



# World Oil Outlook 2022

## ÖGEW/DGMK Herbsttagung 2022

Presented by the OPEC Secretariat  
10 November 2022





## OPEC WOO - essential and detailed analysis of the prospects for the global oil industry



The WOO is one of OPEC's **flagship** publications, combining the **expertise** of the OPEC Secretariat and **professionals** in OPEC Member Countries.

The WOO is now also available as an **APP for Android and iOS**.

# Size of the global economy doubles; global population expands by 1.6 billion during the forecast period

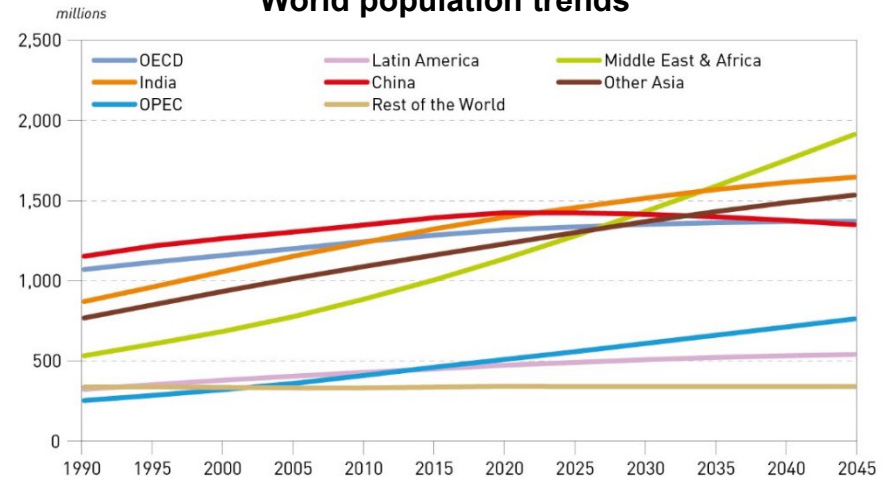


- Global GDP is set to increase by **3% p.a.** on average over the period 2021-2045
- GDP projected to rise from around \$133 trillion in 2021 to almost **\$270 trillion in 2045**
- Global population to increase by **1.6 billion** by 2045
- **Urbanization and middle class expansion**, particularly in developing countries, will increasingly play a role

## Average annual GDP growth rates

	2021-2027	2027-2035	2035-2045	2021-2045
OECD	2.0	1.6	1.5	1.7
Non-OECD	4.2	4.0	3.4	3.8
<b>World</b>	<b>3.2</b>	<b>3.0</b>	<b>2.7</b>	<b>3.0</b>

