

# Angolan upstream investment and fiscal attractiveness

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## Upstream market trends

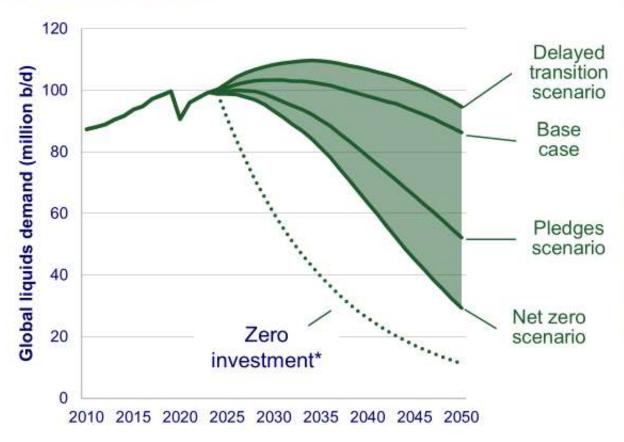
First some context



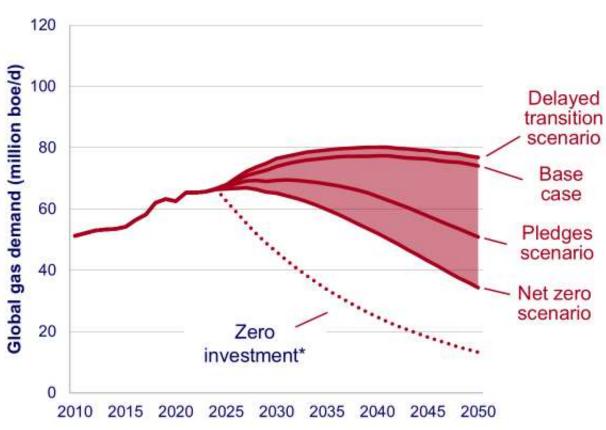
## The energy transition makes strategic planning more complex

Operators are targeting resilience and sustainability; gas demand is more resilient than oil in all outcomes

#### Oil demand uncertainty



#### Gas demand uncertainty

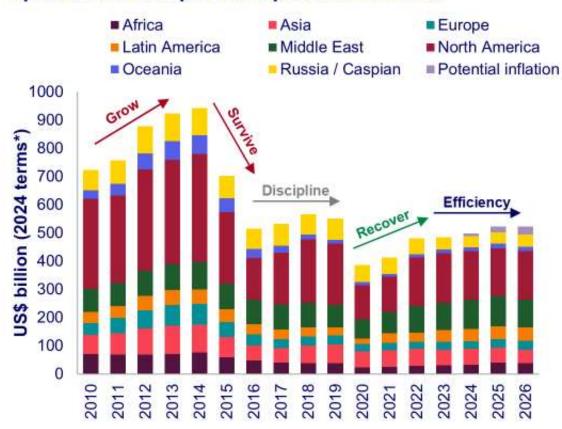




## Having rebounded from the pandemic, global capex is now flattening out

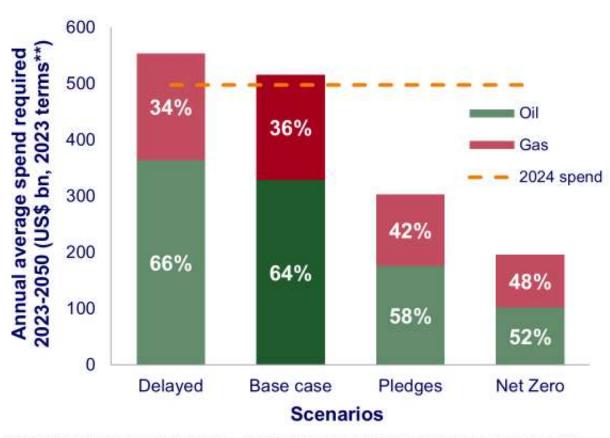
Despite price and spend turbulence, the oil and gas industry has consistently added volume

#### Upstream development capex and mindset



## Source: Wood Mackenzie Lens Upstream. \* Adjusted to 2024 terms using US CPI, the results are directionally the same using US or global PPI.

