



The oil & gas valve industry in Italy

BUSINESS STRUCTURE, TRENDS AND OUTLOOK

Edition 2024



- 
- **Executive Summary**
 - **Business Structure & Italy's role in the European valve industry**
 - **Recent trends in O&G valves trade (and revenues)**
 - **A focus on O&G Upstream Investments**
 - **Beyond Upstream: the catalysts of growth (2023-2030)**

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The oil & gas valve industry in Italy

Executive Summary (1/5)

Latest available data confirms both Italy leadership in the O&G valves industry...

- *According to latest available data, the Italian **Oil & Gas Valves** industry constitutes a prominent sector within Italian manufacturing, boasting 139 enterprises, employing 10,000 individuals, and generating an annual turnover of 3.0 € billions. With a commanding 39.6% share of the European overall production, the Italian **Oil & Gas Valves** industry stands out as a powerhouse, leading in segments including Ball and Plug valves, Butterfly valves, Gate valves, as well as Parts & Components. Lombardy region dominates the industry, accounting for almost two-thirds of the national valve production, with Bergamo serving as a crucial hub.*

... and the pivotal role of Bergamo within this framework

- *90%+ of the sector's turnover is generated within a 100 km radius of the province of Bergamo, where 100+ enterprises are engaged in **Oil & Gas Valves** production contributing (with approx. 1.4 € billion in overall revenues, or 47% of the National turnover of the industry, almost 5,000 individuals employed and 4.2% of region's total industrial output) to the Lombardy's status as a leader of Italian manufacturing landscape.*
- *The Bergamo **Oil & Gas Valves** district thrives on a specialized supply chain comprising 25 companies engaged in the production of finished products, boasting a total turnover of 444 € million (as of 2022). Additionally, 79 companies are involved in various other phases of the supply chain, which employs over 5200 individuals with a total turnover of more than 1.5 € blns.*
- *As of 2022, Gaskets and Sealing Systems, alongside Valves, represent the cornerstone of Bergamo **Oil & Gas Valves** production, commanding shares of 35% and 29%, respectively, of overall turnover. Following closely behind are Actuators and Components, contributing 20% to the production landscape.*

The oil & gas valve industry in Italy

Executive Summary (2/5)

Pandemic-related spillovers (2020-2021) seep through the Italian O&G Valves industry 2022 results

- *Following a steep decline of 2020, the recovery of global investments in the Oil & Gas sector progressed at rather subdued rates, and only from 2022 onwards they "reconnected" with the pre-pandemic levels. Inevitably, due to the (approx. 1 year) temporal lag with which investment decisions of upstream/downstream companies shift into component orders, the 2022 results of Italian **Oil & Gas Valves** producers "bear the scars" of the previous years' troubles. Overall, the double-digit revenues recovery observed in 2022 didn't prove strong enough to offset the impact of the 2020-'21 decline. Compared to 2019 results, there indeed persists a negative differential of approximately 10 percentage points.*

Evidence from 2023 brings with several promising developments for Italian O&G industry. Sales abroad experienced a strong recovery

- *The recovery did not halt in 2022. That arise from the latest available indicators, such as foreign trade, which, following an "uncertain" 2022, saw Italian export of **Oil & Gas valves** growing at sustained rates (+5.7% in value), outpacing both global trade (+1.5%) and pre-pandemic average (+3.9% CAGR 2010-'19) growth rates. Very encouraging performance for a business whose 95%+ of annual turnover is generated abroad.*
- *In detail, 2023 exports' rebound has been primarily fuelled by increased sales in Middle East (which account for approx. 20% of Italian **O&G Valves** exports) and Asia while (hindered by the consequences of sanctions to Russian O&G sector) the industry performance in Western and Eastern European markets resulted less bright. Top-4 markets accounted for 38%+ of overall export values of Italian **O&G Valves**: United States crystallized its position at the top of the ranking of major destinations, followed by Germany (8.8%), which surpassed China (7.9%) to claim the second spot in the ranking.*

The oil & gas valve industry in Italy

Executive Summary (3/5)

Investments growth in Global O&G Upstream / Downstream provided a favourable environment for O&G Valves producers in 2023

- *Energy prices increases observed in 2022 triggered a steep rise both in O&G Industry revenues and capital expenditure which, in turn, are expected to have underpinned a huge increase in orders both for upstream and downstream equipment. Due to the lag that occurs between O&G Revenues/Capex developments and equipment orders, the impact of 2022 rise in spending activity will be evident in the **O&G Valves** producers financials starting from 2023.*

Some uncertainty persist as moving into 2024 however, Capex increases could still fuel a solid O&G equipment growth

- *Oil price have been under downward pressure in 2023, losing almost 20% on \$ basis, amid weakening global economic activity, record output from the United States, and steady exports from Russia. Those factors offset the impact of rising geopolitical risk and lower production from OPEC+. Global gas markets as well witnessed an adjustment towards equilibrium. Not surprisingly, the 15.7% decline in oil prices observed in 2023 led to a similar (-16.2%) decline of O&G Upstream revenues and a more pronounced decline in margins (-23%). Nevertheless, the EBITDA margin remained robust at 31.3%, almost 5 p.c. points above the 2019 levels. What matters the most, oil and gas upstream companies raised capital expenditures by approx. 19% in 2023, mostly on higher activity (and rising materials & labour costs).*
- *We estimate that O&G CAPEX grow could extend throughout 2024 (+6.8%), albeit at a less pronounced rate compared to 2023 (+18%), before showing a slight correction in 2025 (-4%). Other factors unchanged, we expect that O&G Upstream CAPEX will confirm at consistently elevated levels in the next two years, almost 30% above the pre-pandemic providing a solid support for **O&G Valves** and equipment demand.*

The oil & gas valve industry in Italy

Executive Summary (4/5)

Beyond 2025: the O&G Valves producers could find growth opportunities even in a weakening hydrocarbons consumption scenario

- *Even though there isn't a consensus on when exactly oil demand will peak, most predictions suggest it could happen within 2030 as renewable energy sources become more competitive and transportation technologies evolve. While the overall pace of upstream activities may stall over time - there will still be demand for their products to support ongoing operations, maintenance, and optimization of existing infrastructure. Additionally, as the industry seeks to extract oil more efficiently and sustainably, there may be opportunities for **O&G Valves** producers to supply specialized products targeted at improving operational performance, enhancing safety, and reducing environmental impact.*

Moving forward, the imperative for O&G Valves producers is catching growth opportunities both within the ever-evolving energy sector...