## World population trends

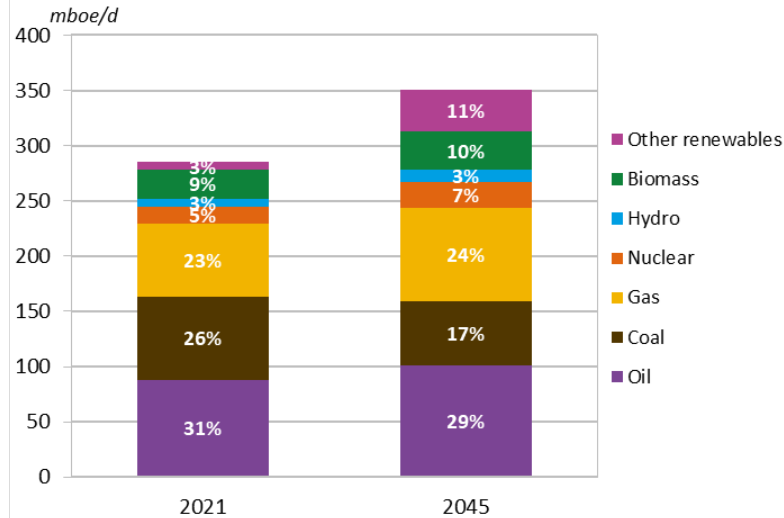


Source: UN, OPEC

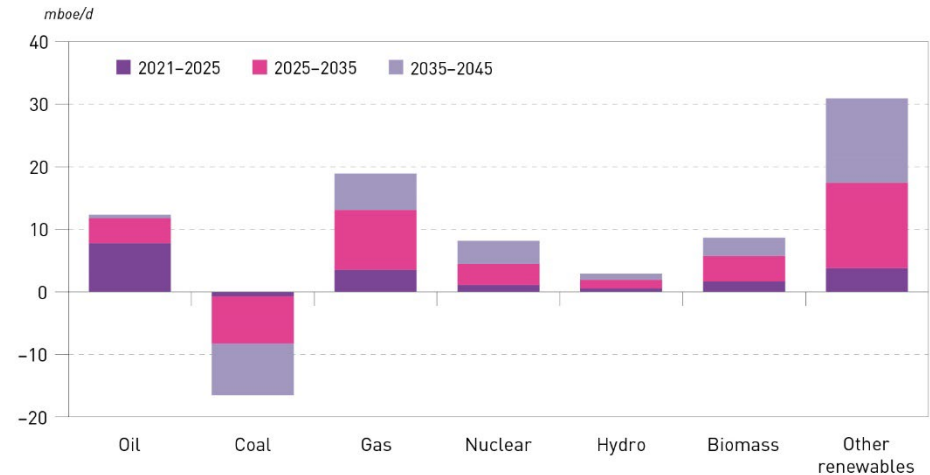
# Global energy demand is set to increase by 23% to reach 351 mboe/d in 2045



## Primary energy demand by fuel



## Primary energy demand growth by fuel



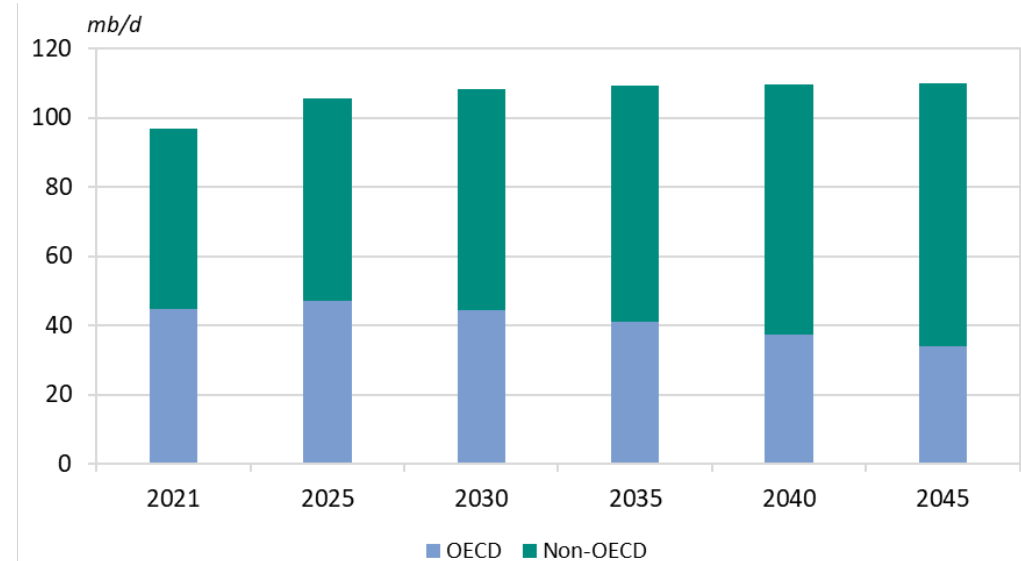
- Other renewables have the **largest** (+31 mboe/d) and **fastest** growth (7.1% p.a. on average)
- **Oil will retain the largest share** of the primary energy mix by 2045
- Entire growth in global energy demand will come from non-OECD countries, increasing by 69 mboe/d in the outlook period.

