

# The long-term outlook for the global oil market & the role of heavy oil

Trevor Morgan  
*Managing Director*  
Menecon Consulting

Heavy Oil World  
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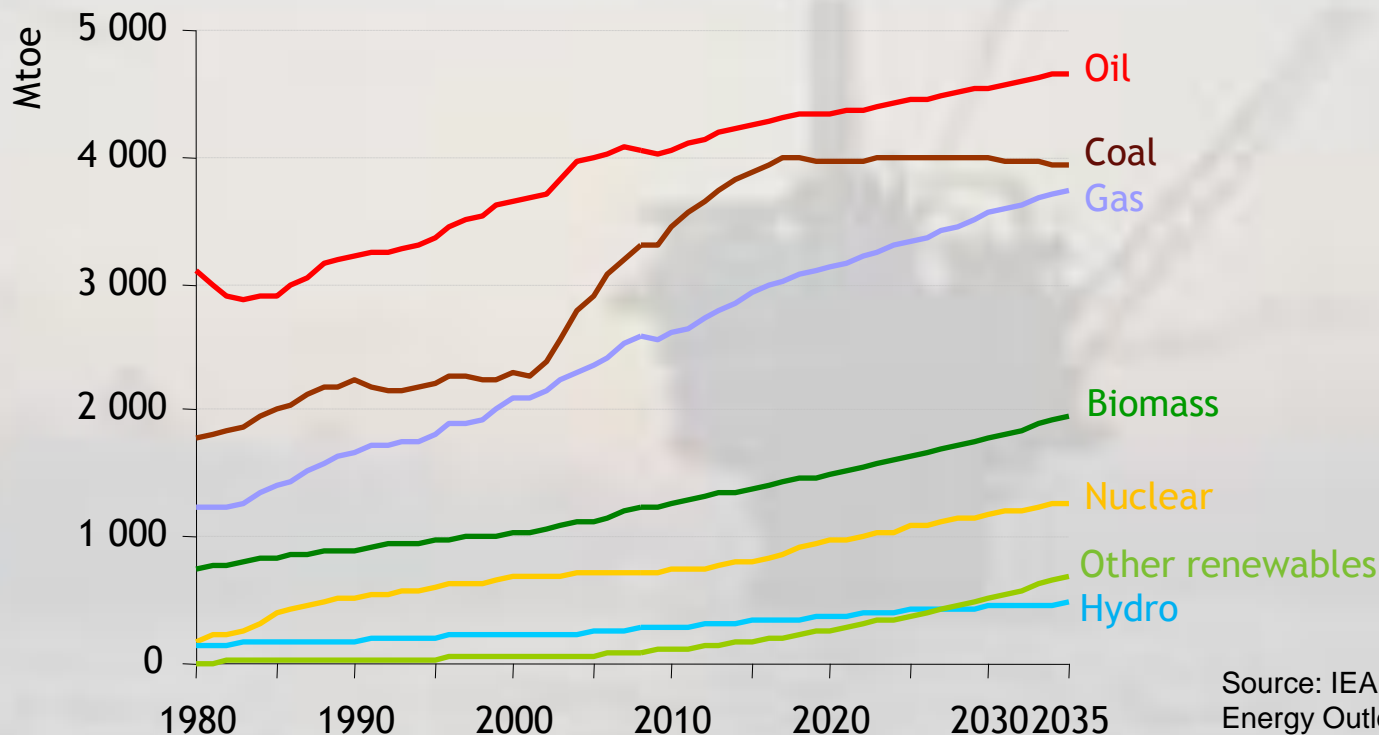


# The context

- ▶ The global economy rebounds strongly – *but is the recovery sustainable with higher oil prices?*
- ▶ Persistent geopolitical instability – *stormy time ahead after the Arab Spring?*
- ▶ Oil demand & supply are becoming less sensitive to price – *what does this mean for future price movements?*
- ▶ Climate & G-20 subsidy deals – *do they go far enough, will they be fully implemented & how will they affect oil?*
- ▶ China & other emerging economies will shape the global energy future – *where will their policy decisions lead us?*