- *Pandemic triggered a sizeable rationalization of Western regions refining industry and this trend is unlikely to revert in the future as European (and North American) mobility sector move towards electrification. Not surprisingly, future capacity additions (in what appears the last wave of refinery additions in history) are mostly located East-of-Suez. The outlook appears more promising for energy (gas above all) transportations services. A new wave of liquefaction capacity is indeed expected to come onstream within the end of the decade. Regasification capacity should expand as well, albeit at a lower growth rate. Further opportunities might stem from the deployment of new pipelines.*

The oil & gas valve industry in Italy

Executive Summary (5/5)









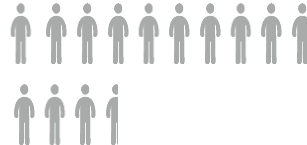





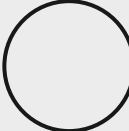
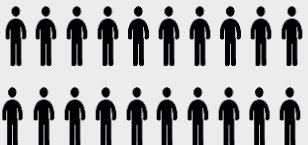
... and beyond hydrocarbons

- *By capitalizing on growth opportunities in new markets and industries and adapting to changing market dynamics, there exists huge opportunities for O&G Valves producers to diversify their revenue streams and reduce dependency on hydrocarbons. While acknowledging the speculative nature of some initiatives still in early development stages, potential catalyst of growth for O&G Valves producers includes:*
 - **Carbon Capture and Storage (CCUS)** whose capacity, on “under construction” and “planned” projects, could grow up to 19x on global scale within 2030, compared to 2023.
 - **Hydrogen** industry whose capacity, based only on projects in construction and at the FID (Final Investment Decision) point, could grow up to 3.7 million tonnes within 2030, or 10X compared to 2023.
 - **Space Industry**, as the number of rockets being launched into orbit could growth 3.2X within the end of the decade, leading to greater demand for components for systems (such as fuel valves) utilized in ground support.

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The Italian industry of tapes and valves

A core sector of Made in Italy IM&E industry (2022)

		Enterprises (#)	Production value (€ blns)	Employees (#)
	 Oil & Gas valves	 139	 3.0	 10.000+
	 Oth. industrial valves*	 394	 5.6	 15.000-
	 Household taps	 258	 2.0	 7.000-
TOTAL	Tapes & Valves	 791	 10.6	 31.000+

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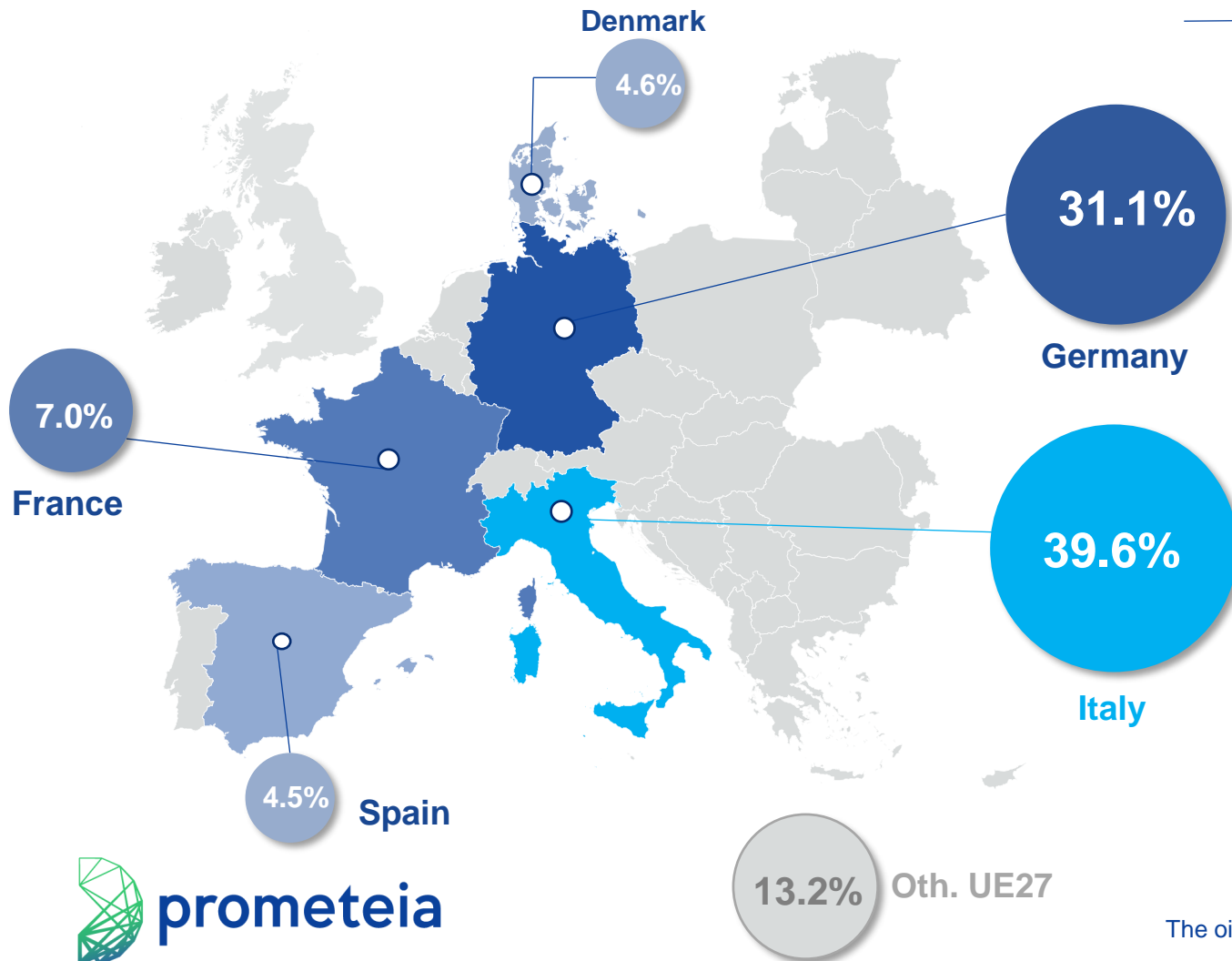
* Hydraulic valves, valves for food & beverage industry, valves for pharmaceutical industry, etc.