# Global oil demand is set to increase by close to 13 mb/d, rising to 110 mb/d in 2045



- Demand growth will slow after the medium-term period
- Oil demand projected to **reach almost 110 mb/d** in the long-term
- **Growth in non-OECD** region (+23.6 mb/d) will be partly offset by **declines in the OECD** (-10.7 mb/d)
- Largest incremental demand in India (6.3 mb/d), Other Asia (4.7 mb/d), Middle East (3.7 mb/d) and Africa (3.6 mb/d)

Oil demand by region

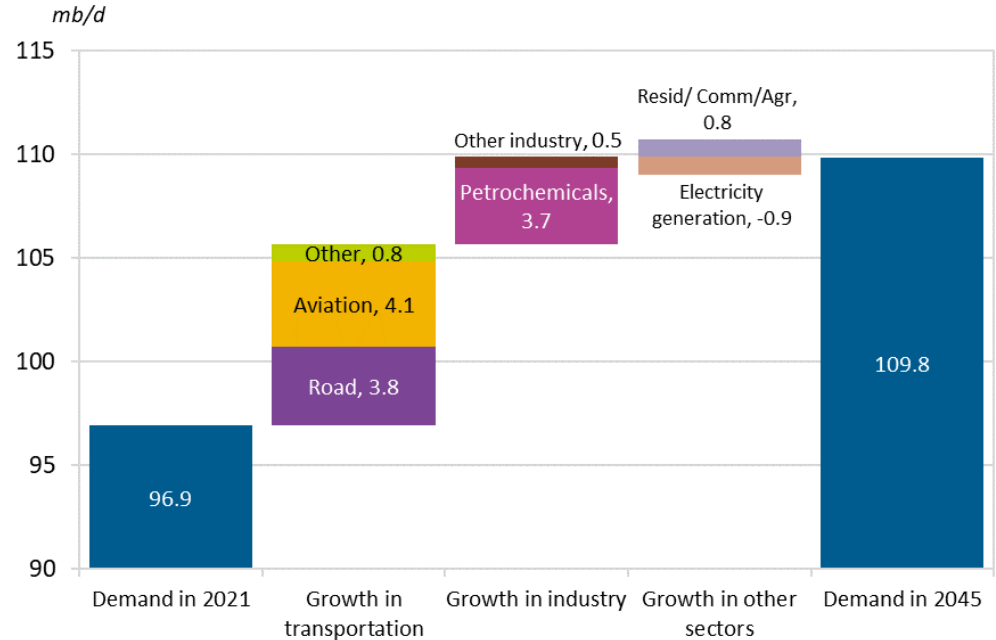


# Aviation, road transportation and petrochemicals will drive future demand growth



- **Largest contributions** to future demand growth:
  - Aviation +4.1 mb/d
  - Road transportation +3.8 mb/d
  - Petrochemicals +3.7 mb/d
- Contribution of aviation and road transportation affected by recovery from **COVID-19 crises**
- **Electricity generation**: demand decline of almost 1 mb/d