# Oil remains the world's leading energy source

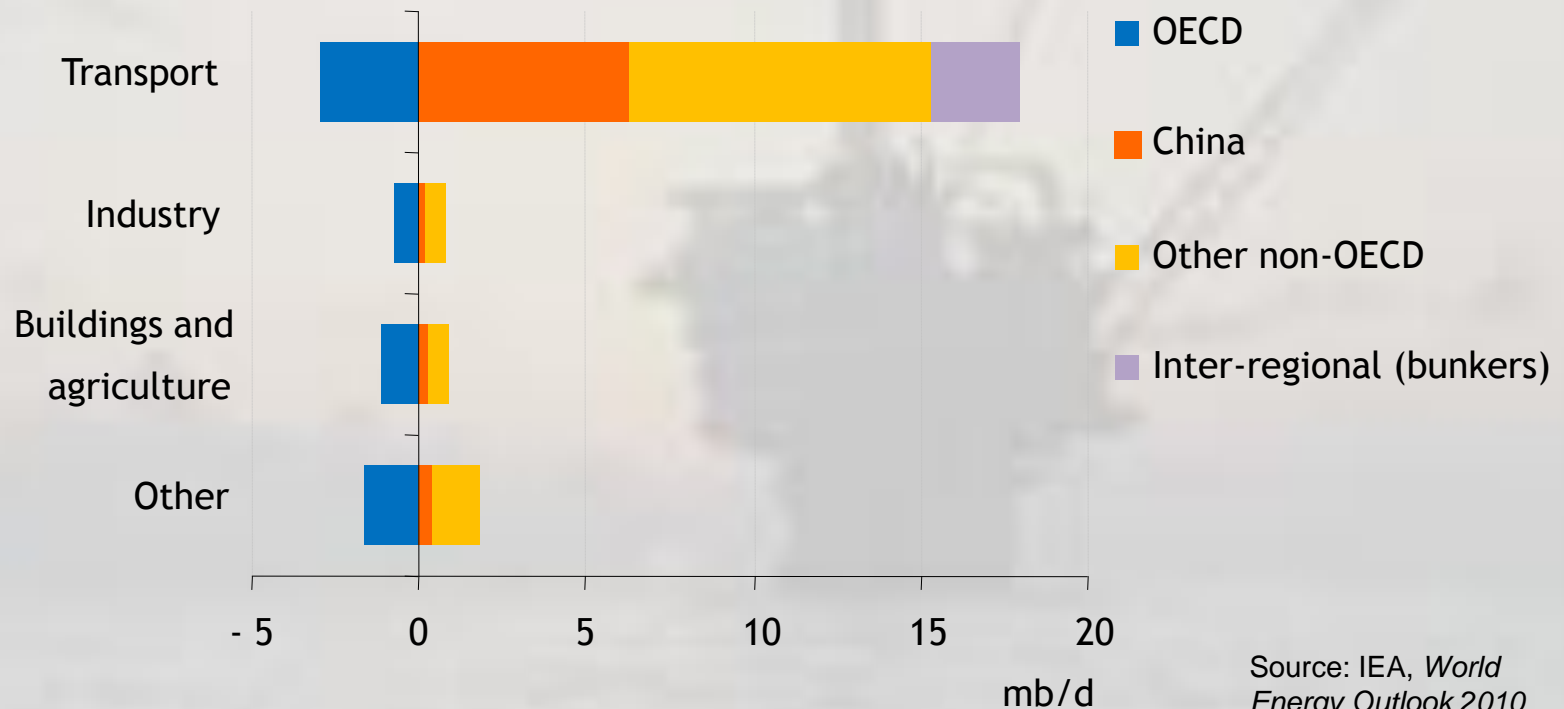
World primary energy demand in the WEO-2010 New Policies Scenario



*Oil demand expands by close to one-fifth, from 84 mb/d in 2009 to 99 mb/d in 2035, though its share in the global primary energy mix falls from 33% to 28%*

# The future of oil will be driven by transport

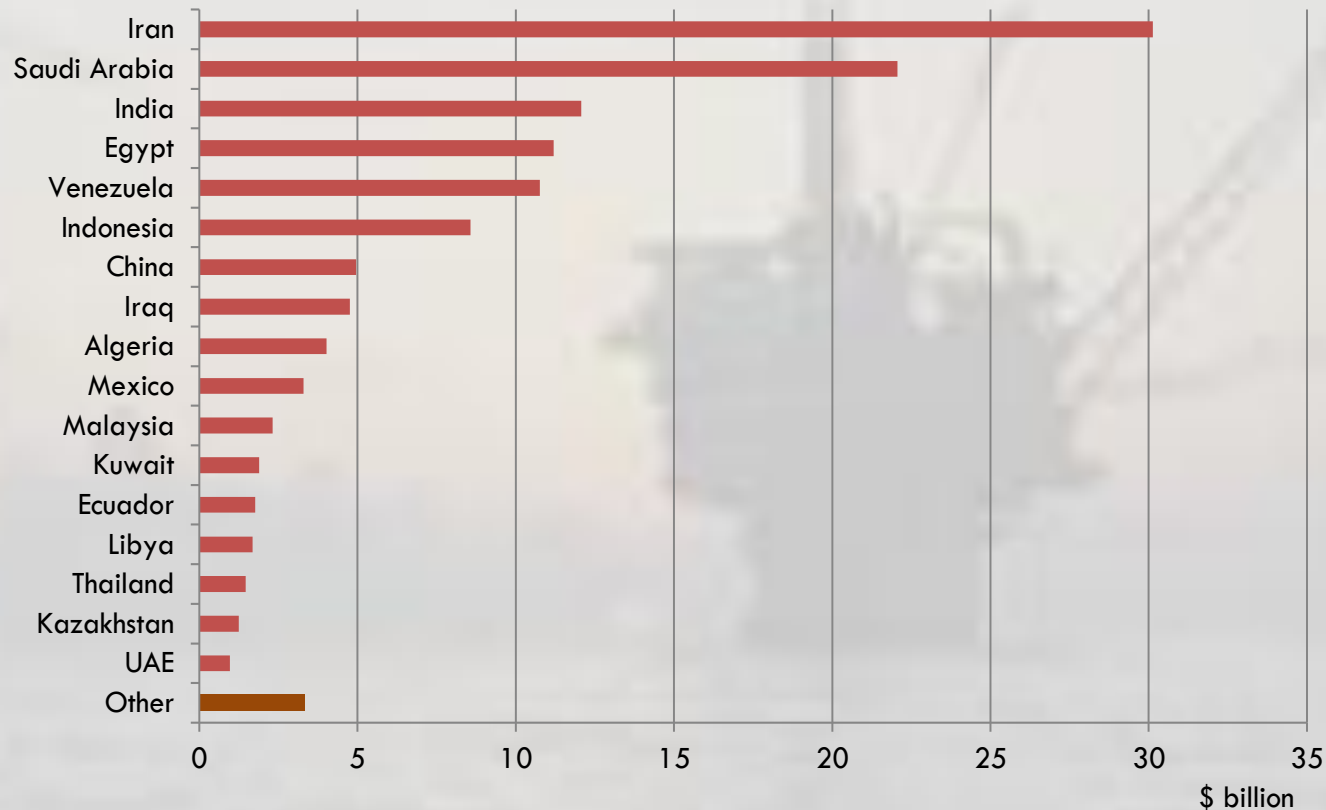
Change in primary oil demand in the WEO-2010 New Policies Scenario, 2009-2035