Source: Prometeia's calculation on ISTAT data and Companies balance sheets

The O&G valve industry in Europe

Italy is the European leading manufacturer of O&G valves (almost 40% of EU Tot. Production)

The main European production countries sold production value*
% share on total, €, average 2020, 2021, 2022



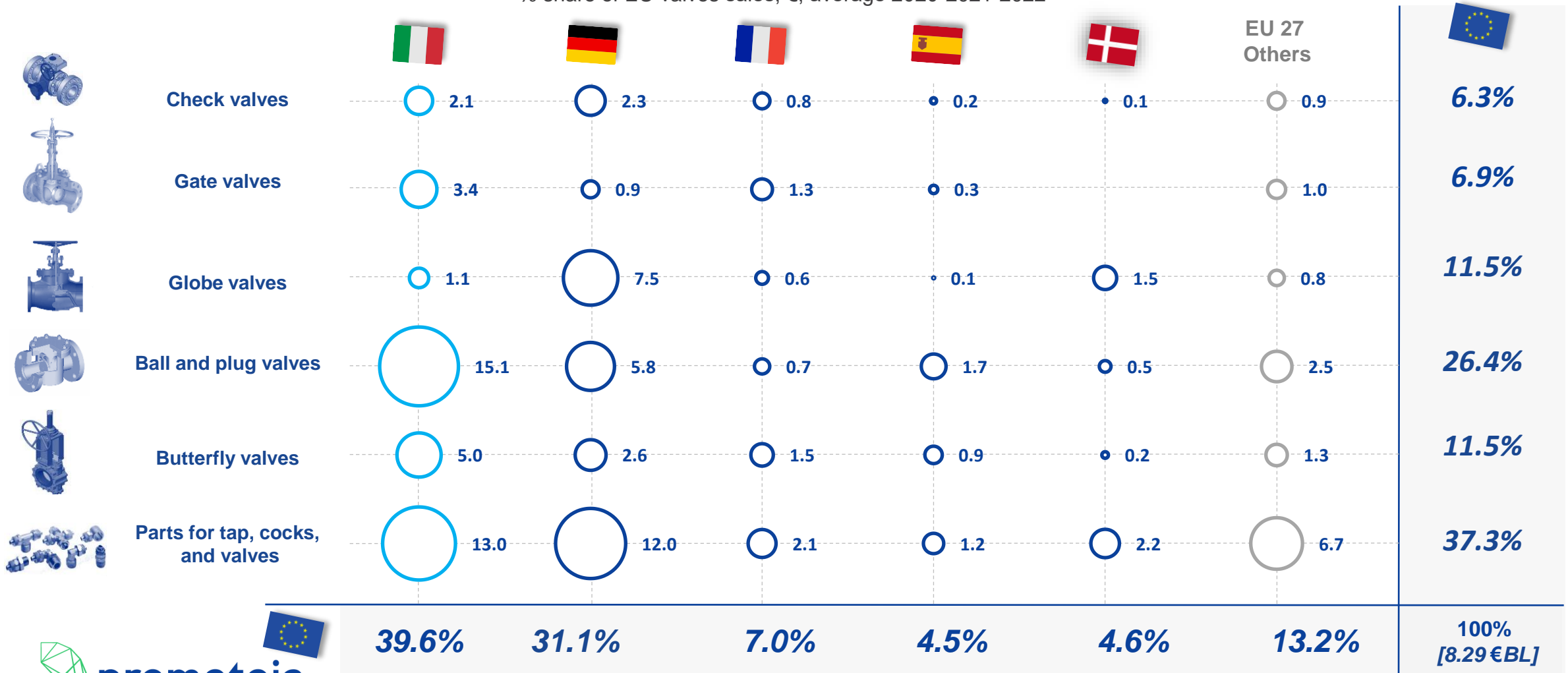
total UE27
8 € blns

* Production value generated at national production plants

EU27 valves production by type

Italy leads the markets of Ball and Plug, Butterfly & Gate valves and parts

Main European countries / sold production value by country and product*
 % share of EU valves sales, €, average 2020-2021-2022



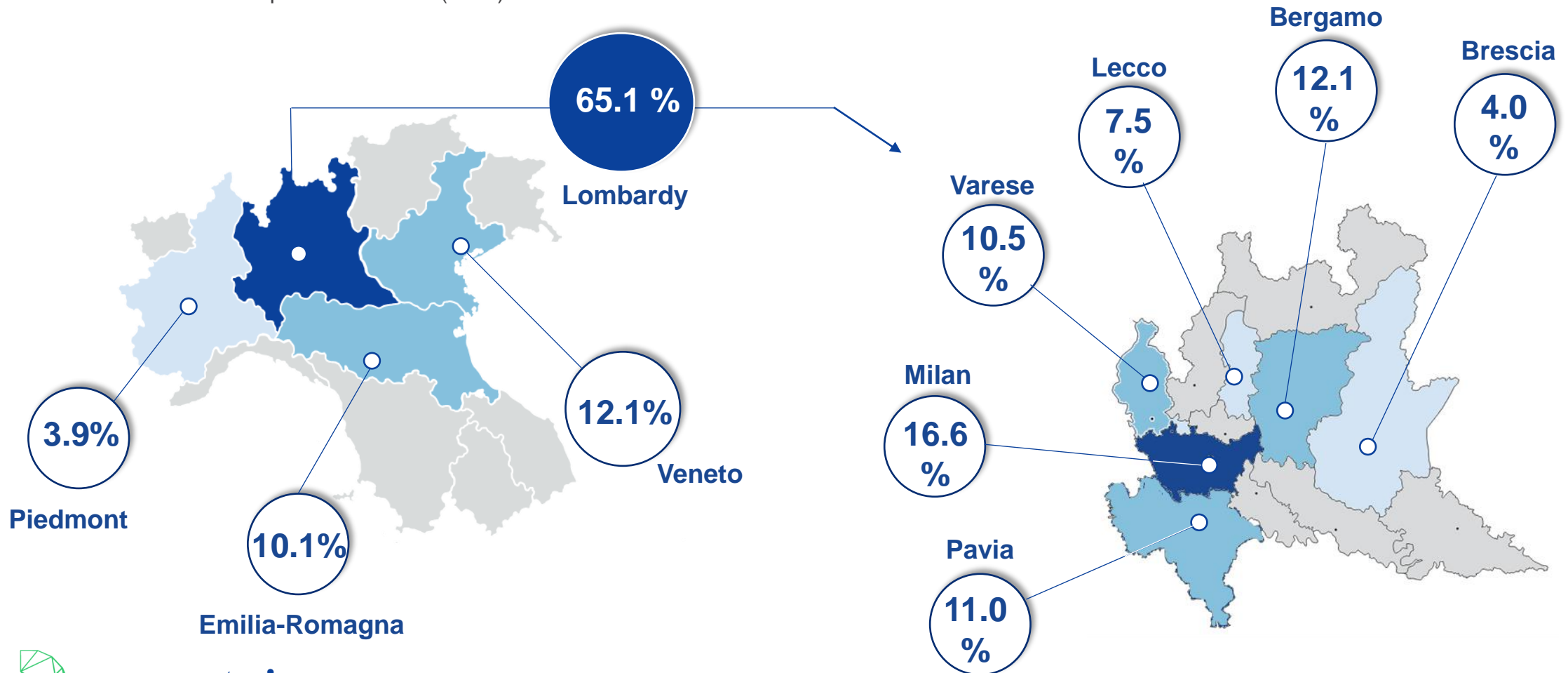
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The O&G valve industry in Italy

