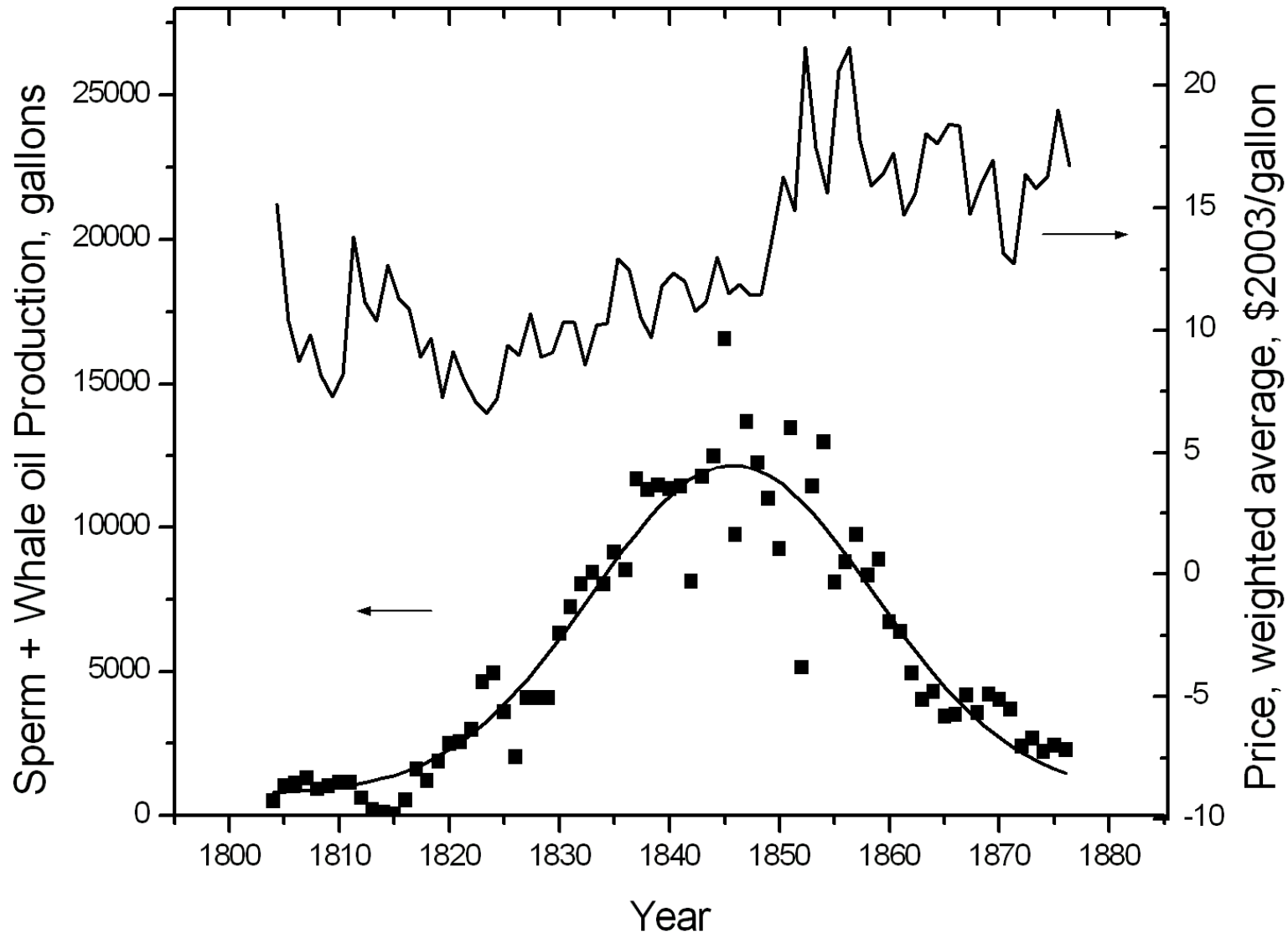
lastoilshock.com



The shape of things to come...



Look what happened last time...