#### Global upstream oil and gas development capital scenarios

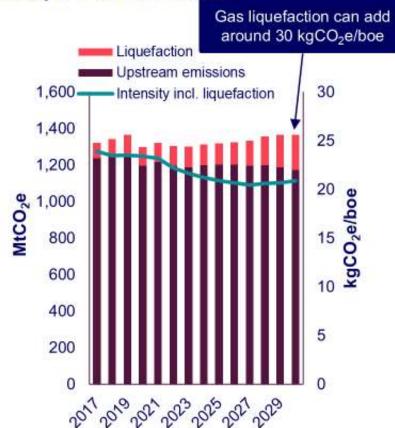


Source: Wood Mackenzie Upstream. Required capital calculation based on base case unit cost assumptions. However, the delayed transition scenario would be highly inflationary, increasing the resultant absolute capex requirement. \*\* Adjusted to 2023 terms using US CPI.

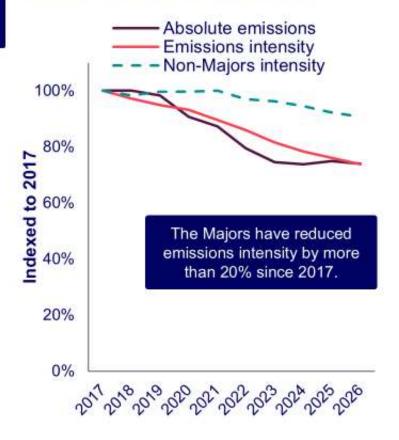
## Global upstream scope 1 & 2 emissions intensity has been cut by 11% since 2017

The Majors have outperformed the sector, but the sector is off-track for 2030 targets

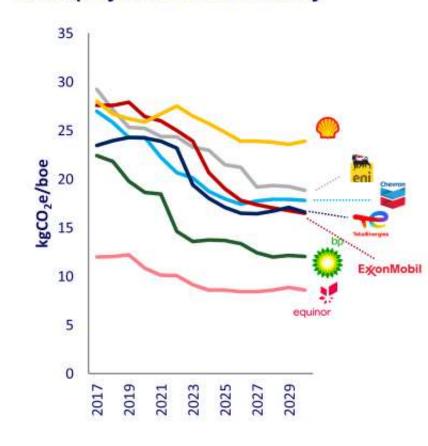




#### Majors' net equity emissions



#### Net equity emissions intensity





## The world needs more high-quality oil and gas regardless of demand expectations

Advantaged resources will command the greatest capex, drive M&A and is most wanted by end-users

Advantaged resource characteristics

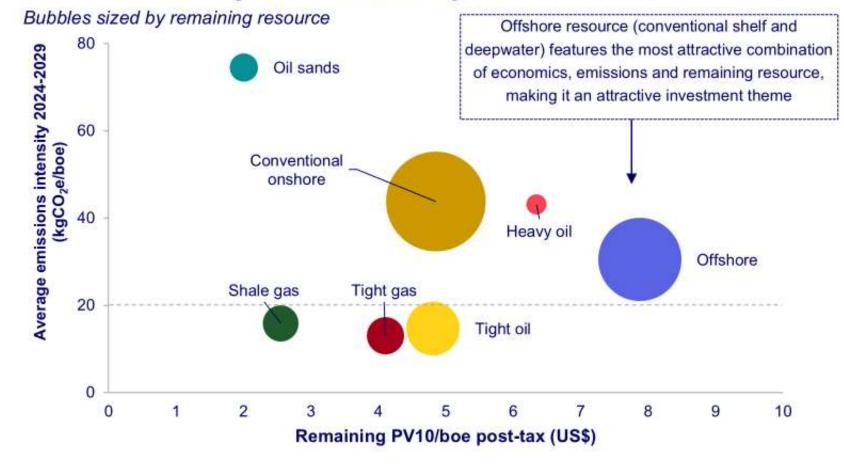
Strong economics

Low emissions

Low risk

Improving the quality of discovered resources and exploration will be critical to increase advantaged resources

