Graphiques sur l’Arabie Saoudite, NGL & Delphi
Saudi Arabia oil data from Sama.gov

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Saudi Arabia remaining oil reserves

- **2P 2011 backdated**
- **2P 2004 backdated**
- **OPEC/ABS 1P SA**
- **1P WO Saudi Arabia**
- **1P OGI Saudi Arabia**
- **1P OGI Neutral Zone**
- **KSA crude+condensate ultimate HL**
- **DGMN Crude+NGL**
- **Rystad 2016 2PC**
- **RNS 1P crude**
- **DGMN 1P Crude**
- **Rystad 2016 1P**

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- **OPEC quota fight +90 Gb SA**
- **IHS increase in 2P from 2004 to 2011 +90 Gb SA**
- **OPEC quota fight +90 Gb SA**
- **OPEC quota fight +90 Gb NZ**
Saudi Arabia HL of crude oil production 1937-2018

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Rystad 2PCX=212 Gb
CP 2015 = 142 Gb
ultimate = 354 Gb
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1P OGI includes half of Neutral Zone reported separately until 2013

OPEC fight on quotas 1985-1989: +300 Gb of speculative resources Al-Huseini 2007: +90 Gb for SA

CP+1P OPEC
cum disc 2P 2011
cum disc 2P 2004
HL
U = 350 Gb
U = 300 Gb
U = 250 Gb
CP5%
cum prod crude OPEC
CP +1P crude DGMN
Manifa

Manifa discovered in 1957 is huge (45 km x 18 km) with six reservoirs, but poor reservoirs, heavy oil and expensive development.

Production (capacity 125,000 b/d) occurs from 1964 to 1984:
Production resumes in 2013 with 350 wells from 27 man-made drilling islands & 13 offshore platforms, interconnected by a causeway of 41 km, for a cost over 10 G$. 
AR 2015 reports a production capacity of 0.9 Mb/d, but AR 2016 and 2017 does not mention Manifa anymore.
Manifa is stated as a triumph of engineering!

It seems that corrosion problems occur in 2017 in the water injection.
There is no data on present Manifa oil production
Saudi Arabia NG marketed production

-annual prod G.m³ = km³
-cumulative production G.m³

U = 6500 km³
OPEC mark prod
WEO2010
WEO2018
U = 6500 km³
CP OPEC G.m³

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b/t versus density for oil products from IEA 2019

- Ethane: b/t = 13.8
- Propane: d = 0.63, b/t = 10
- Butane: NGL
- Pentanes: d = 0.63
- LPG: b/t = 13.8
- Naphtha
- Crude oil
- Bitumen

300 400 500 600 700 800 900 1000 1100

300 400 500 600 700 800 900 1000 1100

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b/t versus °API for oil products from IEA 2019

\[
b/t = 0.0445 \times (\text{°API} + 131.5)
\]

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Enquête Delphi production brut, extra-lourd, LTO & offshore profond

world crude oil -XH-LTO-deepwater production

- EIA crude+condensate
- crude-XH
- crude-XH-LTO-deep
- deepwater >500 m
- LTO
- XH

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US & world LTO production forecasts from EIA & IEA

- world WEO2018 NP
- world WEO2017 NP
- world WEO2014 NP
- world past
- US AEO2019
- US AEO2018
- US WEO2018
- US AEO2015
- US AEO2013

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