65%+ of Italian valves & components production is concentrated in Lombardy

The map of territorial specialization

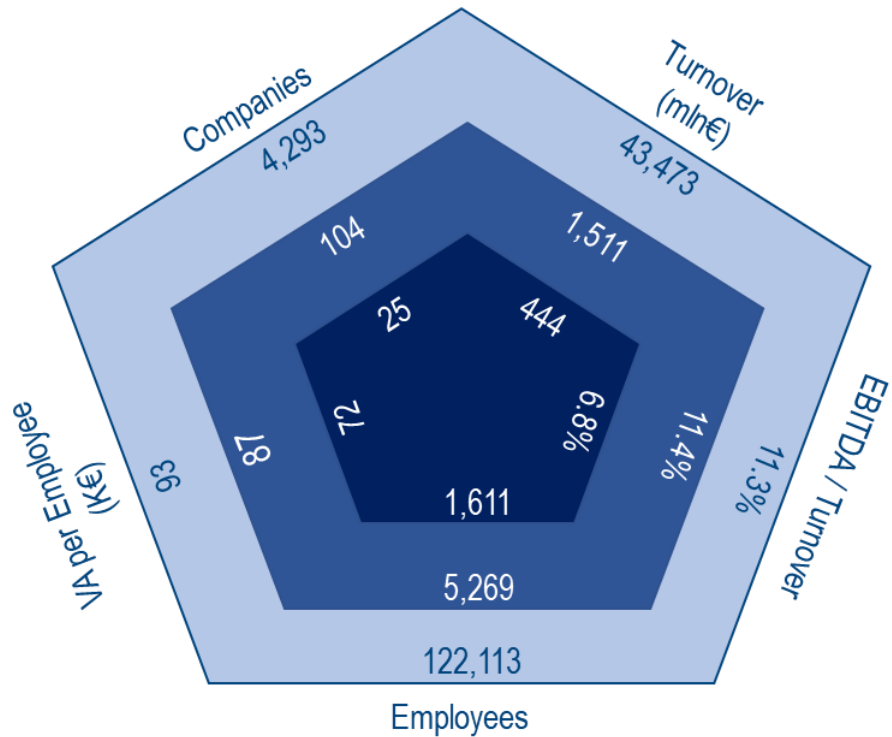
% share of the Italian production value (2022)



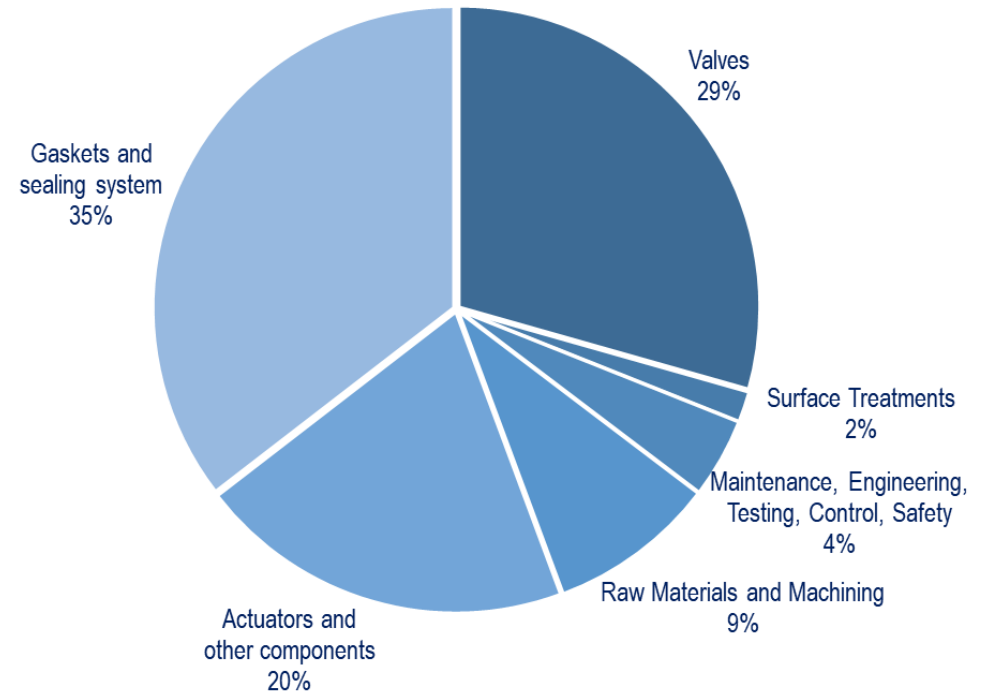
Oil&Gas Valves – A core Bergamo Industry

Valves manufacturers rely on a larger specialized supply chain

Structural indicators
2022



Main products in the Oil&Gas Valves Supply Chain
% turnover (2022)



◆ O&G Valves manufacturers ◆ O&G Valves specialized supply chain ◆ All sectors manufacturers

Source: Studi Confindustria Bergamo on BVD-AIDA data (May 2024)

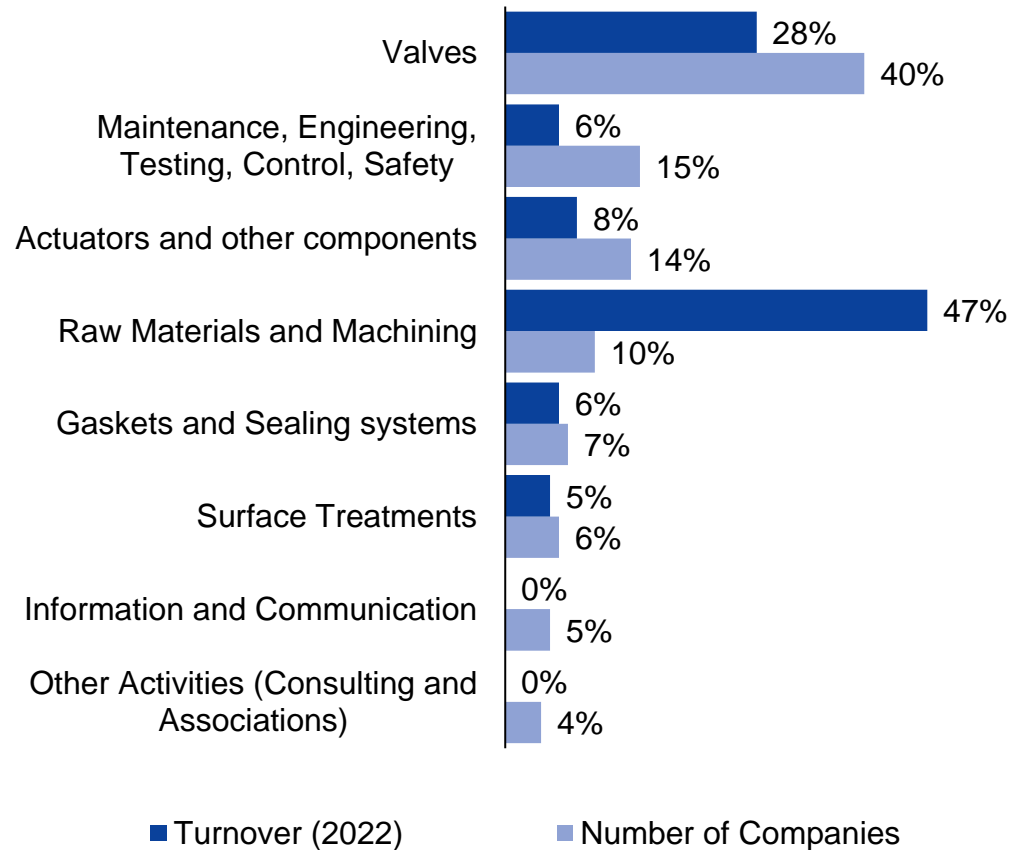
Source: Studi Confindustria Bergamo on BVD-AIDA data (May 2024)