Oil demand growth by sector between 2021 and 2045

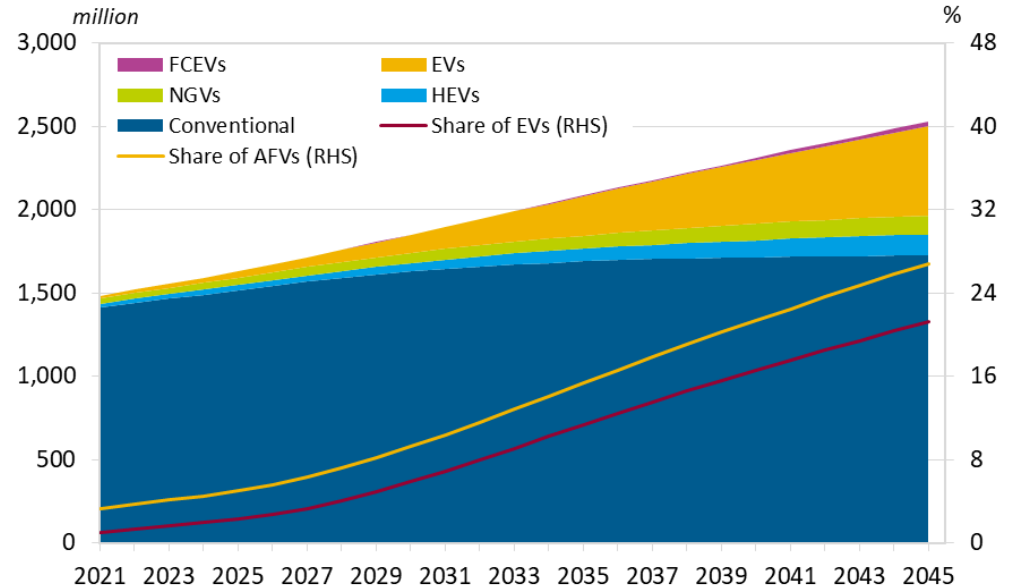


# Steady rise in the number of electric vehicles, but internal combustion engines remain dominant for the foreseeable future



- Total vehicle fleet: **2.5 billion** by 2045
- **EV fleet** projected at **540 million vehicles** by 2045 (21% of the global fleet)
- Some growth is also projected for **NGVs** (+85 million between 2021 and 2045)
- Nevertheless, ICE remains the mainstay of the road transportation sector
- By 2045: **73% ICE** vehicles vs **27% of alternative vehicles**

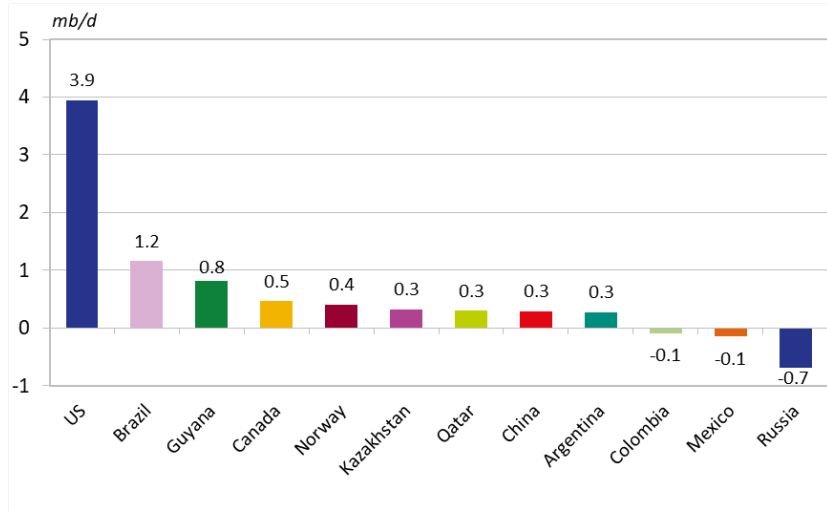
### Global fleet composition



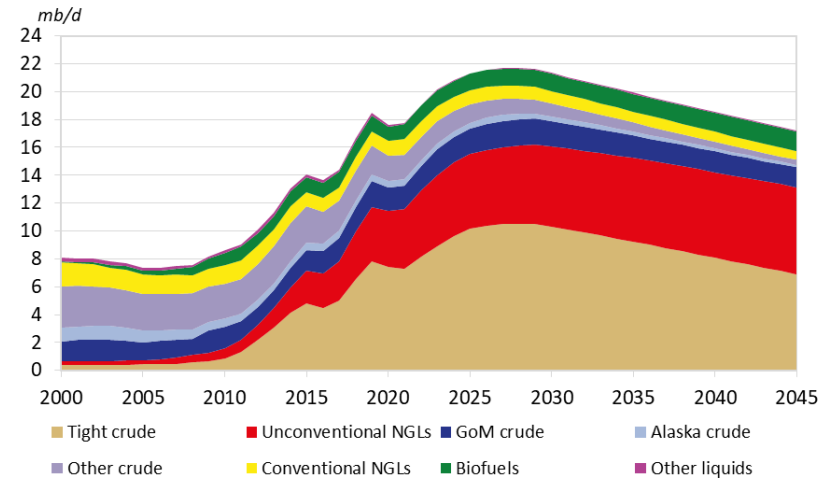
# Non-OPEC liquids supply rises strongly in medium-term, but peaks around 2030