Source: Prof. Ugo Bardi, University of Firenze

lastoilshock.com



Impacts

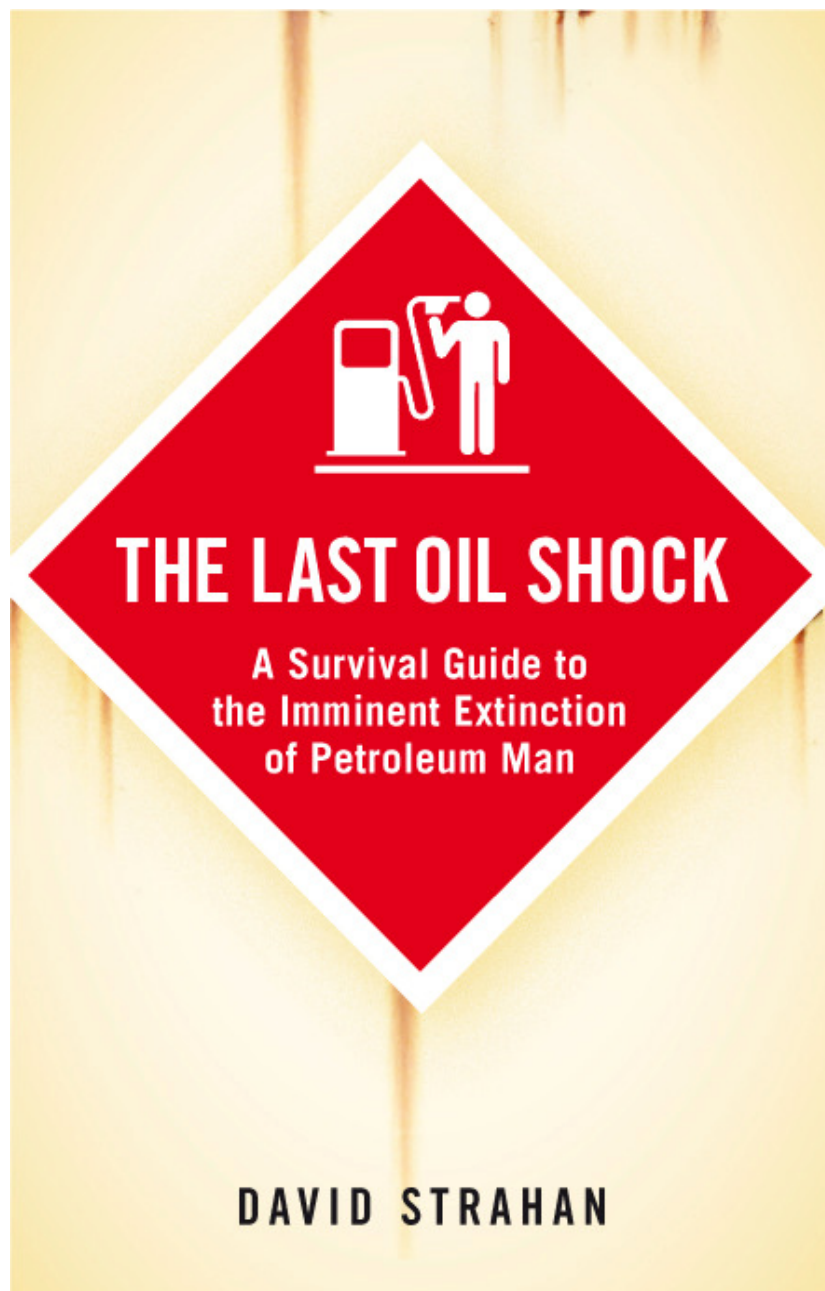
- . Oil price volatility, rising spikes**
- . Serial recessions**
- . Shrinking fuel supply**
- . Short term outages – 2000 revisited?**
- . Sooner than climate change!**



Peak and climate strategy

- **Decarbonize electricity supply**
- **Electrification of ground transport**
- **Biogas**
- **Demand reduction – TEQs**
- **Carbon pricing**
- **Planning – reorganize the chess board!**





“This book should be compulsory reading in government in this and every other oil importing country.”

Richard Hardman CBE, former head of E&P, Amerada Hess

“...a really good and informative read on a topic that affects us all.”

Lord Oxburgh, former chairman of Shell

“This important and easily-read book is the first I've seen which presents the vital technical data accurately and intelligibly.”

Jeremy Gilbert, former Chief Petroleum Engineer, BP

“A well written exposition of the peak oil case.”

Ed Crooks, Energy Editor, Financial Times

lastoilshock.com