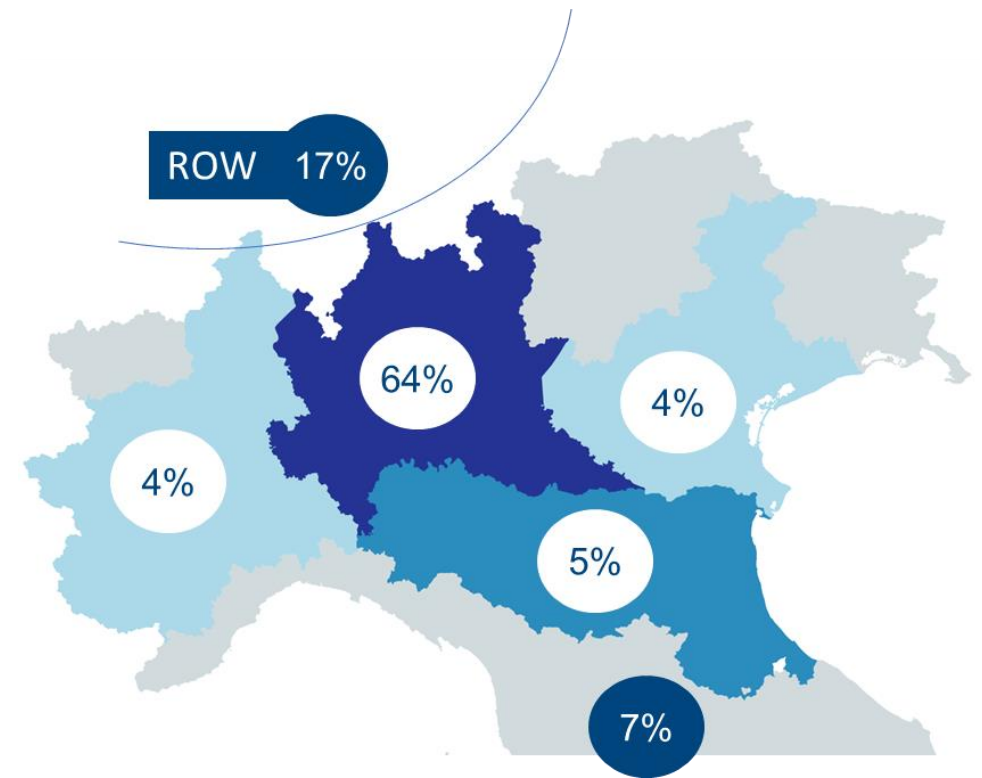
Industrial Valve Summit 2024

Exhibitors' Profile

Exhibitors by main product
% of total



Exhibitors	2017	2019	2022	2024
Number	195	242	280	325
Turnover (€ blns)*	4.6	5.2	5.9	10.8