#### Emissions intensity and economics by resource theme

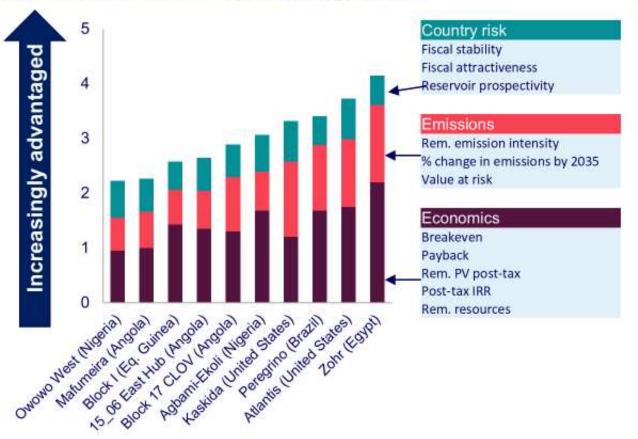




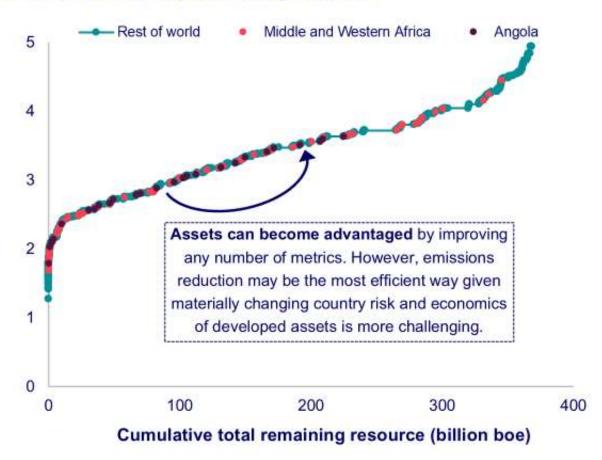
## Determining which assets are advantaged

By combining economics, emissions and country risk we can identify advantaged assets

#### Select assets ranked by advantage score



#### Offshore assets by advantaged score





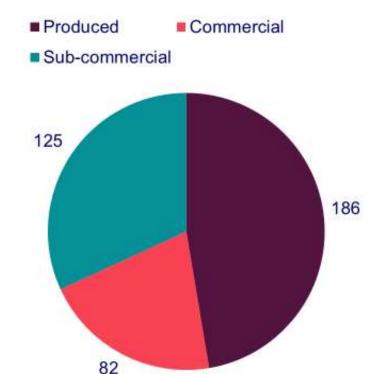
## Africa and Angola focus



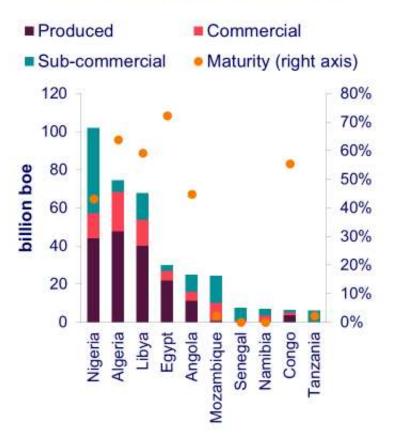
## Africa holds more than 200 billion boe of remaining oil and gas resources

Angola is ranked 5th on the continent for remaining resources

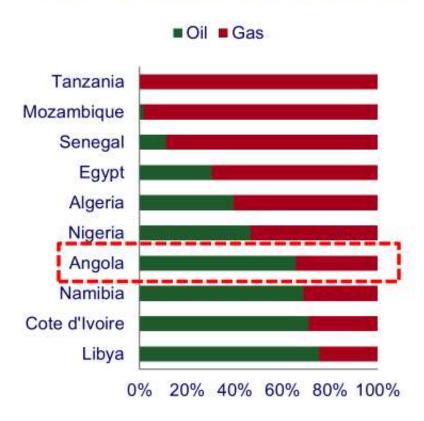
#### Africa oil and gas resources (392 bnboe)



