

The importance of crude oil

From ecopolitical perspective

Dr. Ákos Fürcht

08.04.2022



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2020. február 20.

Pénznem	Devizanév	Egység	Forintban kifejezett érték
CHF	svájci frank	1	318,24
EUR	euro	1	337,86
USD	USA dollár	1	312,83



MAGAS KOLESZ
Klinikai vizsgálatba toborzu

HOME OIL PRICES ENERGY ALTERNATIVE ENERGY GEOPOLITICS FINANCE BREAKING NEWS PREMIUM

All Prices OPEC Blends Canadian Blends U.S. Blends

WTI CRUDE •	54.05 ▲ +0.56 +1.05%	LOUISIANA LIGHT •	54.44 ▼ -0.13 -0.24%
BRENT CRUDE •	58.96 ▲ +0.24 +0.41%	BONNY LIGHT •	59.93 ▲ +2.11 +3.65%
MARS US •	53.89 ▲ +1.44 +2.75%	MEXICAN BASKET •	48.85 ▲ +1.36 +2.86%
OPEC BASKET •	58.35 ▲ +1.67 +2.95%	NATURAL GAS •	1.944 ▼ -0.027 -1.37%
URALS •	54.30 ▲ +0.50 +0.93%	Click Here for 150+ Global Oil Prices	

BREAKING NEWS: Russia, OPEC Will Not Move Forward Their Next Meeting

2021. február 18.

Pénznem	Devizanév	Egység	Forintban kifejezett érték
CHF	svájci frank	1	331,44
EUR	euro	1	358,80
USD	USA dollár	1	297,17



HOME	OIL PRICES	RIG COUNT	ENERGY	ALTERNATIVE ENERGY	GEOPOLITICS	VIDEO	BREAKING NEWS
All Prices OPEC Blends Canadian Blends U.S. Blends							
WTI CRUDE	60.16	-0.98	-1.60%	LOUISIANA LIGHT	62.07	+1.85	+3.07%
BRENT CRUDE	63.53	-0.81	-1.26%	BONNY LIGHT	62.48	+0.62	+1.00%
MARS US	61.59	+1.09	+1.80%	MEXICAN BASKET	58.80	+2.00	+3.52%
OPEC BASKET	62.48	-0.12	-0.19%	NATURAL GAS	3.066	-0.153	-4.75%
URALS	42.22	+0.00	+0.00%	Click Here for 150+ Global Oil Prices			

BREAKING NEWS: U.S. LNG Exports Set To Exceed Pipeline Gas Exports Next Year

Napi árfolyamok: 2022. április 6.

Pénznem	Devizanév	Egység	Forintban kifejezett érték
CHF	svájci frank	1	371,53
EUR	euro	1	378,43
USD	USA dollár	1	346,45



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[ALTERNATIVE ENERGY](#)
[GEOPOLITICS](#)
[VIDEO](#)
[BREAKING NEWS](#)

[All Prices](#)
[OPEC Blends](#)
[Canadian Blends](#)
[U.S. Blends](#)

WTI CRUDE •	97.85	+1.62	+1.68%	LOUISIANA LIGHT •	103.5	-1.81	-1.72%
BRENT CRUDE •	103.0	+1.88	+1.86%	BONNY LIGHT •	104.8	-2.92	-2.71%
NATURAL GAS •	6.152	+0.123	+2.04%	OPEC BASKET •	108.1	+1.82	+1.71%
HEATING OIL •	3.400	+0.054	+1.62%	MARS US •	93.68	-5.43	-5.48%
Click Here for 150+ Global Oil Prices				GASOLINE •	3.094	+0.048	+1.56%

BREAKING NEWS: WTI Crude Falls 5% As IEA Agrees To 120 Million Barrel SPR Release

Crucial economic goods

- Historically, the power was in the hand of the **ruling class**, but this was determined not by the intellectual excellence, but typically some sort of physical force or economic basis
- **Prehistoric times**, natural peoples – in the lack of personal belongings, the power was allocated to somebody as the result of physical strength or skill
- **Antiquity, early Middle Ages** – the land, the huge estate systems were the basis to the sovereigns primacy (due to the incomes, monopolies)
- **Middle Ages, modern times** – gold (money) as measure of the economic power begins to separate from the physical belongings
- **XX. century** – due to the energy consumption (as prerequisite of economic production) the energy sources come to focus (see Rockefeller)

Driving forces of crude oil industry

- XIX. century – lighting, lamp oil
- 1910'-ies – Ford T model, dawn of **automotive industry** (15.000.000 pcs manufactured from 1908-1927)



Ford

AC RY14H

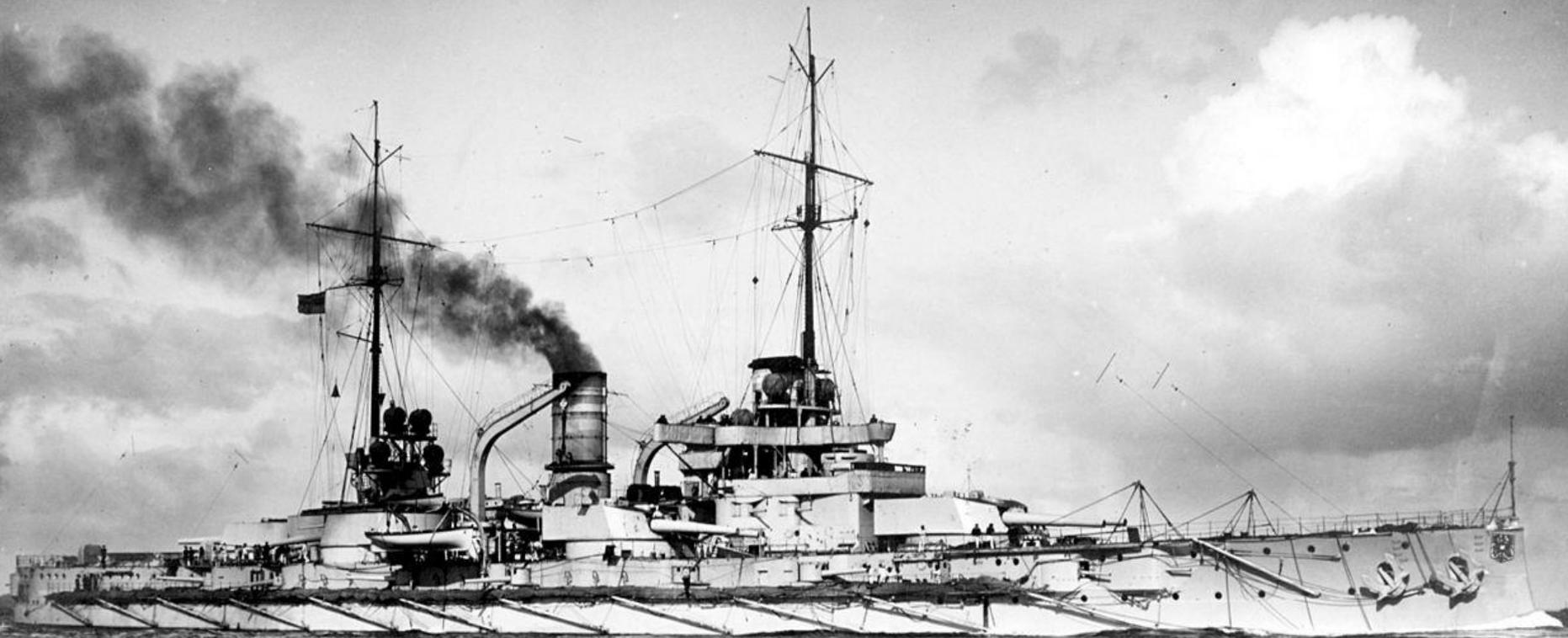
1919 1919 2007
MOC Stuurder Boda Herengerechtigd
KUS



Driving forces of crude oil industry

- XIX. century – lighting, lamp oil
- 1910'-ies – Ford T model, dawn of **automotive industry**
- I. world war – coal/steam replacement by fuel oil in the **British Royal Navy**

SMS Posen, powered by mixed
coal and oil



POSEN

Driving forces of crude oil industry

- XIX. century – lighting, lamp oil
- 1910'-ies – Ford T model, dawn of **automotive industry**
- I. world war – coal/steam replacement by fuel oil in the **British Royal Navy**
- 1920-30'-ies – improvement of automotive industry
- Around II. world war – exclusion of aviation gasolines, jet engines spreading
- 1950'-ies – **plastic industry** appearance, improvement
- 1960-70'-ies – motor fuels volume improvement
- 1980-90'-ies – motor fuels quality improvement
- Nowadays – petrochemistry, environmental regulations tightening

Political vs. economic power

- **XXI. century** – the basic principle is the political power supremacy in the modern democracies, which is delegated to political parties by free elections
- **Lobbying** is the act of attempting to influence decisions made by officials in a government, most often legislators or members of regulatory agencies, or shaping the law to serve the interests of some private parties
 - Private interests may prevail
 - Partial optimum may be reached instead of general optimum
- Lobby may be: economic, environmental, civil, etc.
- **That situation never exists, which is equally beneficial for everybody**