*All of the growth in oil use comes from non-OECD countries, mainly for transport, more than offsetting declines in the OECD in all sectors*

# Subsidies are distorting oil price signals

## Oil consumption subsidies, 2009

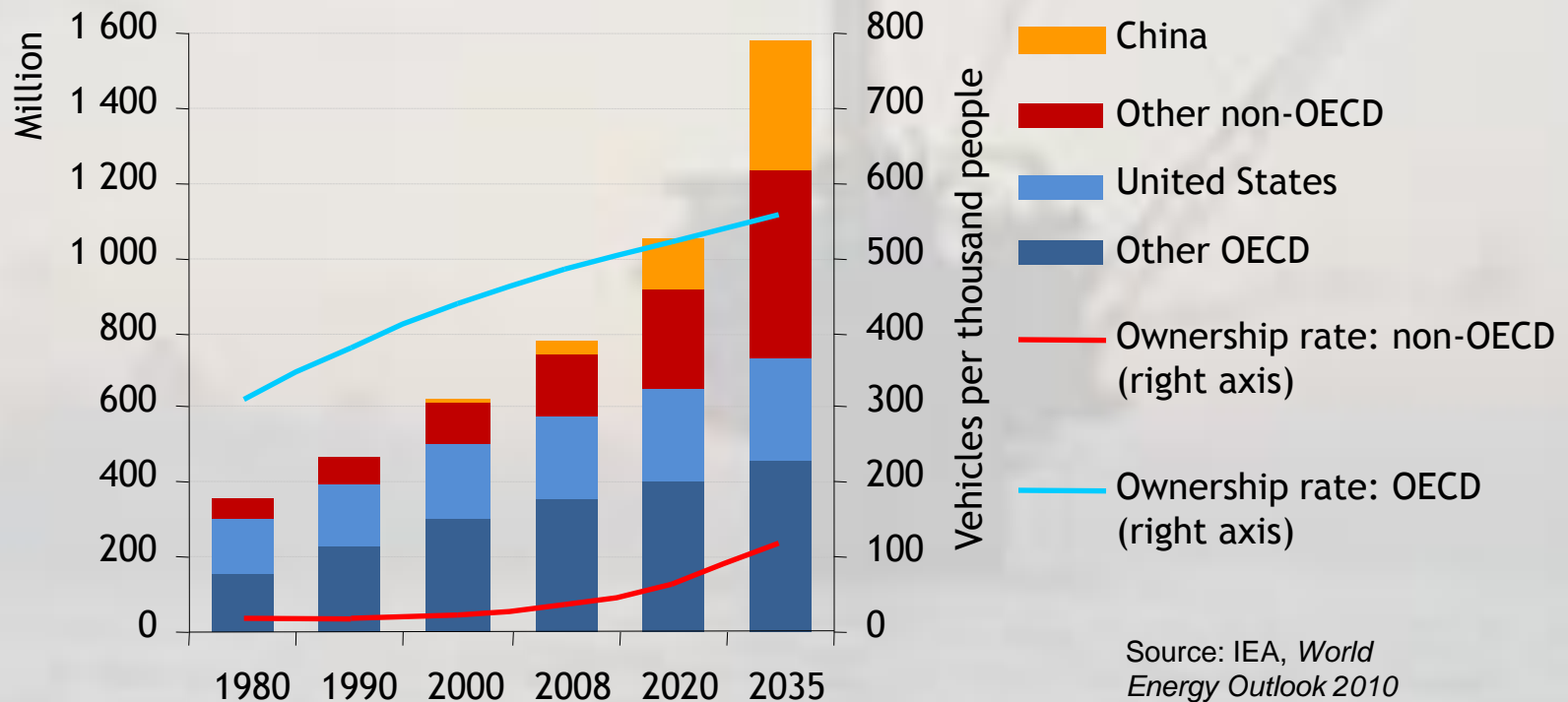


Source: IEA, *World Energy Outlook 2010*

*Subsidies to oil consumption – typically through below-cost pricing – amounted to \$126 billion in 2009, the bulk of them in Middle East producing countries*

# Car ownership will continue to surge in the emerging economies

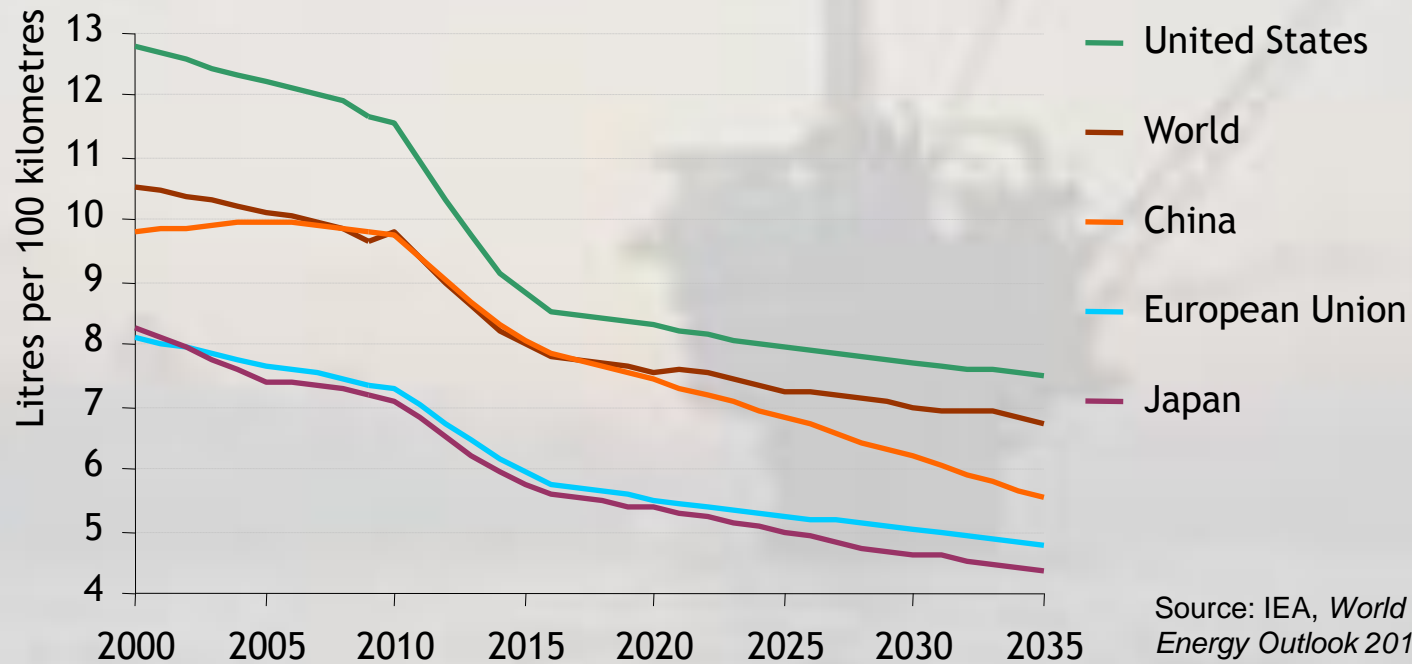
Passenger light-duty vehicle fleet & ownership rates in the WEO-2010 New Policies Scenario