#### Resources for top 10 countries



#### Remaining resources split by HC type

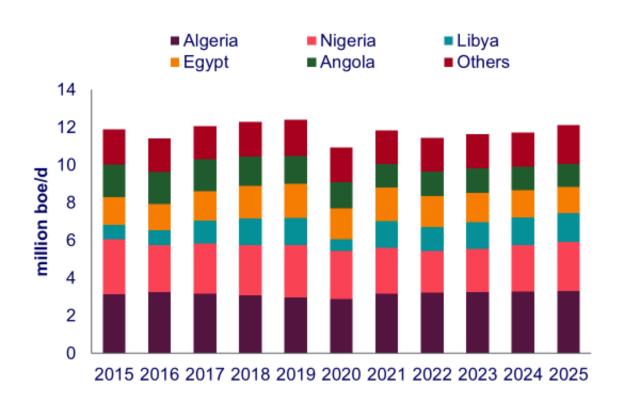




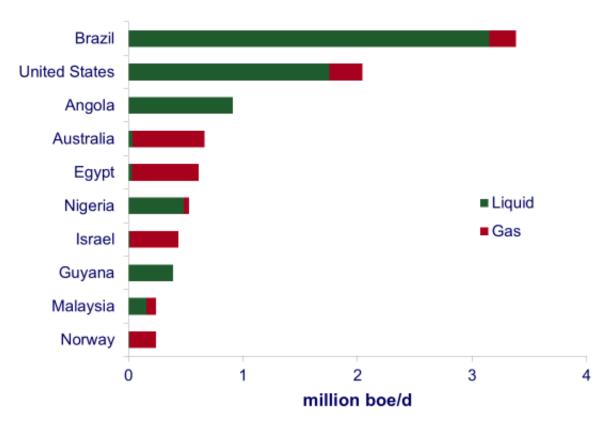
## Angola is a deepwater leader in Africa and third ranked globally

But deepwater production is down by a third over the past decade

#### Africa oil and gas production



Top 10 deepwater producers

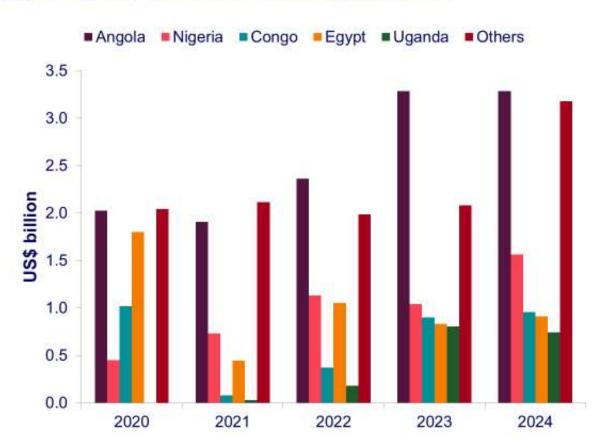




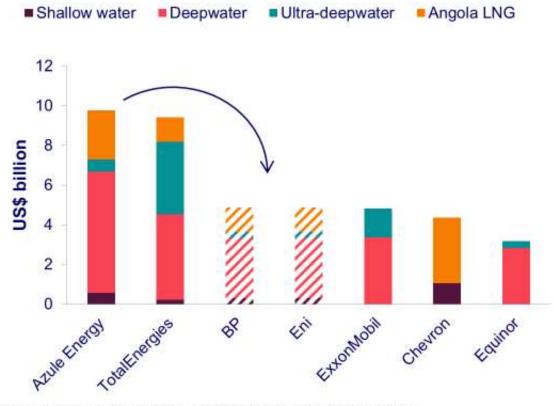
## Majors' investment and net present value in Angola

Angola has the highest upstream investment weighting to the Majors globally\*

#### Majors' upstream investment trends in Africa



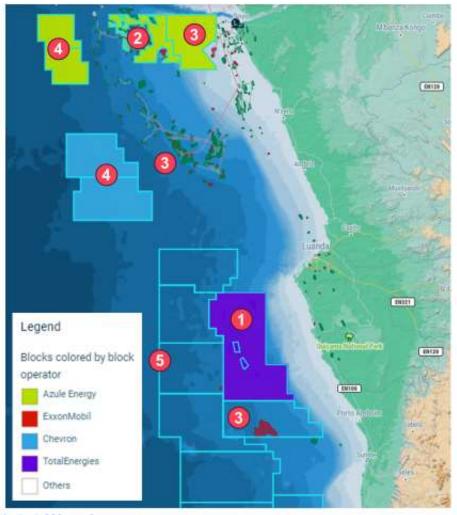
#### Angola net present value for the Majors