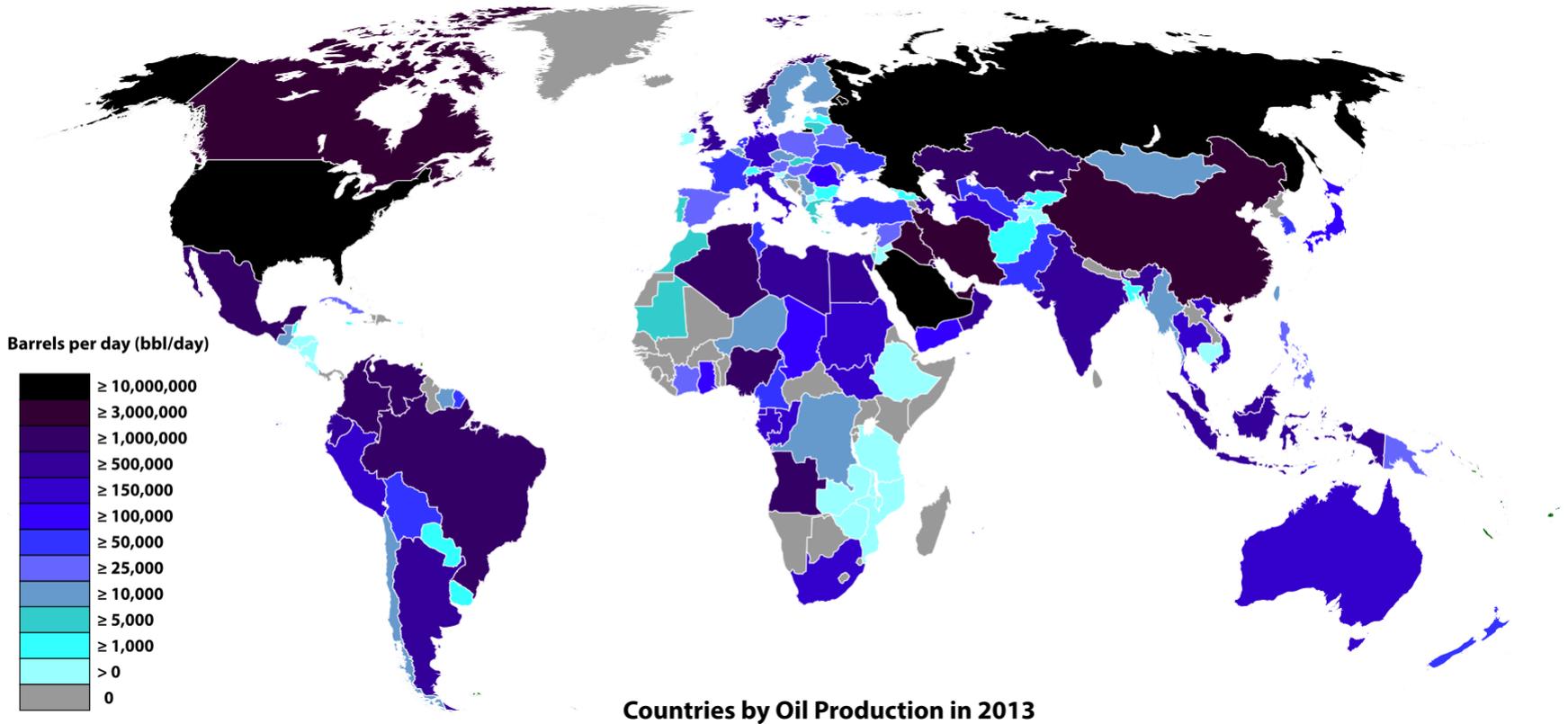
Aim of business organisations: Profit

- Organisations established on economic basis (companies, enterprises, individuals) are **making effort to maximize their profit** independently of what is the physical appearance of their production/service activity
- 1. solution: **increase incomes**
 - Free market competition will limit prices (commodities)
 - Monopole situation will remove limits
- 2. solution: **decrease spending**
 - Technology investments
 - Producing firms relocation in order to receive different advantages
 - Local business tax reduction
 - Investment subsidisation
 - Environmental alleviation

Important institutions

- **OPEC:** Organisation of the Petroleum Exporting Countries (**Saudi-Arabia, Iraq, Iran, UAE, Kuwait, Venezuela, Angola, Nigeria, Algeria, Ecuador, Libya, Gabon, Equatorial Guinea, Congo**) - 1960
- **OECD:** Organisation for Economic Co-operation and Development (34 developed countries; N-Am, Europe /excl. the Balkans, FSU/, Japan, Israel, Turkey, Australia, New-Zealand, Chile)
- **IEA:** International Energy Agency
- **EIA:** U.S. Energy Information Administration

Crude oil producing countries [bbl/d]



1 barrel = 159 l

Biggest crude oil producing countries

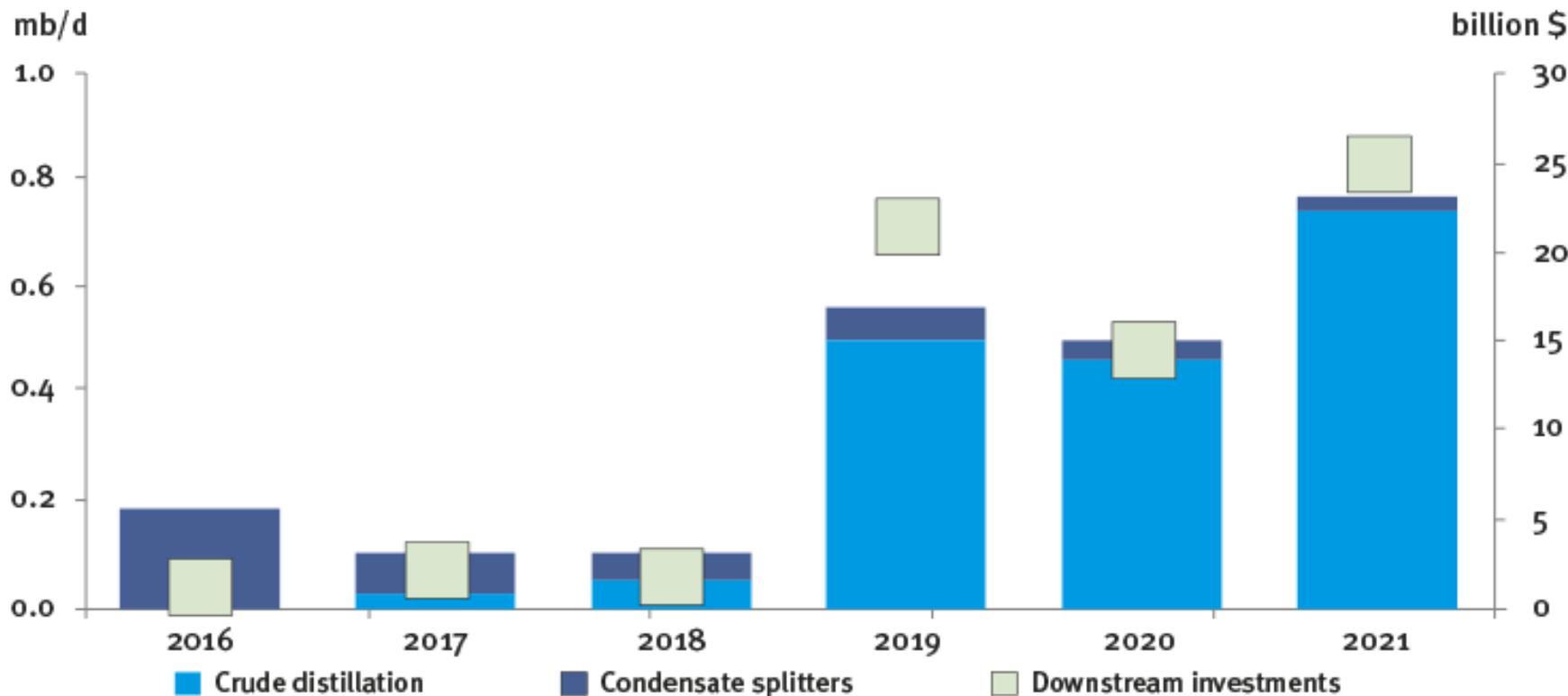
Country		2020 production* [mb/d]
USA		11,31
Russia		9,86
Saudi Arabia	OPEC	9,41
Canada		4,18
Iraq	OPEC	4,09
China		3,89
UAE	OPEC	3,14
Brazil		2,94
Iran	OPEC	2,64
Kuwait	OPEC	2,55
Nigeria	OPEC	1,77
Kazakhstan		1,76
Norway		1,71
Mexico		1,71
Qatar	OPEC	1,27

* Including condensates, NGLs, oil from non-conventional sources

** Reference: MOL Százhalombatta Refinery capacity: ~0,15 mb/d

Investments of OPEC member countries

Downstream capacity additions and investments in OPEC Member Countries

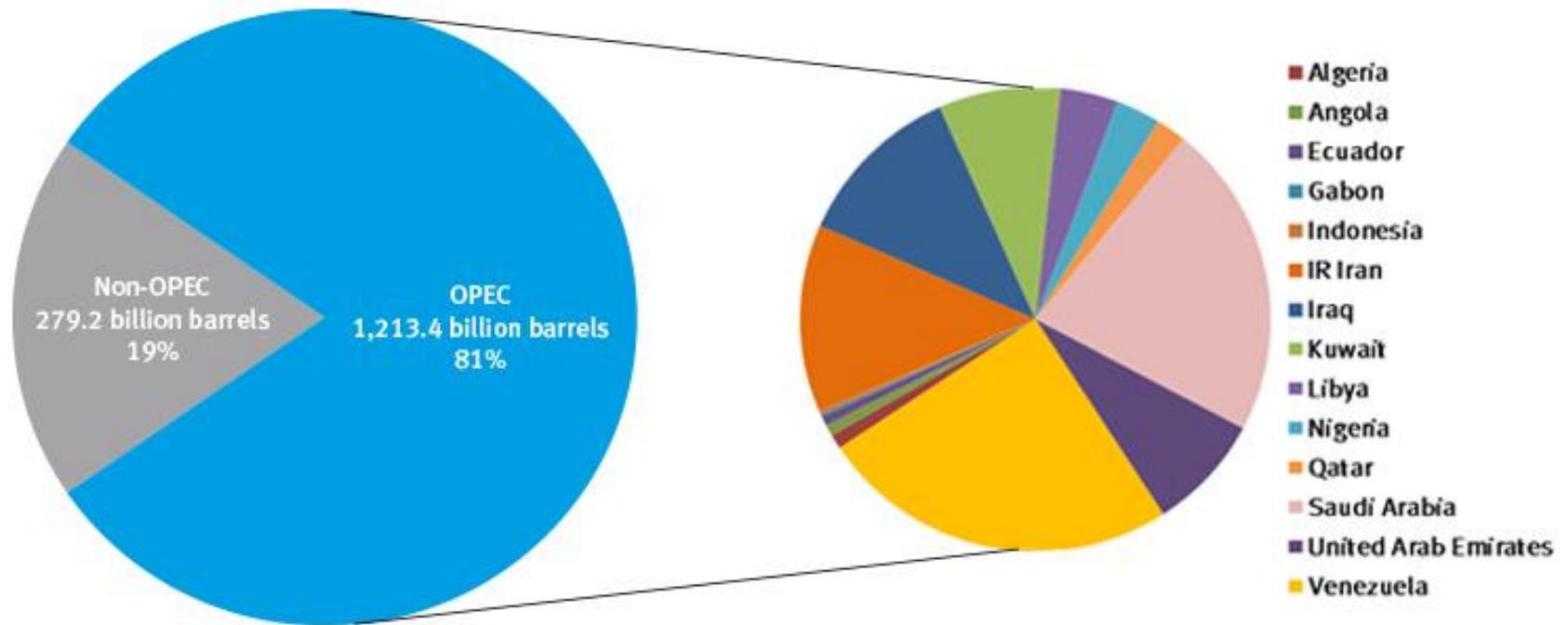


Projected capacity additions within national borders of Member Countries.