*The global car fleet will continue to surge as more & more people in China & other emerging economies buy a car, overshadowing continued modest growth in the OECD*

# But new cars will be much more fuel-efficient...

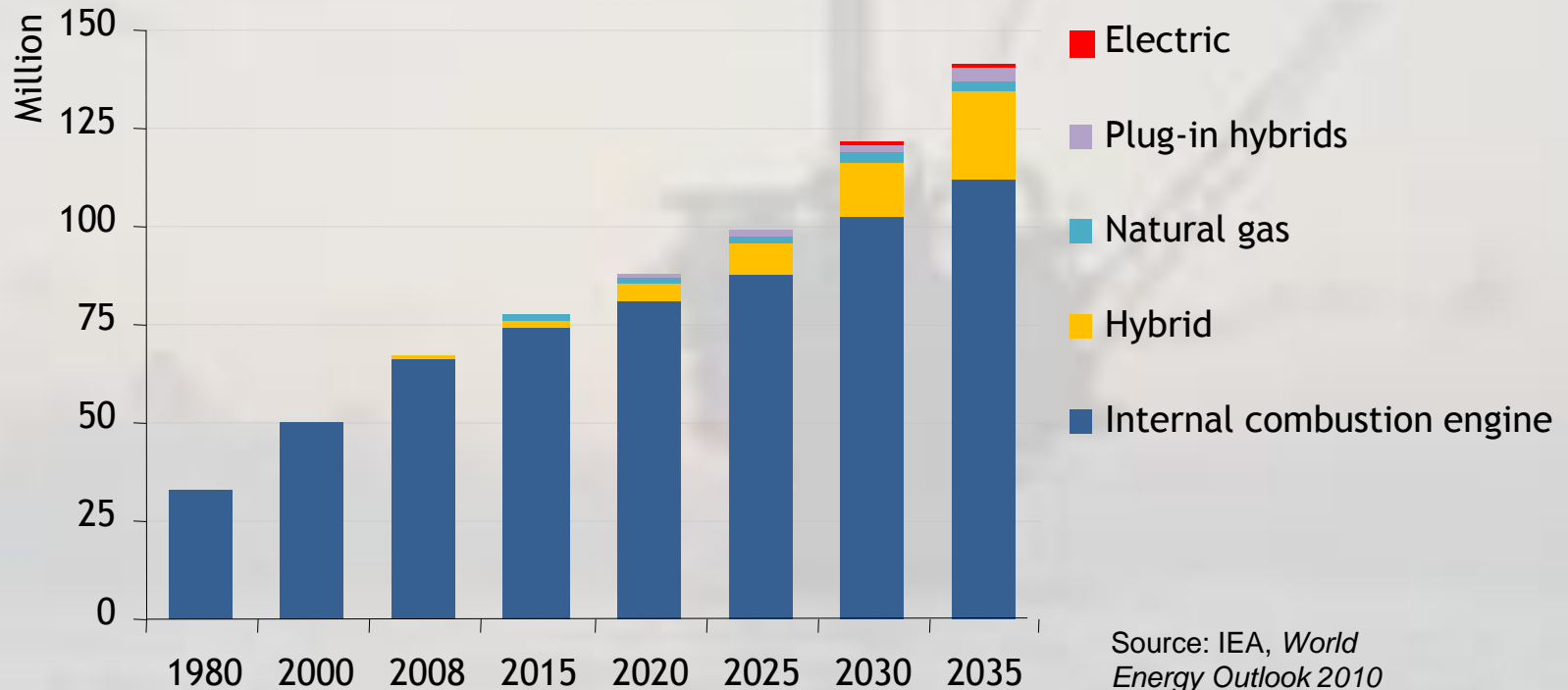
Average fuel economy of new passenger LDV sales in the *WEO-2010* New Policies Scenario



*Already announced & planned government measures will encourage carmakers to sell more efficient cars & motorists to buy them*