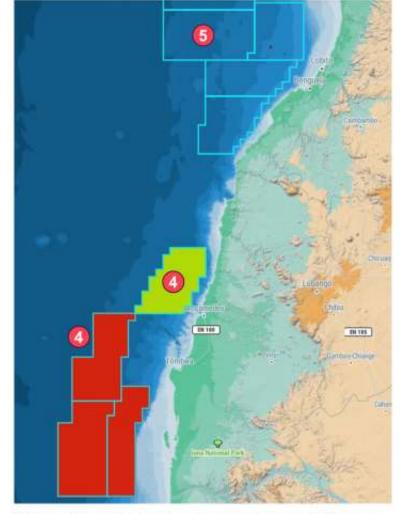
10% discount rate, 1 January 2024, US\$65/bbl long-term Brent oil price.



## Angola upstream: six things to look for in 2024-2026



- (i) Kaminho progress next contract awards and innovative cost initiatives?
- Block 15/06 what new field developments will go ahead?
- O Angola's next gas project? The Gas Master Plan outlines the prize.
- Wildcats: will frontier wells succeed? Will the Namibe be opened?
- Deepwater bid round 2025: will we see new entrants, and what terms will be offered?
- M&A activity: what assets and companies will be traded?



Source: Wood Mackenzie Lens. Numbers are not in order of importance.

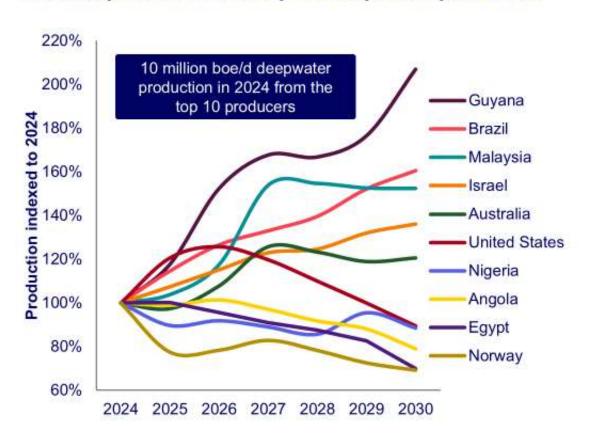
## Angola fiscal benchmarking



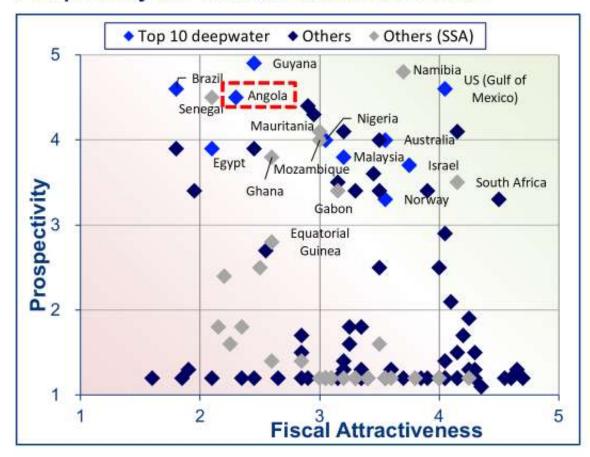
## There is a large competitive landscape among deepwater producers