Downstream investment includes investment in secondary processes but excludes infrastructure costs beyond refinery gate.

Oil reserves of OPEC member countries

OPEC share of world crude oil reserves, 2015



OPEC proven crude oil reserves , at end 2015 (billion barrels, OPEC share)

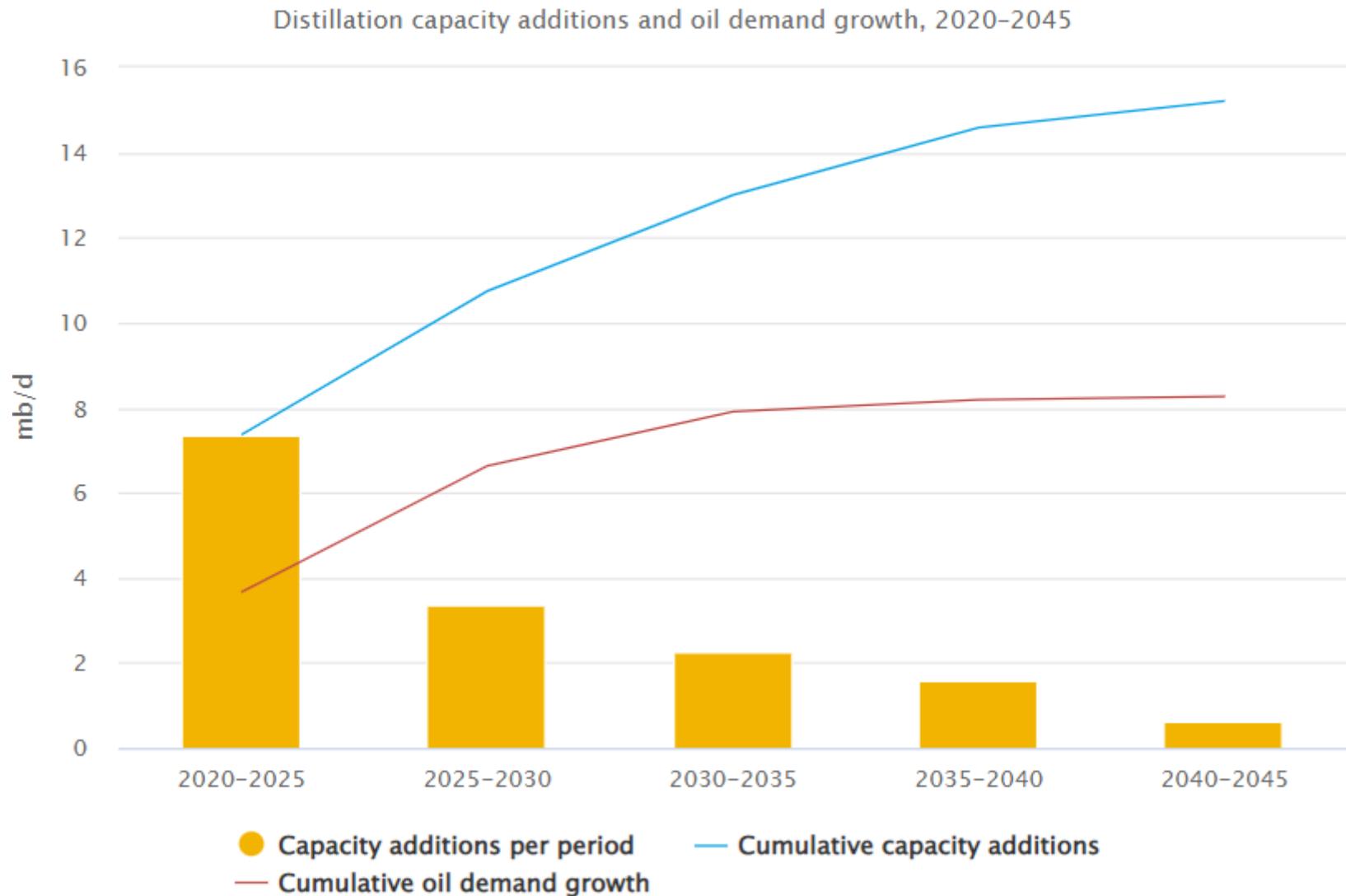
Venezuela	300.88	24.8%	Kuwait	101.50	8.4%	Qatar	25.24	2.1%	Indonesia	3.23	0.3%
Saudi Arabia	266.46	22.0%	United Arab Emirates	97.80	8.1%	Algeria	12.20	1.0%	Gabon	2.00	0.2%
IR Iran	158.40	13.1%	Libya	48.36	4.0%	Angola	9.52	0.8%			
Iraq	142.50	11.7%	Nigeria	37.06	3.1%	Ecuador	8.27	0.7%			

Source: OPEC Annual Statistical Bulletin 2016.

Definitions

- **Spot price:** is the current price in the marketplace at which a given asset—such as a security, commodity, or currency—can be bought or sold for immediate delivery.
- **Futures price:** in contrast to the spot price, a futures price is an agreed upon price for future delivery of the asset.
- **Commodity:** is a basic good used in commerce that is interchangeable with other commodities of the same type. Commodities are most often used as inputs in the production of other goods or services (eg. crude oil, coal, grain, etc.).
- **Benchmark crude oil:** A benchmark crude or marker crude is a crude oil that serves as a reference price for buyers and sellers of crude oil.
- **Marginal production cost:** is the change in total cost that comes from making or producing one additional item.
- **Breakeven oil price:** An oil-exporting country's “fiscal breakeven” oil price is the minimum price per barrel that the country needs in order to meet its expected spending needs while balancing its budget.