# ... and alternative vehicle technologies are posed for expansion

Passenger light-duty vehicle sales by type in the WEO-2010 New Policies Scenario

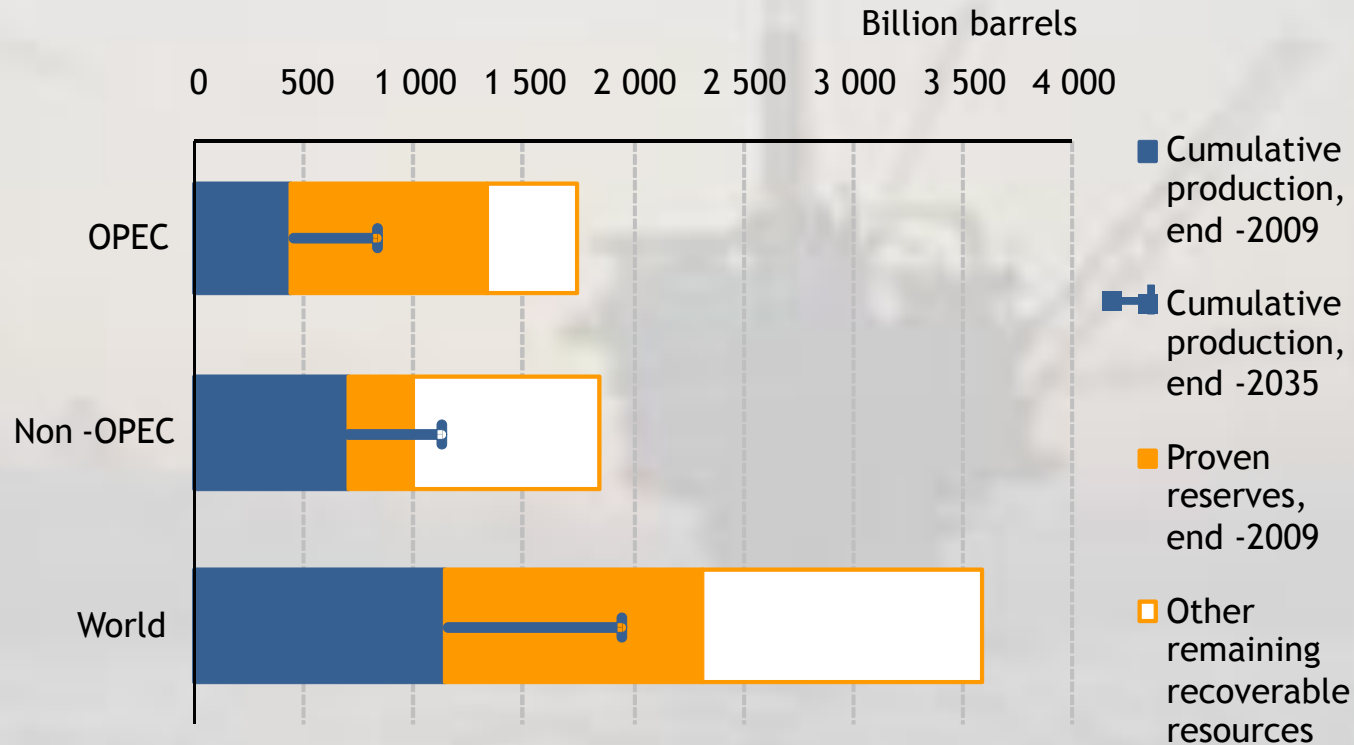


*Conventional internal combustion engine vehicles continue to dominate car sales, but hybrids & other alternative technologies account for a growing share*