*Based on the most recent balance sheet available

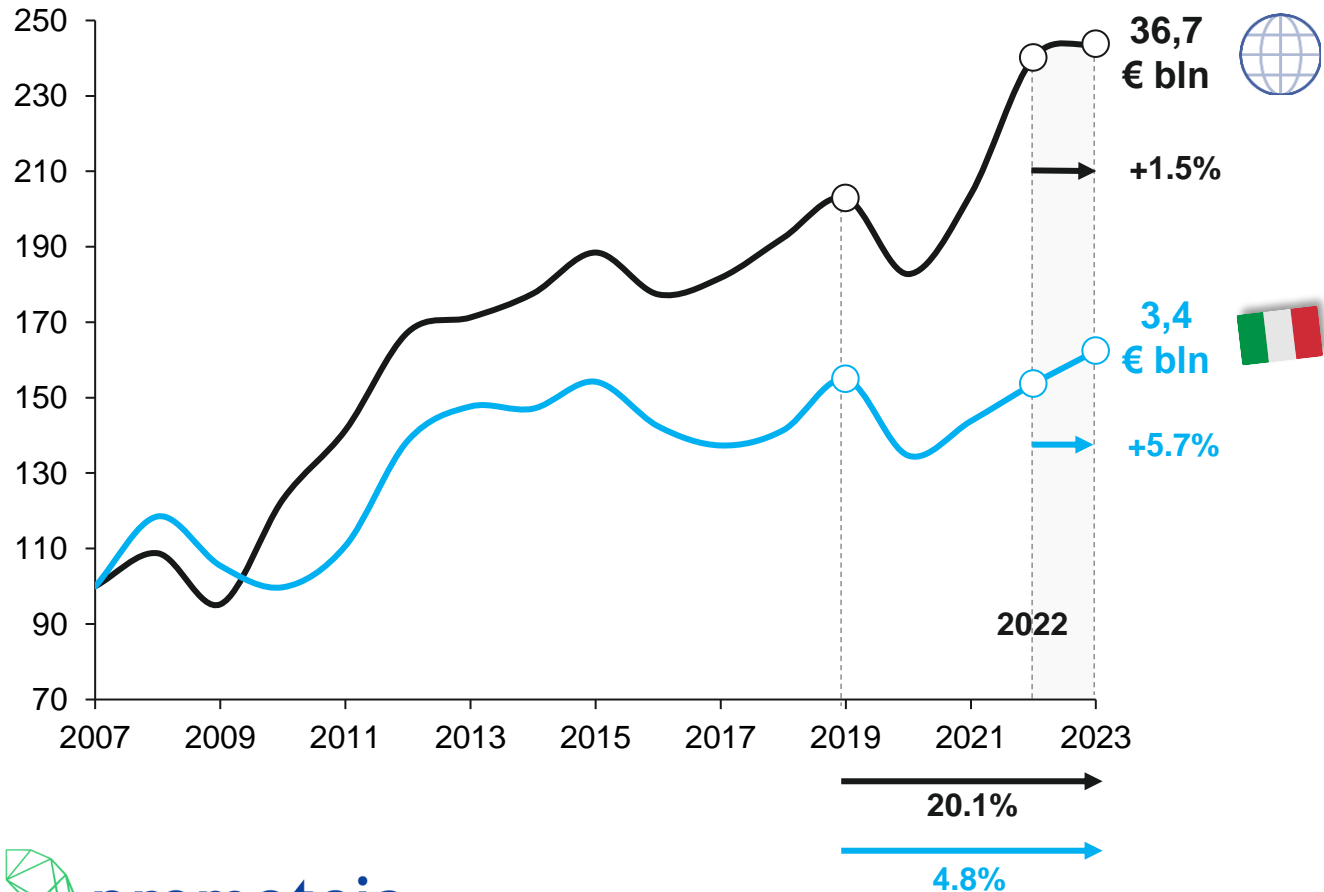


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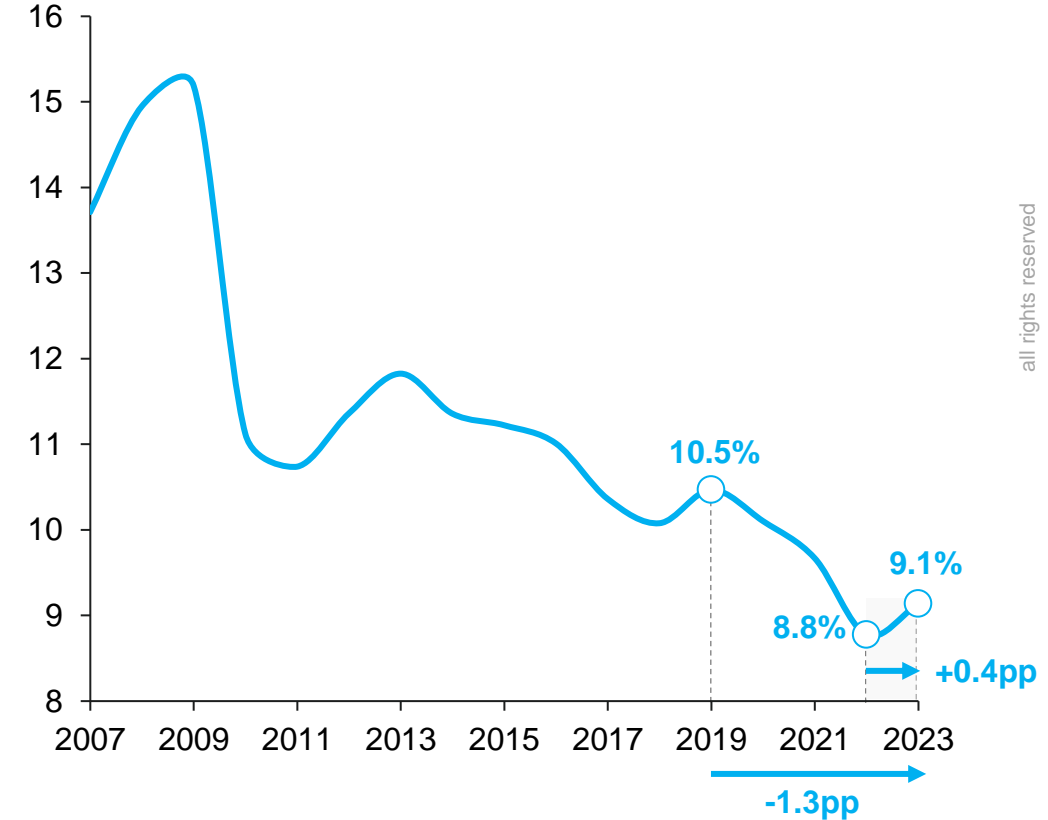
Italy in O&G valves global trade (1/6)

Italian exports soared in 2023 (+5.7%) outpacing both global trade (+1.5%) and Post-Pandemic Growth rates

World imports and Italian exports of O&G valves
2007=100, €



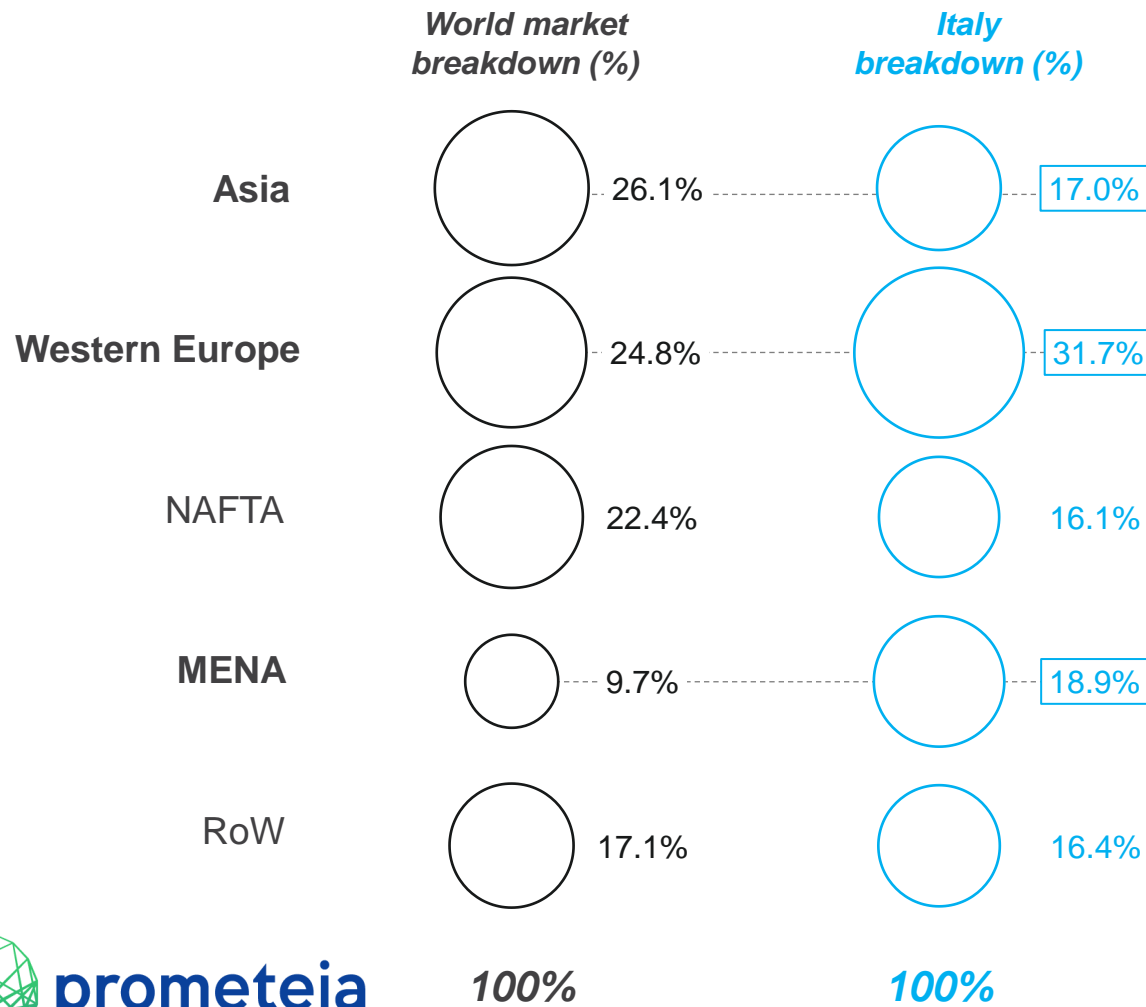
Italy's share of World O&G valves market
ITA export as % of World imports, €