Select contributors to non-OPEC total liquids change 2021-2027



US total liquids supply outlook



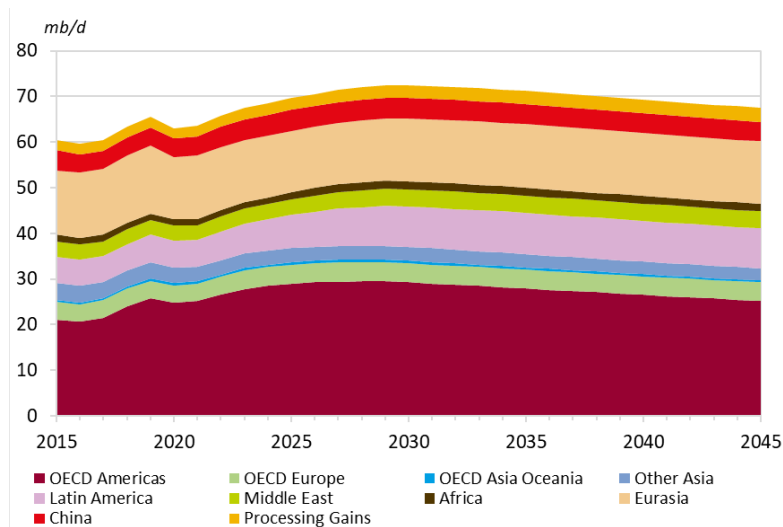
- **Non-OPEC liquids supply to grow 7.8 mb/d in medium-term**, from 63.6 mb/d in 2021, to 71.4 mb/d in 2027, with continued demand recovery and on the back of supportive fundamentals
- Driven by tight oil, US total liquids to grow from 17.8 mb/d in 2021 to a peak of 22 mb/d around 2030, and then declines again on resource constraints



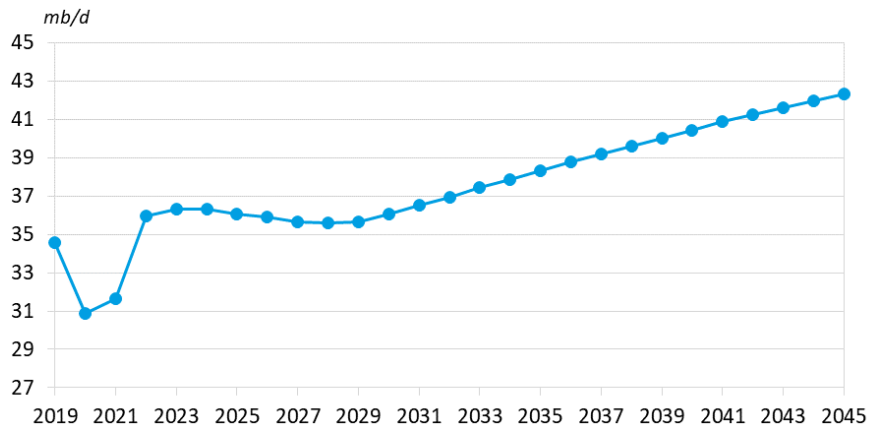
# OPEC's market share to grow after non-OPEC supply peaks