Resource scale and quality varies enormously

#### Indexed production for top 10 deepwater producers



#### Prospectivity and Fiscal attractiveness indices

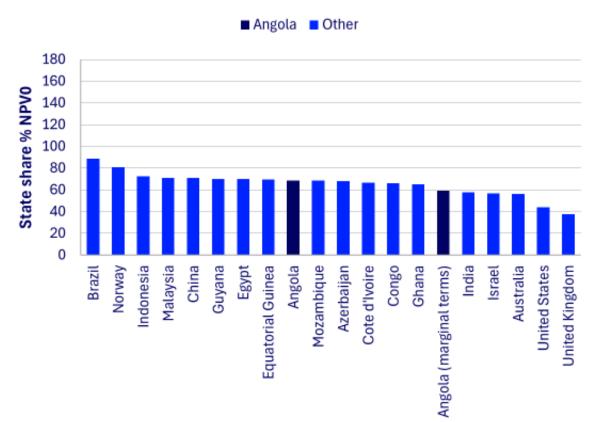




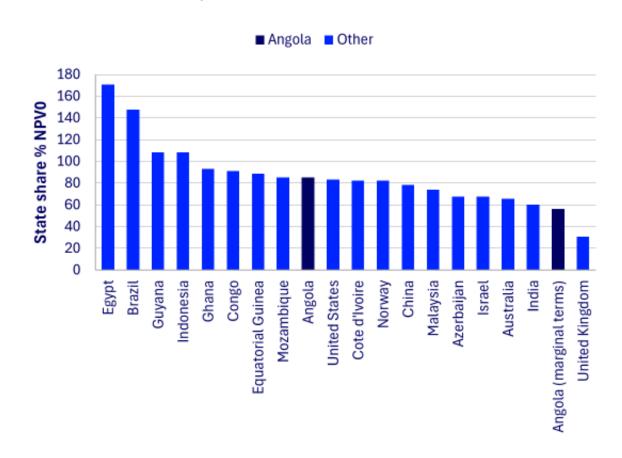
### Angola marginal field terms are globally competitive

The standard terms rank mid-table

Benchmarking of 400 mmbbl oil field, US\$24/bbl total cost



#### 140 mmbbl oil field, US\$45/bbl total cost



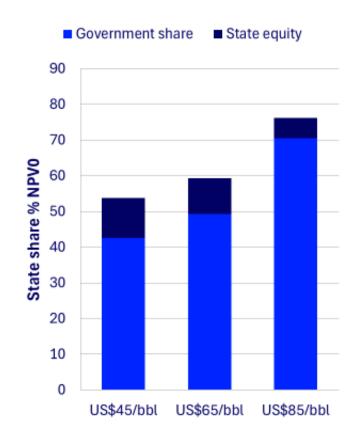


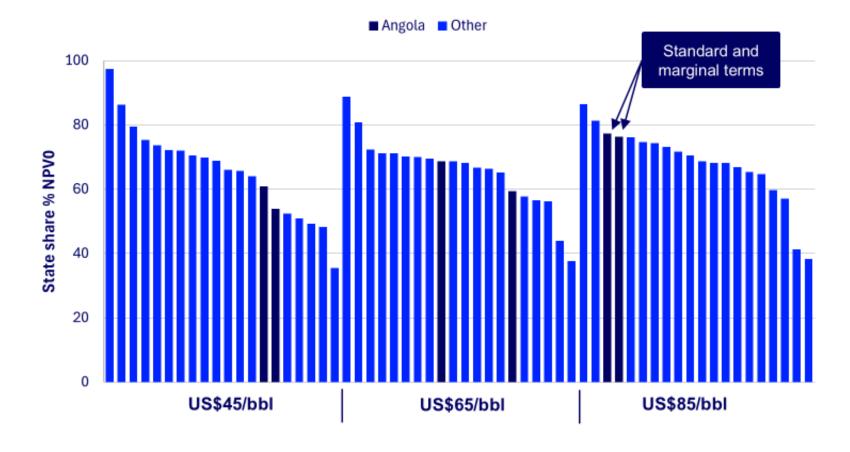
### Angola remains competitive at low prices – resilient barrels

Progressive tax system takes more of the revenues at high oil prices

400 mmbbl oil field (marginal terms)

Fiscal benchmarking and oil price sensitivity







## Where next for Angola to remain competitive?

Everything gets more difficult as the basin matures

## Success factors



- The regulator role is working well
- Investment has leapfrogged Sub-Saharan African peers
- The Majors have been committed to deepwater growth and investment

## Keeping an edge



- Fiscal incentives have unlocked projects
- Licensing rounds have attracted new and local players
- International NOCs are playing a bigger role

## Ongoing work



- Sonangol to further reform its business...IPO?
- A stronger roadmap on decarbonisation and net zero
- Unlocking new basins and new resources



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