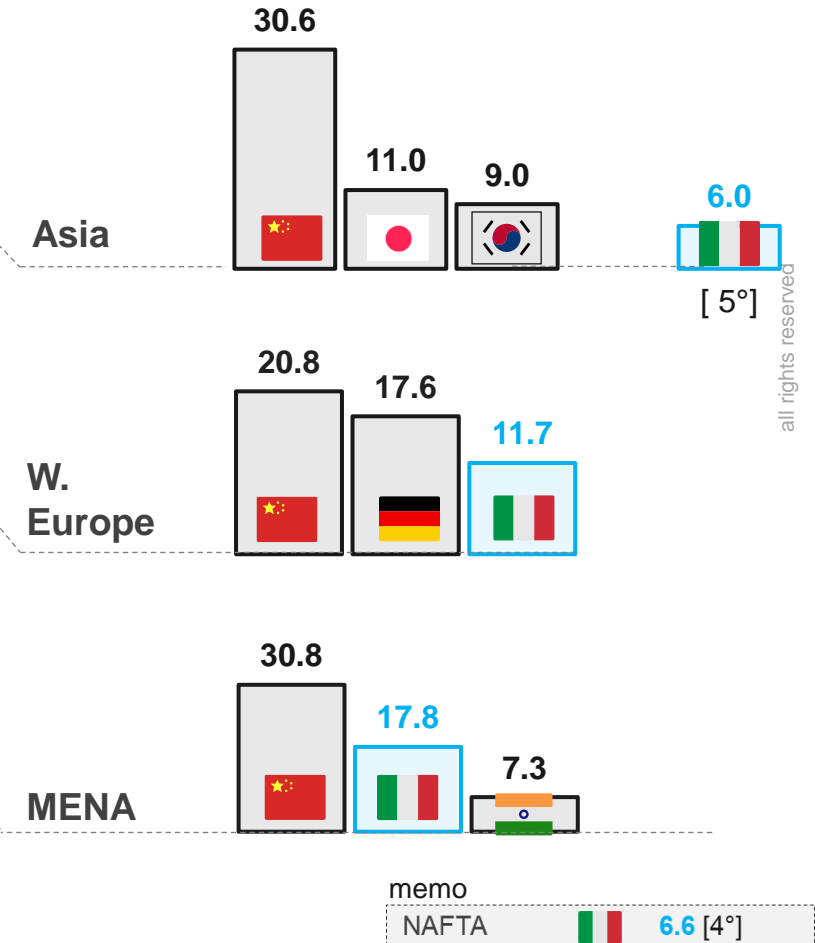
Italy in O&G valves global trade (2/6)

Italian Valves: 31.7% targeted at Western Europe, MENA and Asia each account 1/5 to total overseas sales

Geographic Framework of O&G valves sales (in €, 2023)



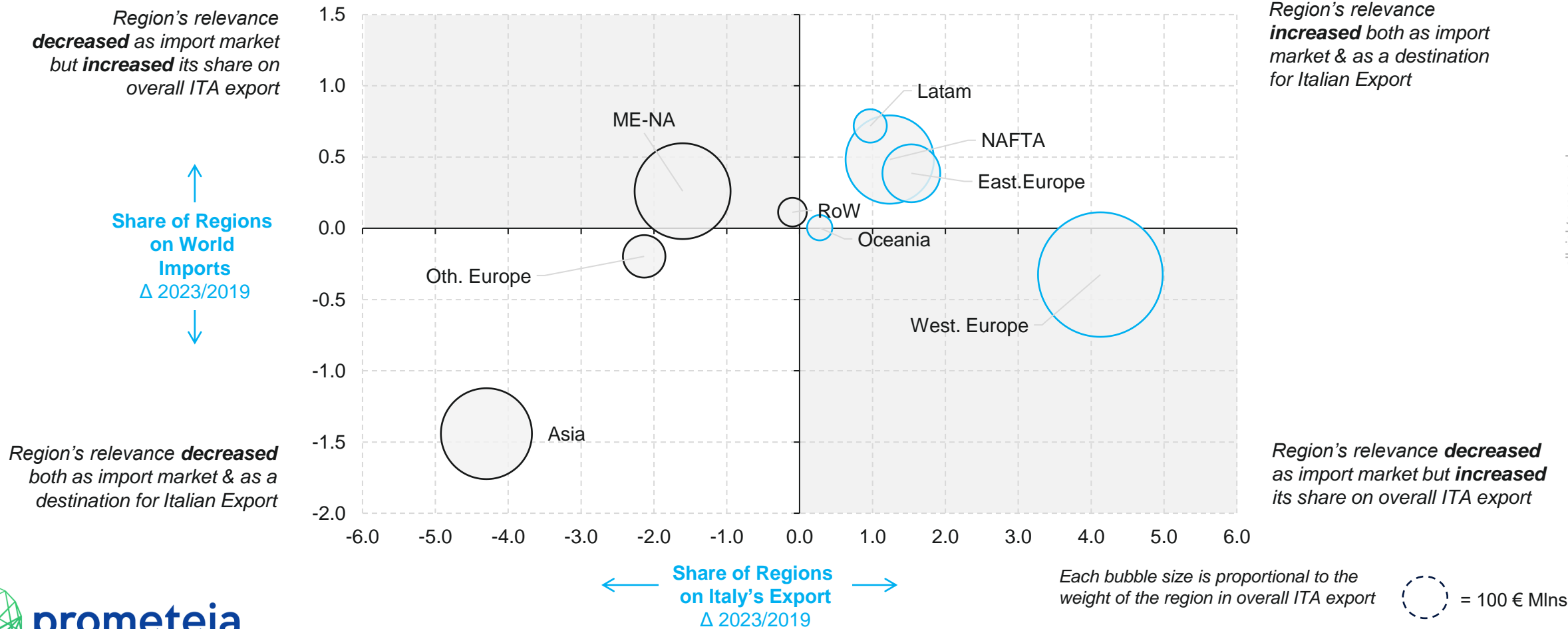
Top exporters in selected regions (mkt. share, €, 2023)