New distillation capacities

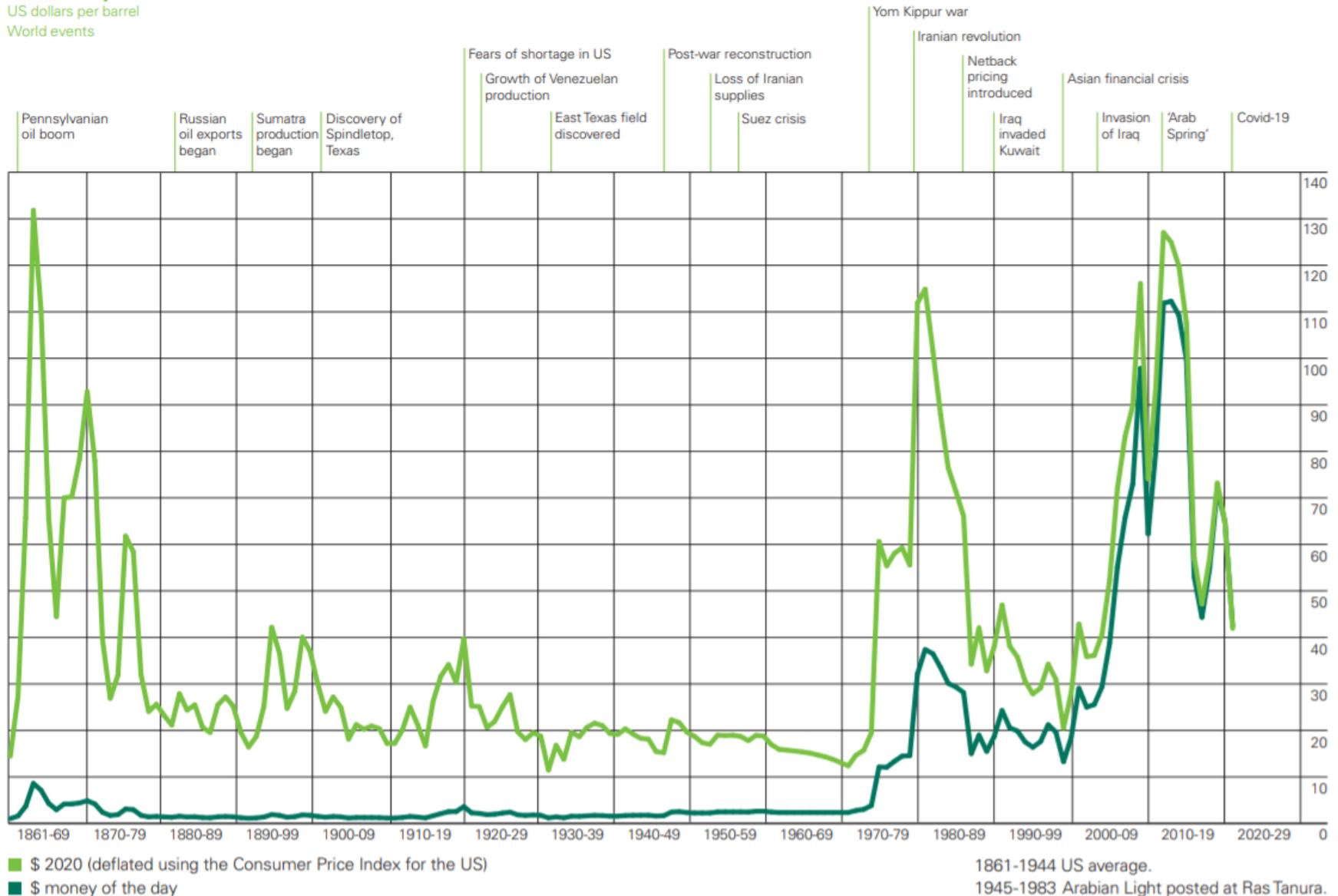


Crude oil prices

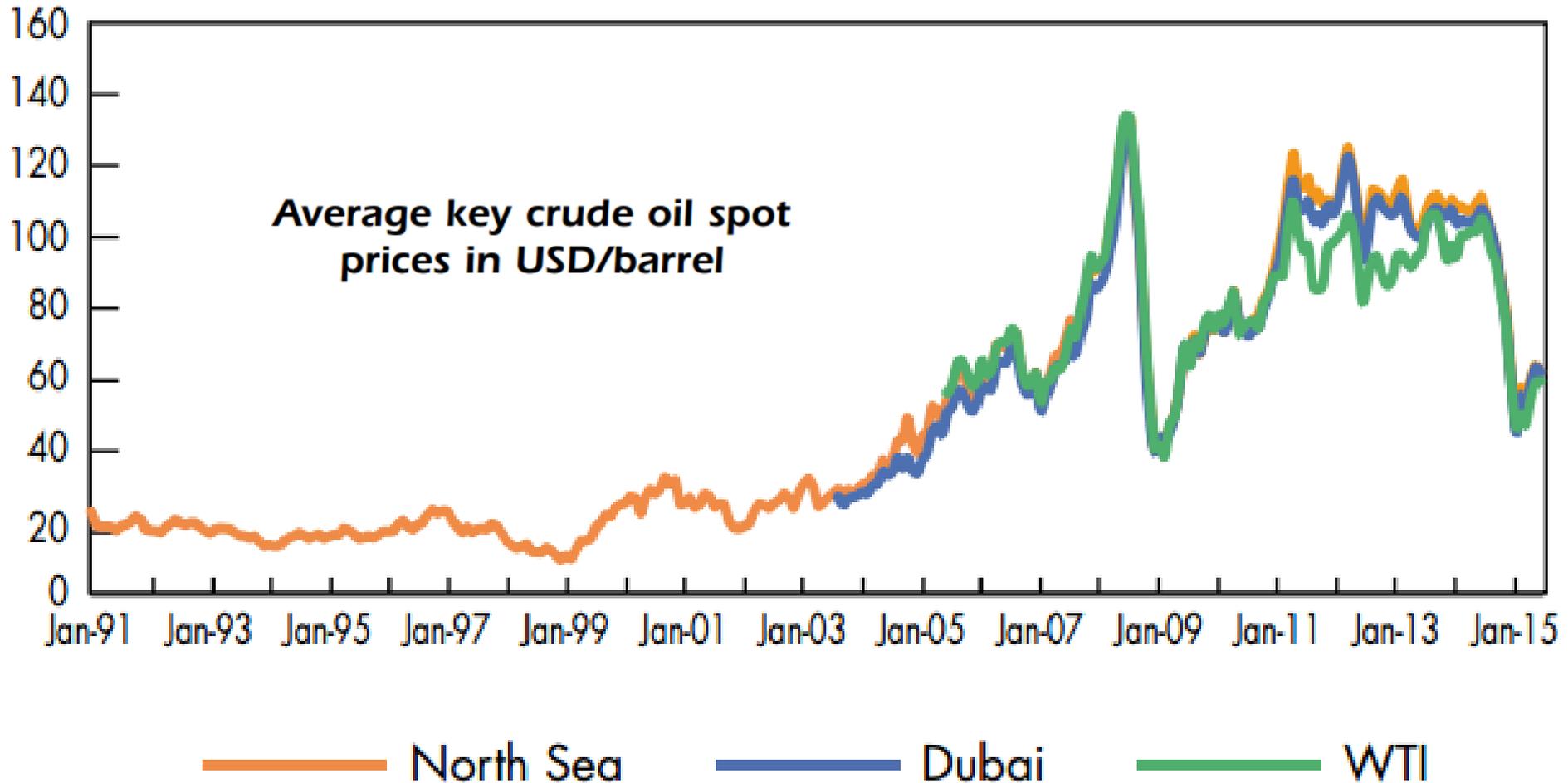
Crude oil prices 1861-2020

US dollars per barrel

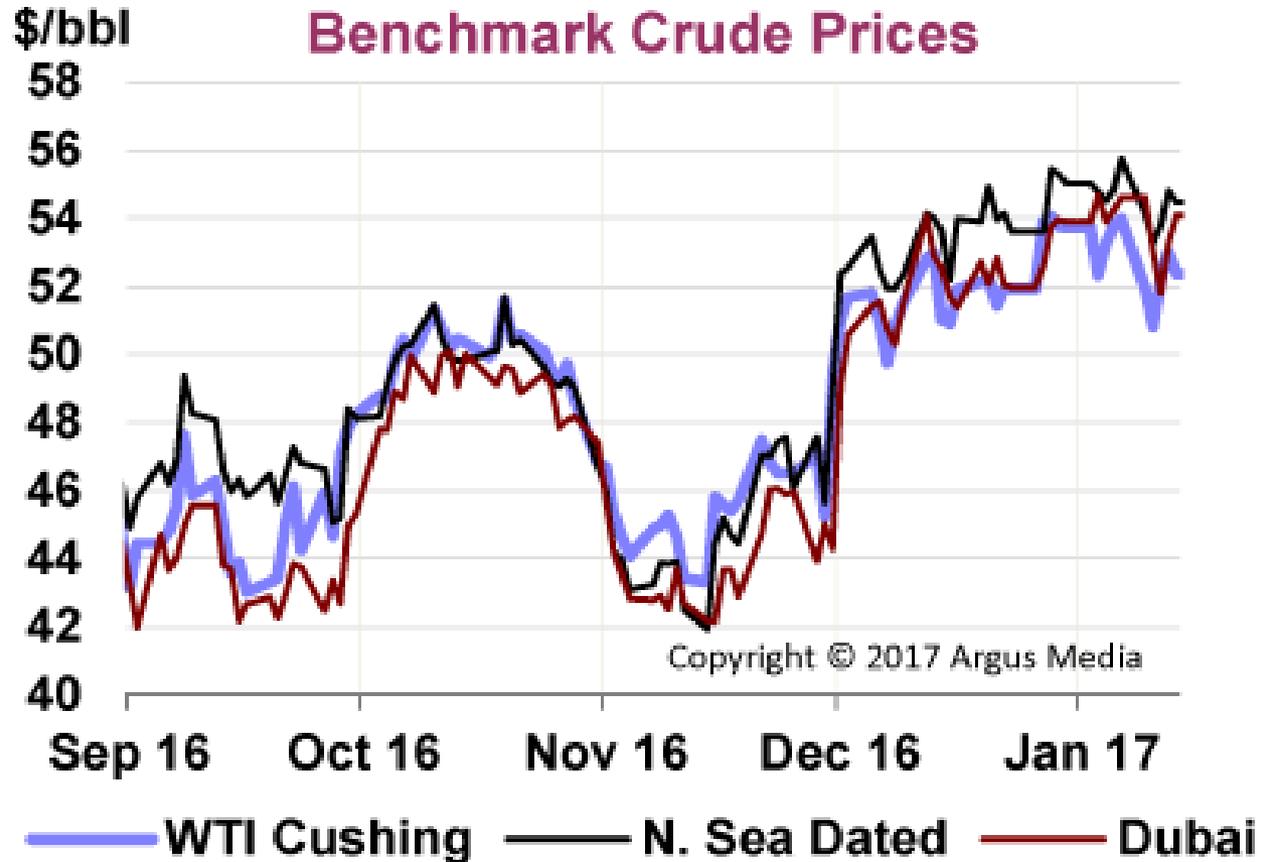
World events



Crude oil spot prices from 1991



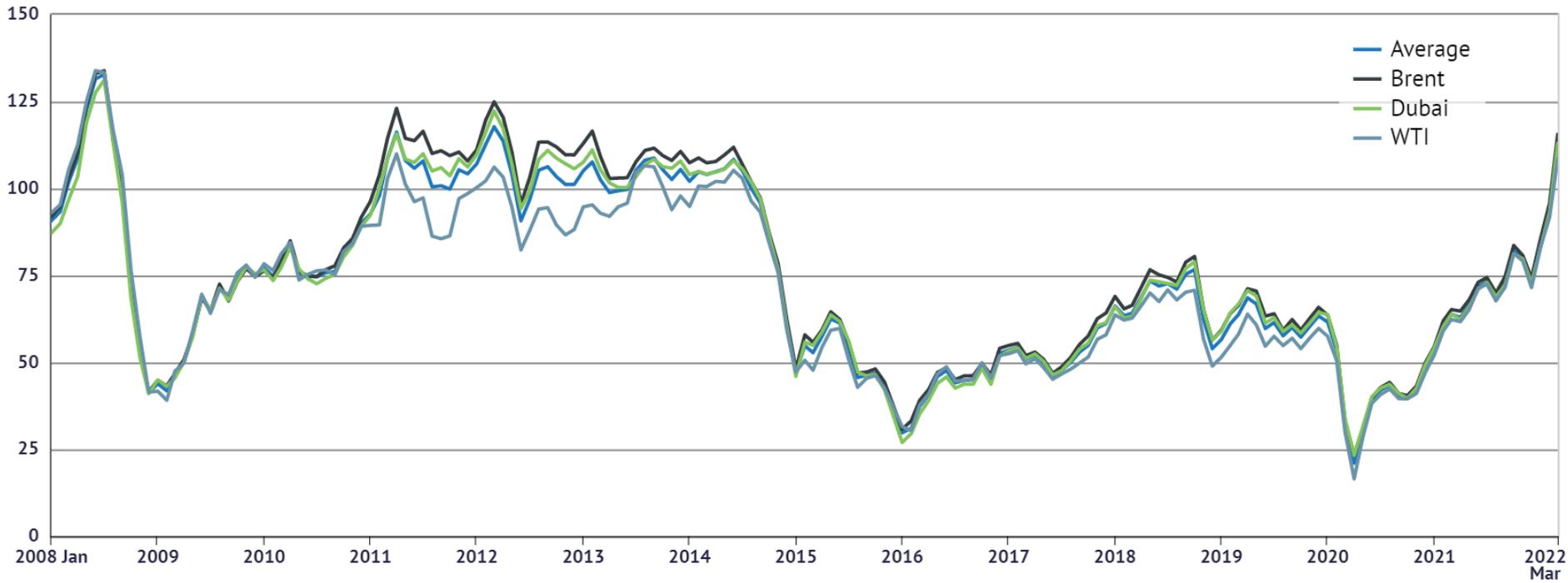
Crude oil price 2014-



Crude oil prices

Benchmark Crude Oil Prices

USD/bbl



Crude oil price influencing factors

- **Forecasted economical growth** of significant economies/countries (e.g. BRIC countries)

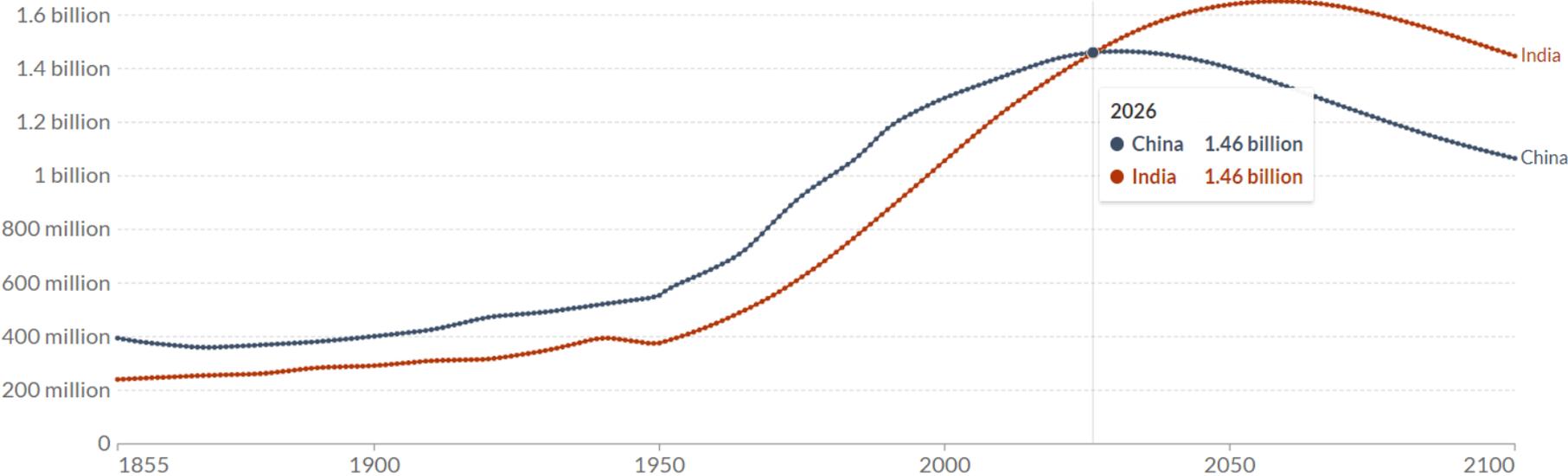
Population: China vs. India

Population, 1855 to 2100

Historical estimates of population, combined with the projected population to 2100 based on the UN's medium variant scenario.