# We are not running short of oil just yet

## Conventional oil resources & production in the *WEO-2010* New Policies Scenario

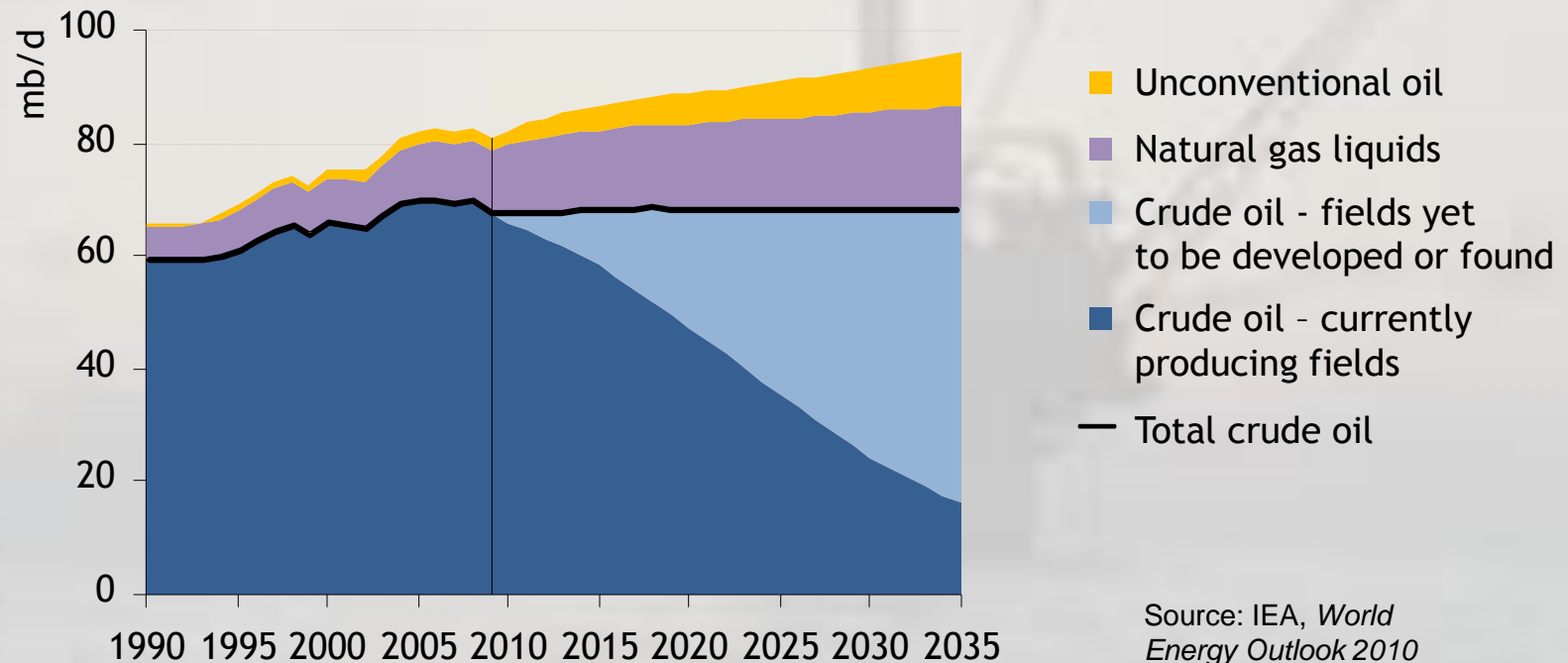


Source: IEA, *World Energy Outlook 2010*

*Half of the world's conventional resources are produced by 2035 compared with 32% today, but unconventional resources have been barely exploited*

# Oil production will become less crude

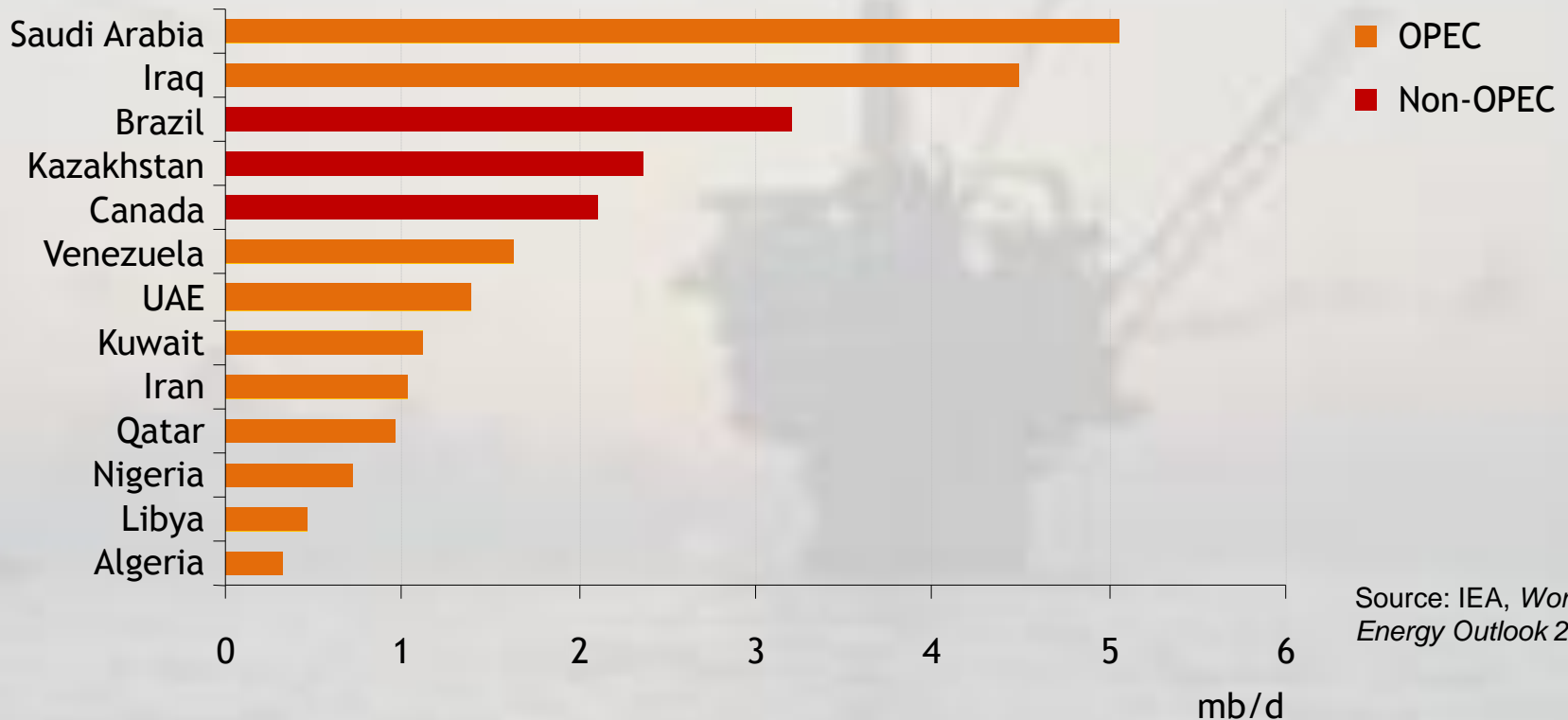
World oil production by type in the WEO-2010 New Policies Scenario



*Global oil production reaches 96 mb/d in 2035 on the back of rising output of natural gas liquids & unconventional oil, as crude oil production plateaus*