## Long-term non-OPEC liquids supply outlook



## OPEC total liquids supply



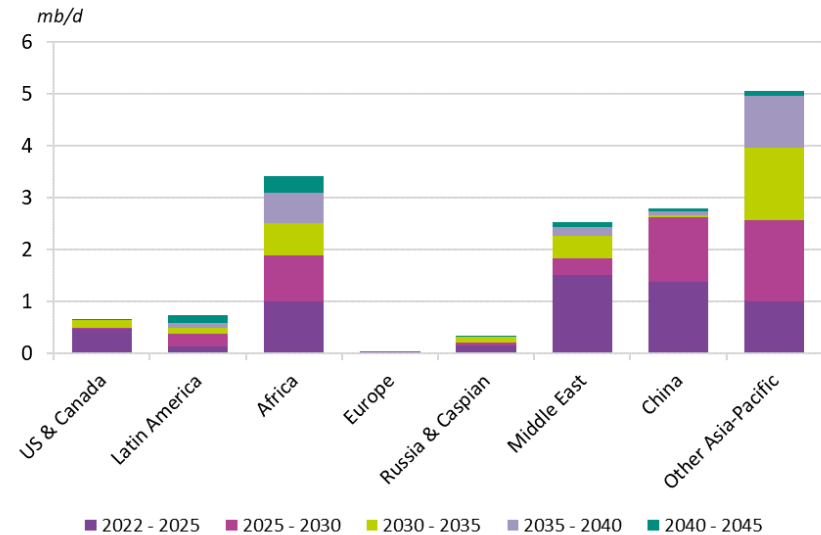
- **Non-OPEC supply peaks at just over 72 mb/d around 2030**, before declining again to 67.5 mb/d in 2045
- As a result, **OPEC liquids will grow steadily from 2030, to 42.4 mb/d in 2045**, increasing market share from 33% to 39% over the entire forecast period

# Global long-term refinery capacity additions expected at 15.5 mb/d



- **2022-2027** capacity additions estimated at **7.3 mb/d**, followed by almost **8.3 mb/d of additions beyond 2027**
- **Almost 90%** of additions to materialize in **Asia-Pacific, the Middle East and Africa**, in line with the demand growth outlook
- Other regions see only minor expansions, mostly at existing plants

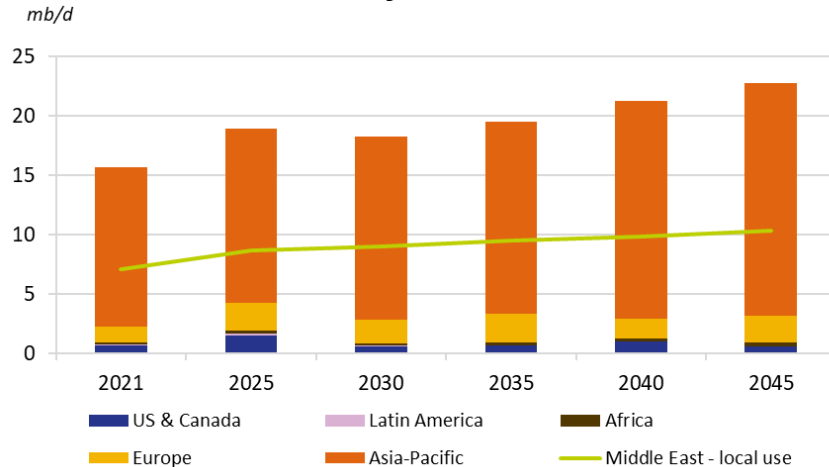
### Distillation capacity additions



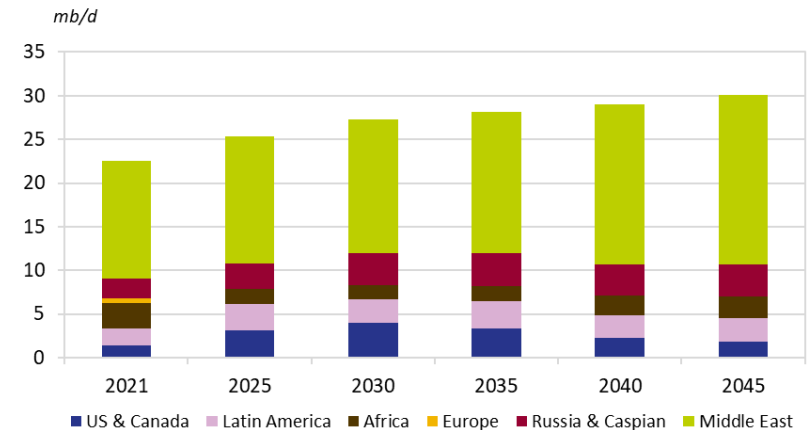
# Trade link between the Middle East and Asia-Pacific gaining in importance in the long-term