Our World in Data

+ Add country



Source: Gapminder (v6), HYDE (v3.2), UN (2019)
Note: Historical country data is shown based on today's geographical borders.

CCBY

Crude oil price influencing factors

- **Forecasted economical growth** of significant economies/countries (e.g. BRIC countries)
- **Currency exchange rates**: US dollar based clearing
- Important **political events** (e.g. OPEC general assembly, management consultations, etc.)

Political events worldwide

- January 2016: removal of embargo against Iran
- 27.09.2016 Algír, OPEC secretary general: Iranian and Saudi standpoints are far from each other → 2,5% decrease
- 10.10.2016 Putin talked about the possible necessity of limitation of oil production → ~3% increase
- 30.11.2016 Iranian oil minister: „we are talking about decrease instead of freezing” → 5,7% increase
- 01.12.2016 OPEC agreement on reduction from 01.01.2017

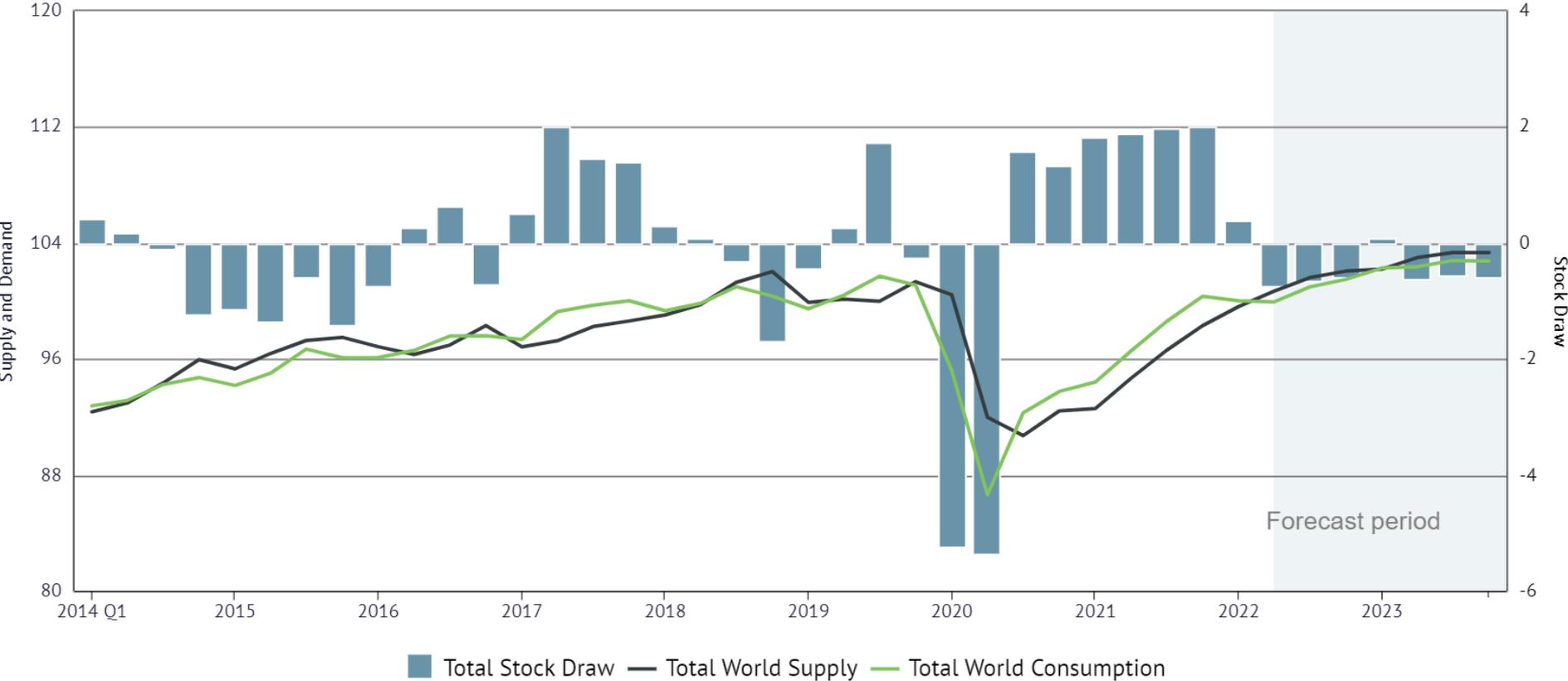
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- **Supply/demand balance:** General economic axiom on the free market

Supply/demand

Global Oil Supply, Demand, and Inventories | Forecast from the EIA

Million Barrels per Day

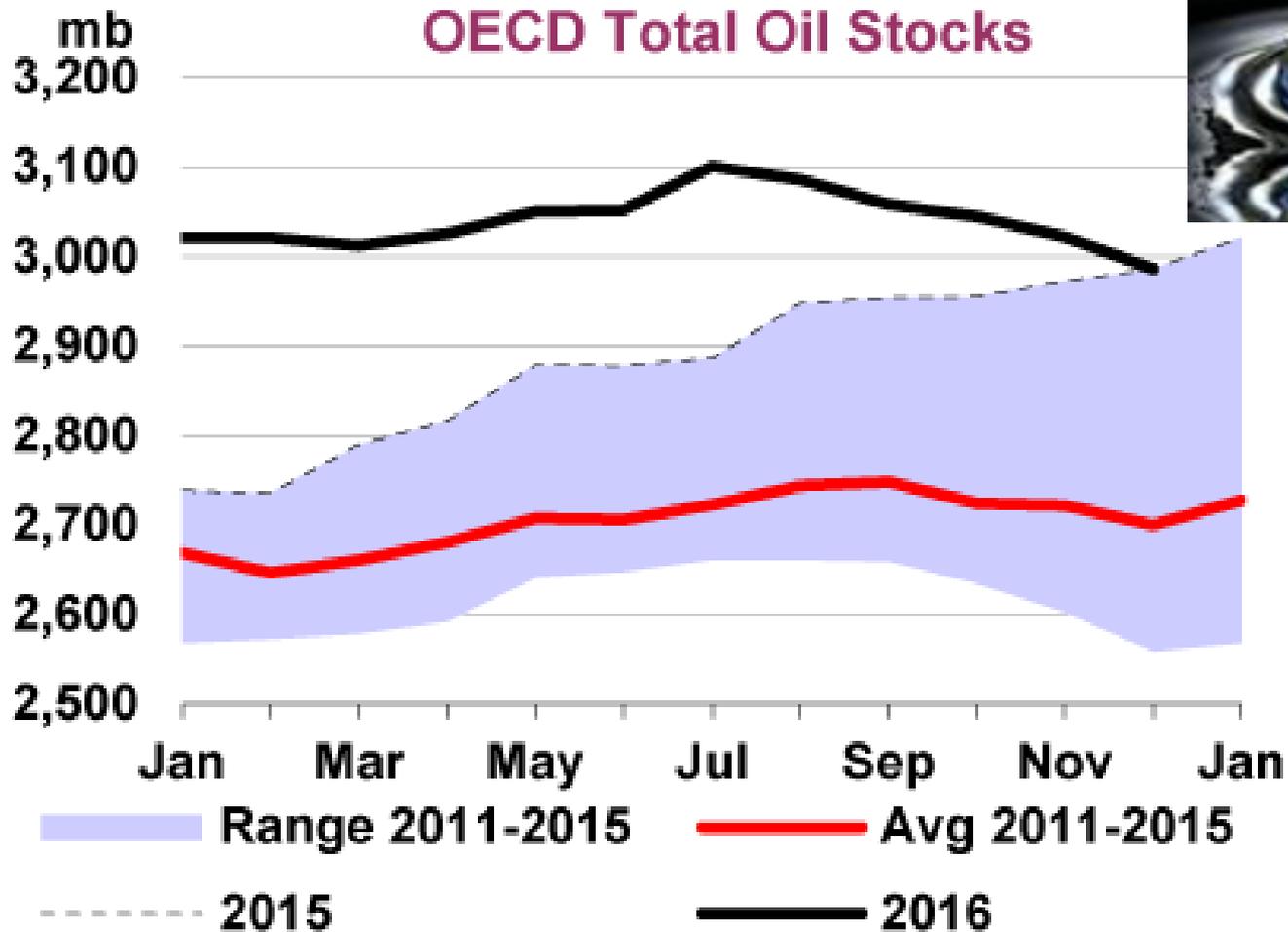


Source: KNOEMA (<https://knoema.com/infographics/cbhnele/world-crude-oil-supply-and-demand-forecast-2020-2021>)

Crude oil price influencing factors

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- **Accumulated stocks:** at high stocks demand decrease, there is no pressure on the costumer