# More oil from fewer producers

## Incremental oil production by key country in the WEO-2010 New Policies Scenario

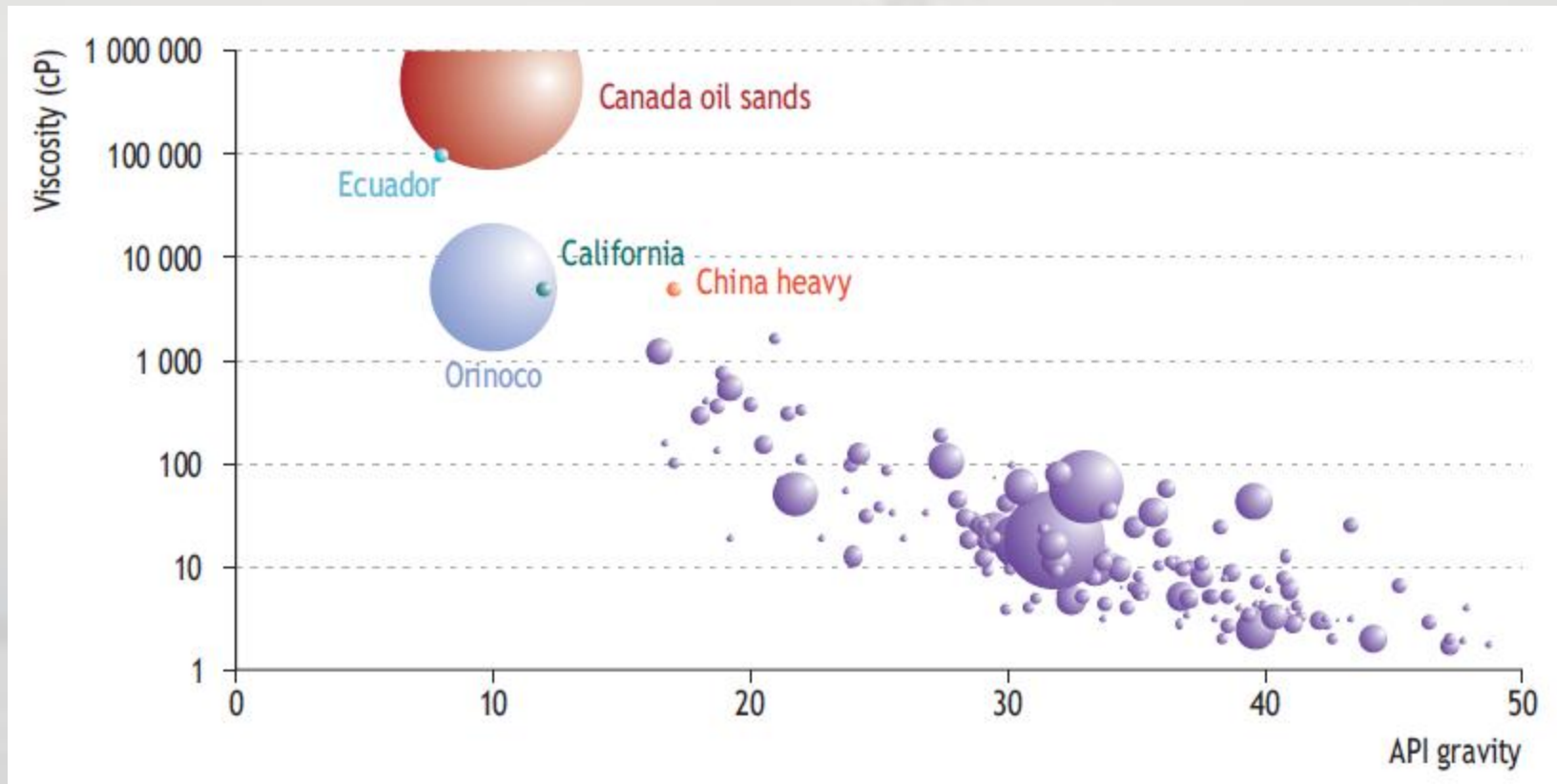


Source: IEA, *World Energy Outlook 2010*

*Production rises most in Saudi Arabia & Iraq, helping to push OPEC's market share from 41% today to 52% by 2035 – a level last seen prior to the first oil shock of 1973-1974*

# What is heavy oil?

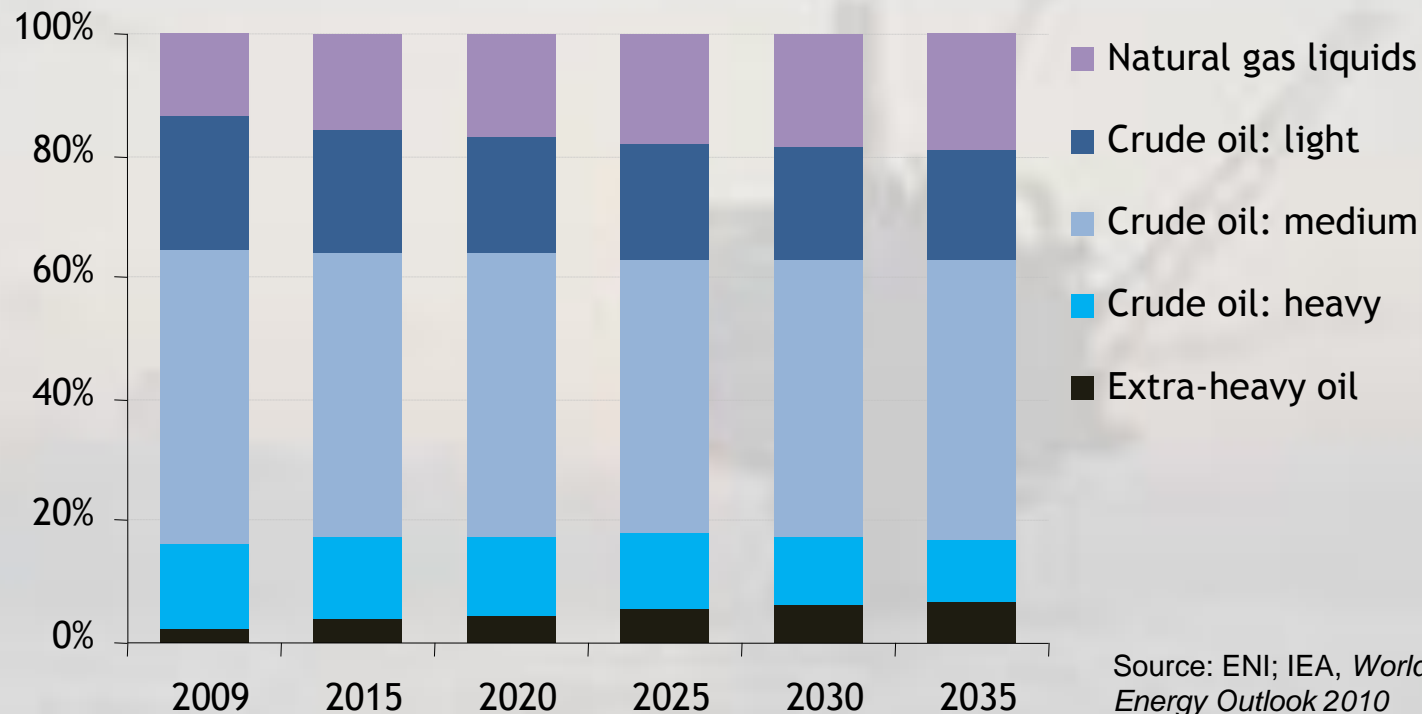
Continuum from conventional to unconventional oil resources