## Crude and condensate exports from the Middle East by destination



## Crude and condensate imports to the Asia-Pacific by origin



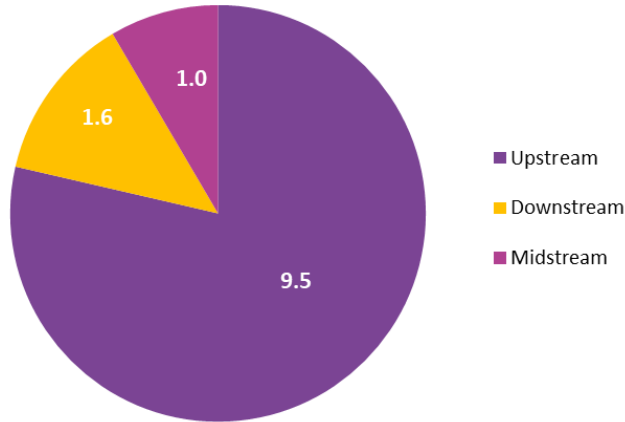
- Imports to Asia-Pacific expected to increase by **7.6 mb/d, reaching 30 mb/d in 2045**
- The crude and condensate trade volume between the Middle East and Asia-Pacific increases from around **13.5 mb/d in 2021 to 19.5 mb/d in 2045**

# Oil sector requires \$12.1 trillion investments



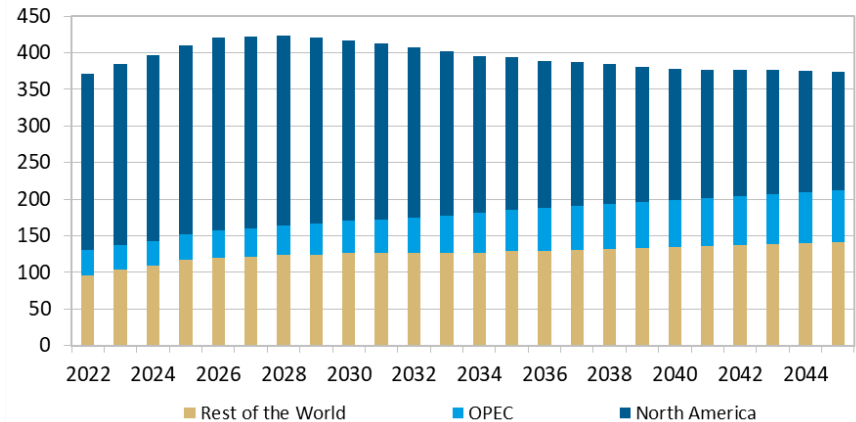
## Cumulative oil-related investment requirements by sector, 2022-2045

\$(2022) trillion



## Annual upstream investment requirements

\$(2022) billion



- **Global oil-related investment requirements total \$12.1 trillion** (in 2022 US dollars) over the long-term, of which \$9.5 tn is needed for the upstream, \$1.6 tn for the downstream, and \$1 trillion in the midstream
- **North America represents the bulk of upstream investments** for most of the forecast period

# Key takeaways



- **All forms of energy** will be needed to support future socio-economic growth
- **Wind and solar** energy demand will grow fastest making the energy mix more **diversified**
- **Oil** will retain the **highest share** in the global energy mix over the forecast period
- Oil demand growth in the medium-term will be followed by plateauing demand in the long-term
- Uncertainty to the supply and demand outlook remains high
- **Adequate and timely investments** in the energy sector are critical
- Despite significant growth in global energy demand, **energy poverty will remain a major issue**

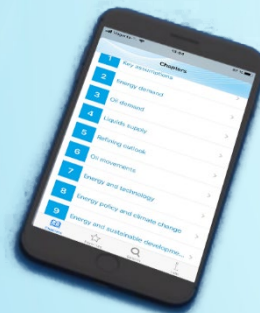


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