OECD stocks



OECD stocks

OECD Petroleum Stocks

4.112B bbl for Dec 2021

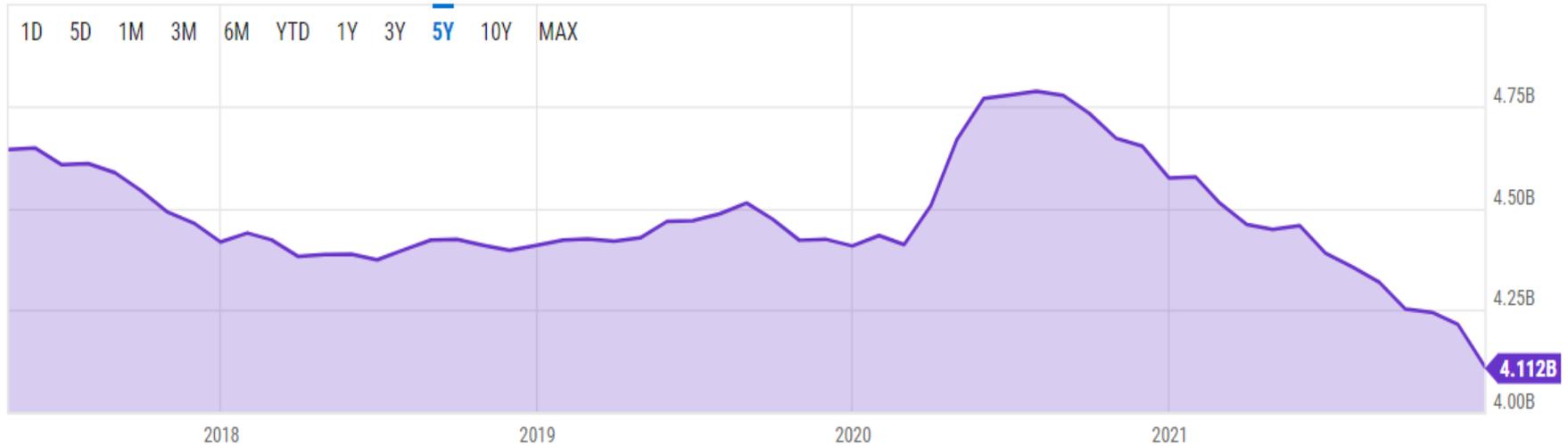
Overview

Interactive Chart

Level Chart

[VIEW FULL CHART](#)

1D 5D 1M 3M 6M YTD 1Y 3Y **5Y** 10Y MAX



Crude oil price influencing factors

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- **Supply/demand balance:** General economic axiom on the free market
- **Accumulated stocks:** at high stocks demand decrease, there is no pressure on the costumer
- **Exploitation/logistics costs:** production (when oil price is) below the marginal cost is lossmaking for longer period

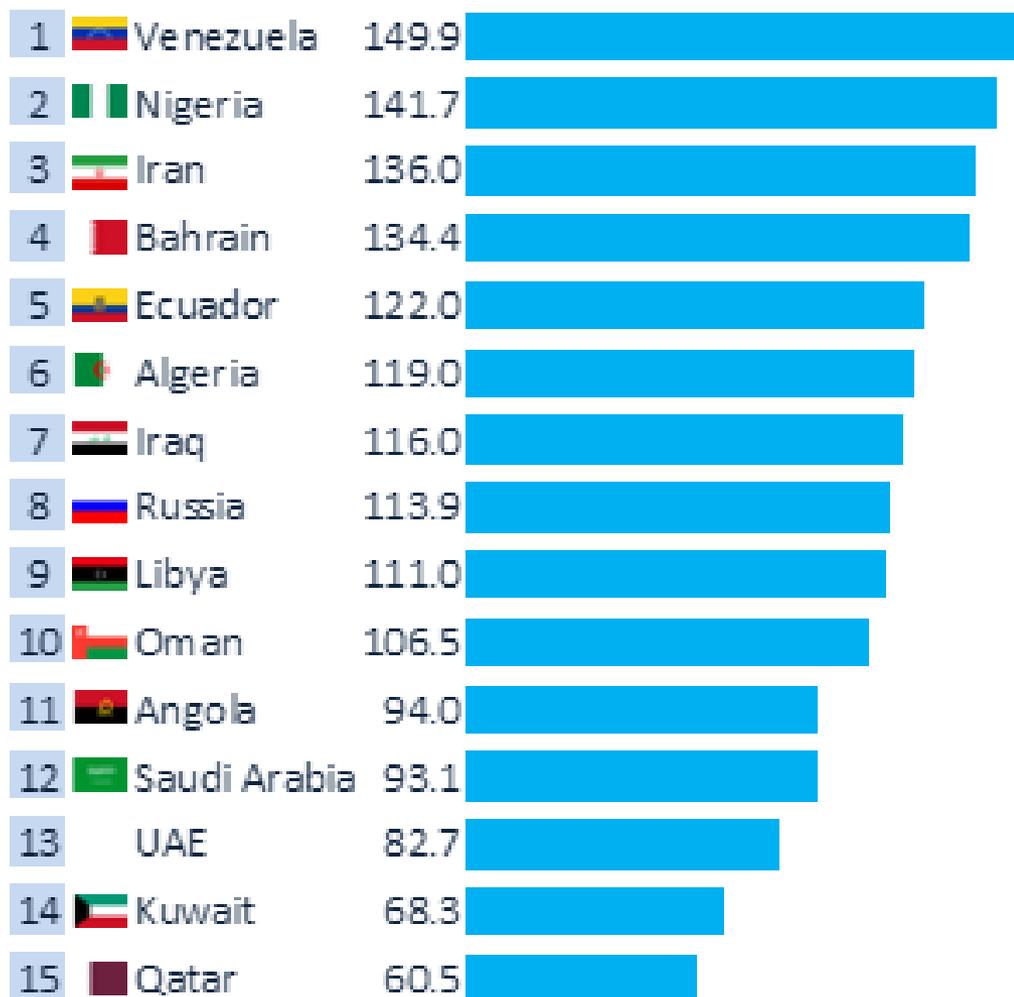
Marginal production costs [USD/bbl]

		Marginal Production Cost
		2014
Russia	Arctic	120.00
	Onshore	18.00
Europe	Biodiesel	110.00
	Ethanol	103.00
Canada	Sand	90.00
Brazil	Ethanol	66.00
	Offshore	80.00
United States	Deep-water	57.00
	Shale	73.00
Angola	Offshore	40.00
Ecuador	Total	20.00
Venezuela	Total	20.00
Kazakhstan	Total	16.00
Nigeria	Deep-water	30.00
	Onshore	15.00
Oman	Total	15.00
Qatar	Total	15.00
Iran	Total	15.00
Algeria	Total	15.00
United Arab Emirates	Total	7.00
Iraq	Total	6.00
Saudi Arabia	Onshore	3.00

Breakeven oil price [USD/bbl]

- An oil-exporting country's "fiscal breakeven" oil price is the **minimum price per barrel that the country needs in order to meet its expected spending** needs while balancing its budget. Oil prices below this level should result in budget deficits unless government policies change.
- The **breakeven** oil price includes all long term costs:
 - Production costs
 - Development costs
 - Selling, general and administrative expenses
 - Logistics/transportation costs
 - Gross taxes

Breakeven oil price [USD/bbl]

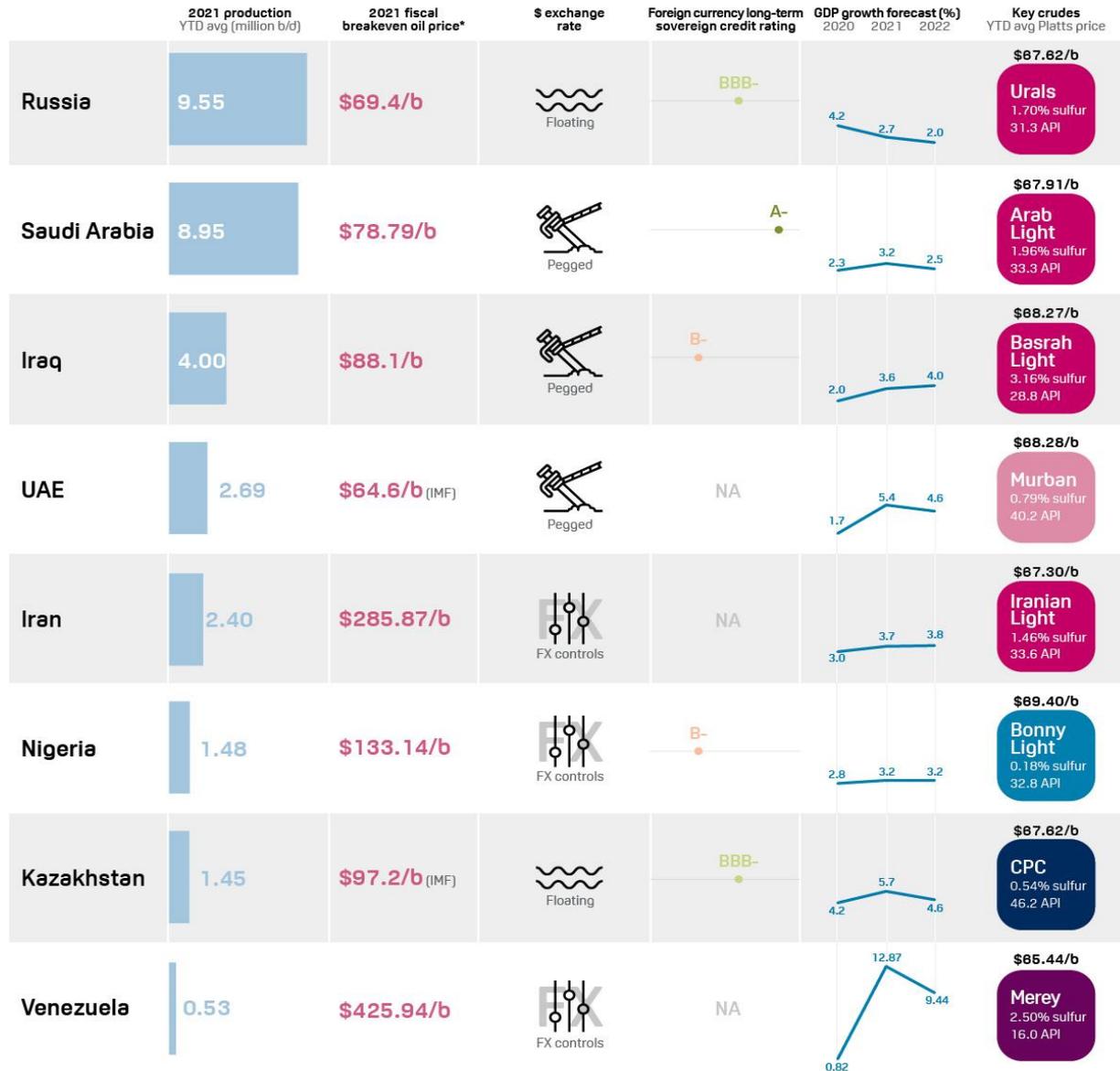


Country	2021
Iran	320
Algeria	109
Bahrein	84
Oman	80
Lybia	70
Azerbaijan	68
Saudi-Arabia	66
Kazakhstan	66
UAE	61
Kuwait	60
Iraq	54
Turkmenistan	41
Qatar	37

Breakeven oil price by country
(USD/bbl)

RUSSIA RETAINS STRONG ECONOMIC RESILIENCE AMONG OPEC+ MEMBERS

Domestic economic concerns are playing a role in OPEC+ members' positions on production volumes, with some countries suffering more from oil price volatility than others. Compared to late 2020, Russia has retained its strong economic position within the group. However, the narrowing gap between fiscal breakeven oil prices with Saudi Arabia could bring the two key OPEC+ members closer together on production strategy.