*The distinction between conventional & unconventional oils is not obvious, but Canadian & Venezuelan extra-heavy resources stand out by their size*

# Oil will get both heavier and lighter

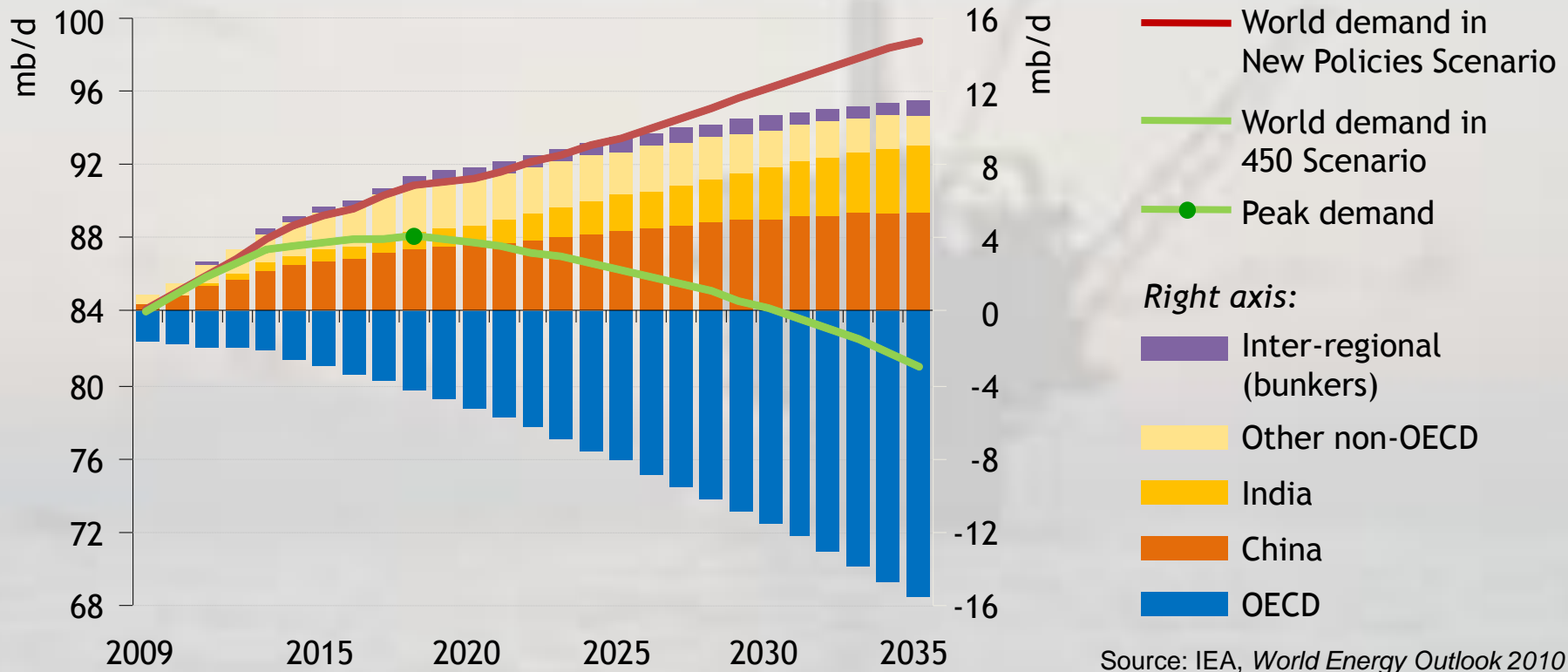
World oil production by quality in the WEO-2010 New Policies Scenario



*The share of conventional heavy crude oil dwindles in the longer term, offset by surging output of Canada oil sands & Venezuelan extra-heavy oil*

# Will peak oil be a guest or the spectre at the feast?

Oil demand in the WEO-2010 450 (climate) Scenario



*Oil demand peaks at 88 mb/d before 2020 & falls to 81 mb/d in 2035, with a plunge in OECD demand more than offsetting continuing growth in non-OECD demand*

# Summing up

- ▶ Pace of the economic recovery & geopolitical developments key to oil market outlook in medium term
- ▶ Oil demand prospects in longer term hinge more on energy-security & climate policies
- ▶ On planned policies, surging demand for mobility would drive oil demand steadily higher to 2035
- ▶ But strong policy action – *including the removal of subsidies* – could bring an early, demand-driven peak in oil
- ▶ Oil at the margin will cost progressively more to produce – *the era of cheap oil is over*

# Thank you

[trevor.morgan@menecon.com](mailto:trevor.morgan@menecon.com)

[www.menecon.com](http://www.menecon.com)