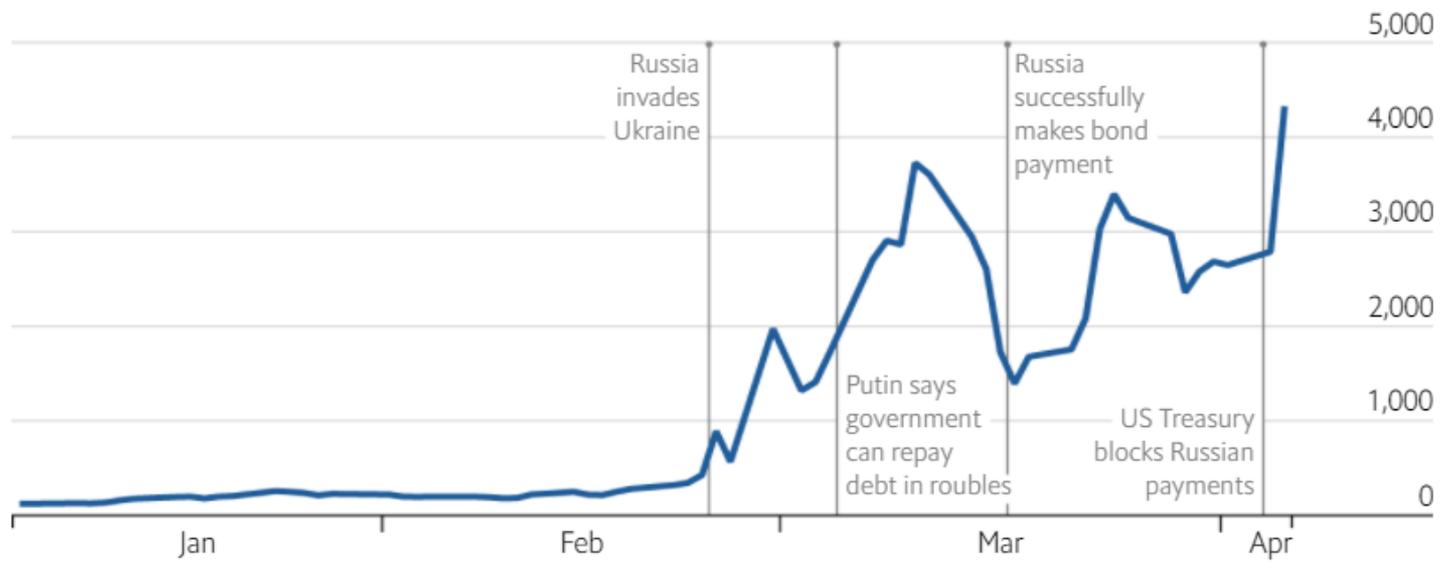


*According to S&P Global Platts Analytics fiscal breakeven oil prices are not what OPEC+ aspires to, but they demonstrate fiscal strain and the need to find alternative ways to balance the budget

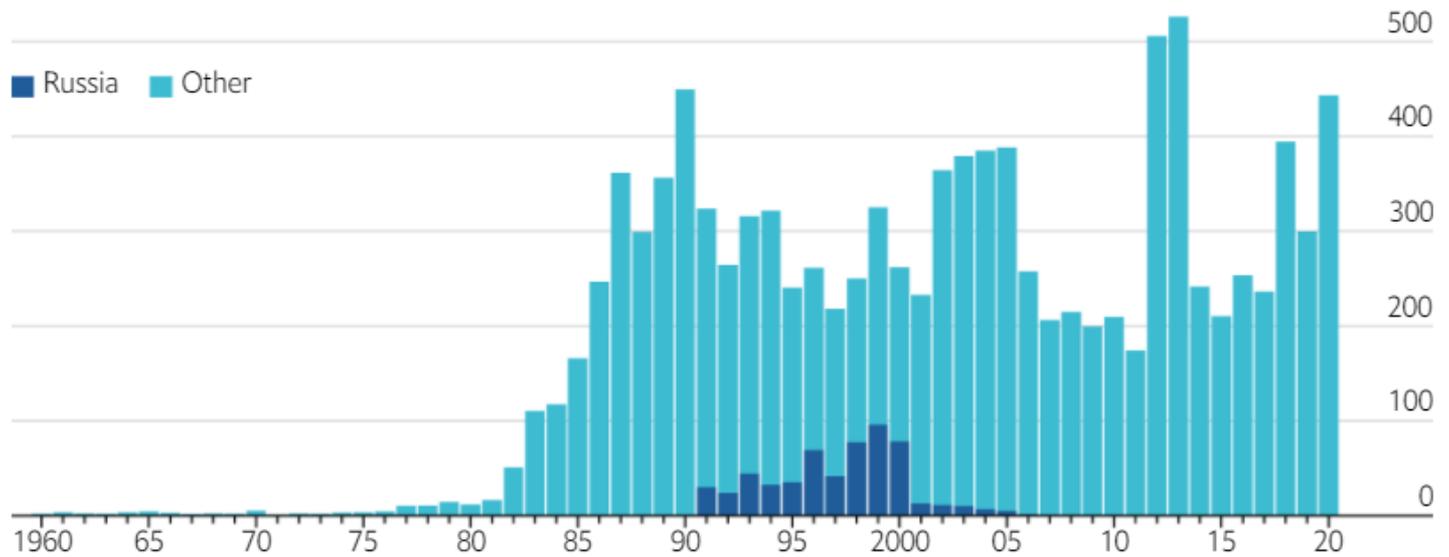
Source: S&P Global Platts, S&P Global Platts Analytics, S&P Global Ratings, IMF

Source: <https://www.spglobal.com/commodity-insights/en/market-insights/latest-news/oil/120221-russia-opec-seen-moving-closer-on-fiscal-breakeven-oil-prices>

Russia, five-year credit-default-swap spreads, 2022, basis points



Sovereign debt in default, \$bn



Sources: IHS Markit; Bank of Canada-Bank of England sovereign default database

Source: The Economist ([A Russian debt default looks almost inevitable | The Economist](#))

Crude oil price influence

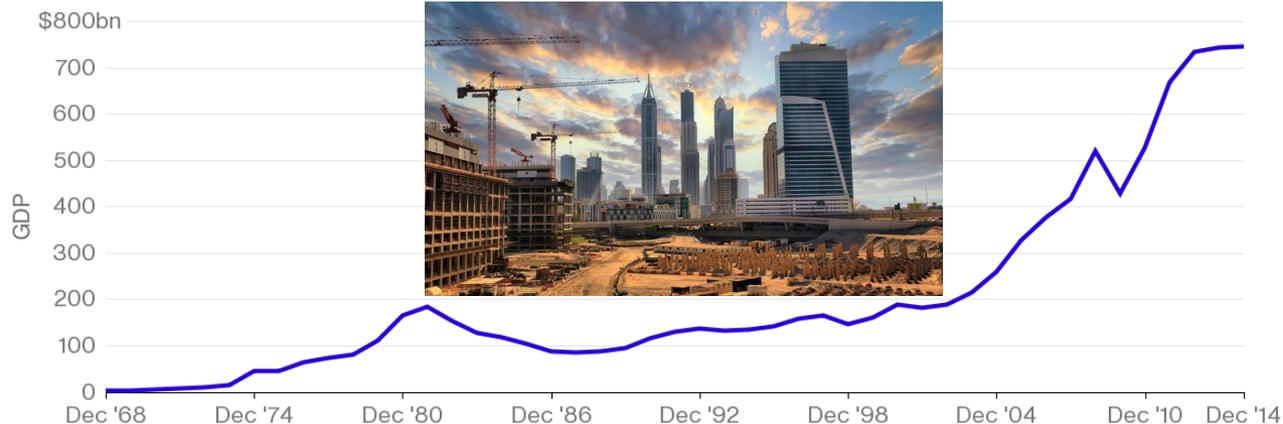
- Many things are influenced directly/indirectly by the crude oil price
 - Retail station fuel prices
 - Product prices (generally) through logistic costs
 - Natural gas prices
 - Families budgets
- Oil producing countries national budget
 - „Oil economies” are in trouble at low crude oil prices
 - Deficiency may arise
- Investments, developments of oil companies
 - At low prices many project will not pay off
 - Spudded but not finished shale oil wells (fast reduction of spending, ~50-60%)

Saudi Arabia

- No individual income tax
- Subsidised gasoline retail prices: 0.16\$ before
 - Yearly subsidisation volume is 8% of GDP (52 bn\$)
 - Actual price is 0.62\$ (04/04/2022)*
- National incomes: 75-90% from oil export
- Budget deficit (IMF estimation): ~15.8% of GDP (2015), 12.9% of GDP (2016). IMF expectation: in this rate the country will go bankrupt in 2020 (2019: 4,5%)

Saudi Arabia's Upward Curve

The kingdom has seen sharp growth since the turn of the century

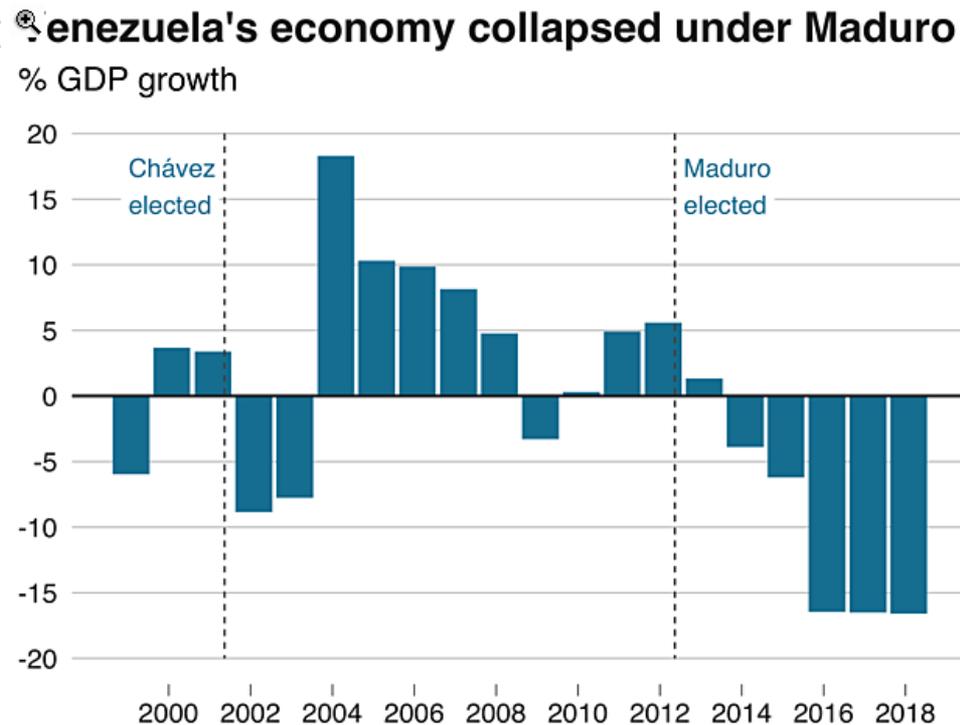


Source: World Bank

* Source: https://www.globalpetrolprices.com/Saudi-Arabia/gasoline_prices/

Venezuela

- National incomes: 95% from oil export
- Subsidised gasoline retail prices: 0.025\$ (04.04.2022)
- Shortage of goods: food, medicine, etc.
 - Import in 01/2014: 2.8 bn\$
 - Import in 01/2015: 1.5 bn\$
- Inflation (IMF calculation): **Venezuela's economy collapsed under Maduro**
 - 181% (2015),
 - 302% (2016),
 - 2818% (2017),
 - 1.370.000% (2018)
- State of emergency
- ~4 million emigrants

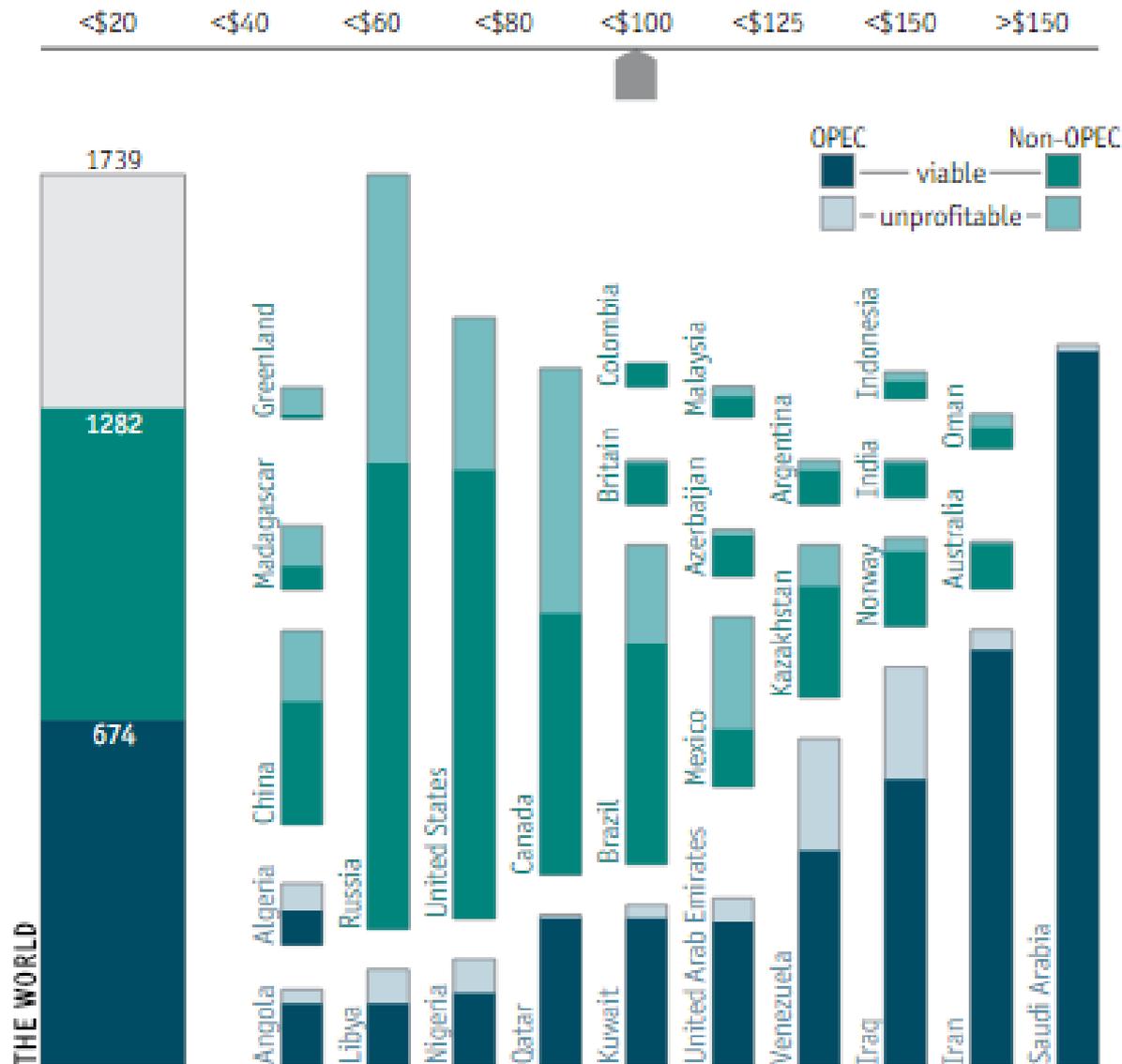


Source:

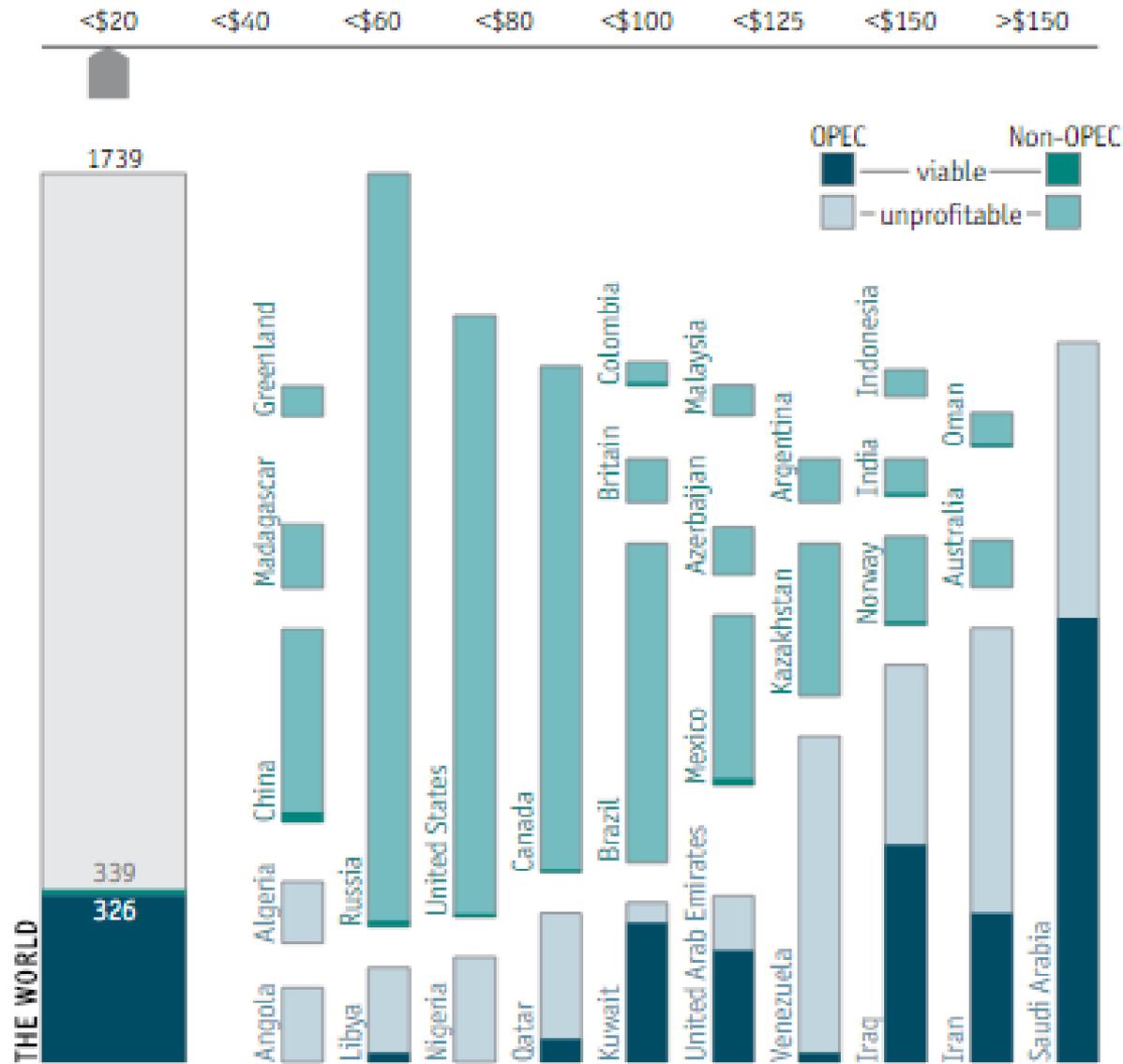
https://www.globalpetrolprices.com/Venezuela/gasoline_prices/

Source: Banco Central de Venezuela

Who stands better the price competition?



Who stands better the price competition?



Threats

Military interventions in order to obtain crude oil



- Running out of wealth in the Middle East, consumption of accumulated reserves (cash, gold, investments, etc.)
- Breakdown of Russian economy
- Alternative vehicle fueling

Sources

- http://www.iea.org/publications/freepublications/publication/KeyWorld_Statistics_2015.pdf
- <https://www.iea.org/media/omrreports/fullissues/2016-01-19.pdf>
- <https://www.eia.gov/petroleum/drilling/pdf/dpr-full.pdf>
- <https://cdn2.hubspot.net/hub/312313/file-2262672865-pdf/breakevencosts-evaluateenergy2.pdf?submissionGuid=01cbbc2c-43c2-4fab-9c8a-51bca79ff383>
- <http://knoema.com/vyronoe/cost-of-oil-production-by-country>
- <http://www.economist.com/blogs/graphicdetail/2016/01/daily-chart-6>
- <http://asb.opec.org/index.php/>