Italy in O&G valves global trade (3/6)

The global O&G valves market pendulum shifted towards Latam / NAFTA / MENA in the post pandemic...
 ... “leaving behind” two top destinations (Asia & West. Europe) for ITA export

Geographic Framework of O&G valves sales in the post pandemic (2019-2023)
 World Regions and Italian export breakdown, Δ points of share



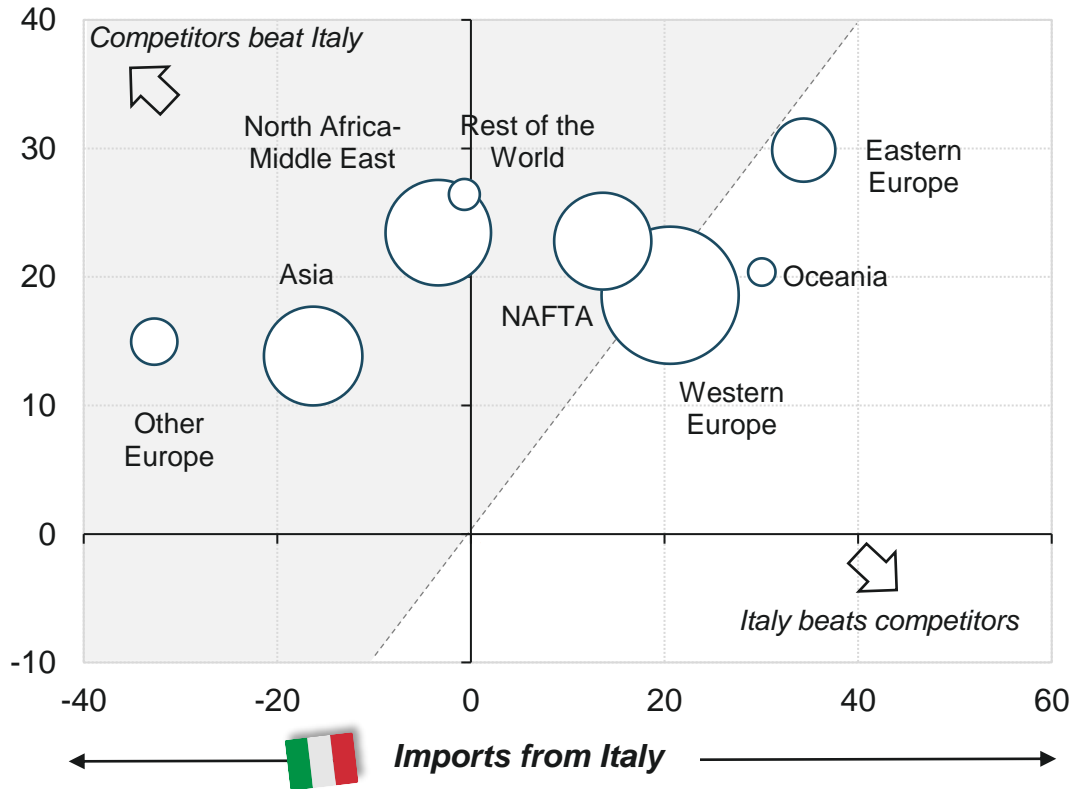
Italy in O&G valves global trade (4/6)

Italy outperformed most of its competitors in 2023, gaining position in MENA and Asia markets ...

... and (partially) regaining lost ground from the past 5 years

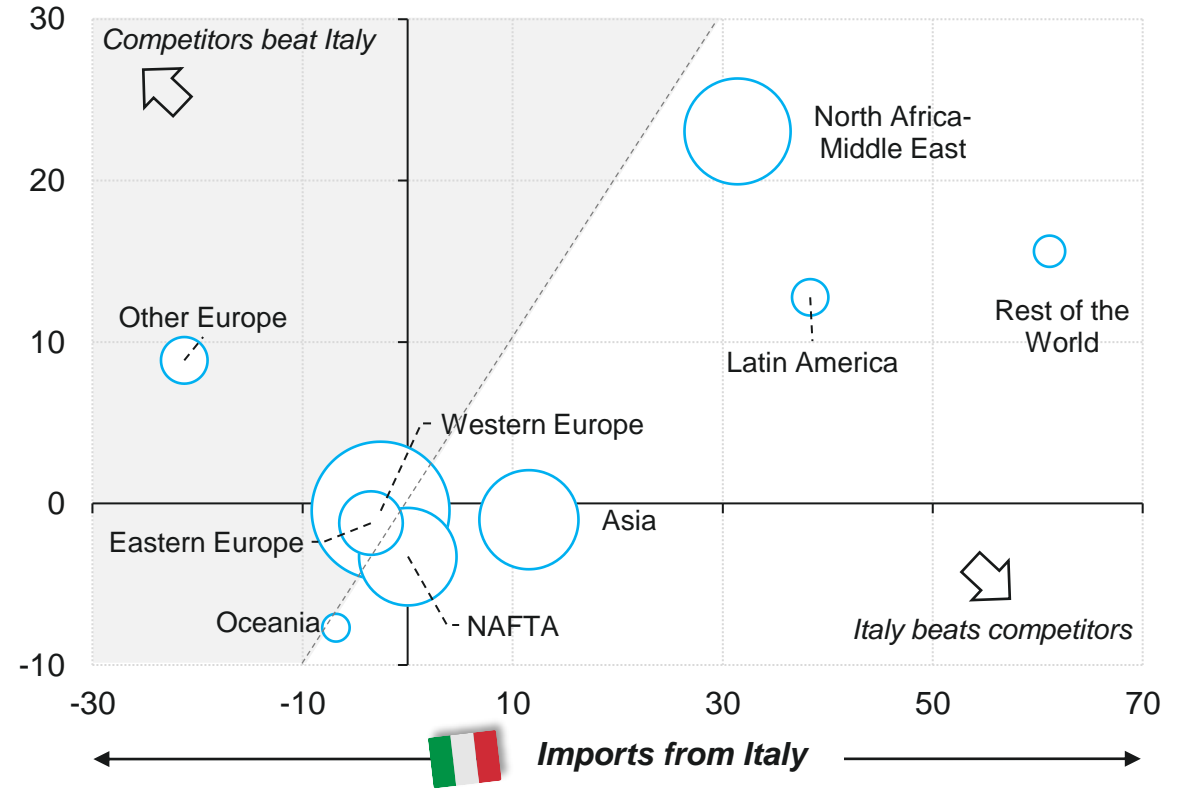
World imports and Italian exports in the post pandemic (2019-2023)

Imports from Italy and from the World, 2023 / 2019 % chg. (€)



World imports and Italian exports in 2023

Imports from Italy and from the World, 2023 / 2022 % chg. (€)



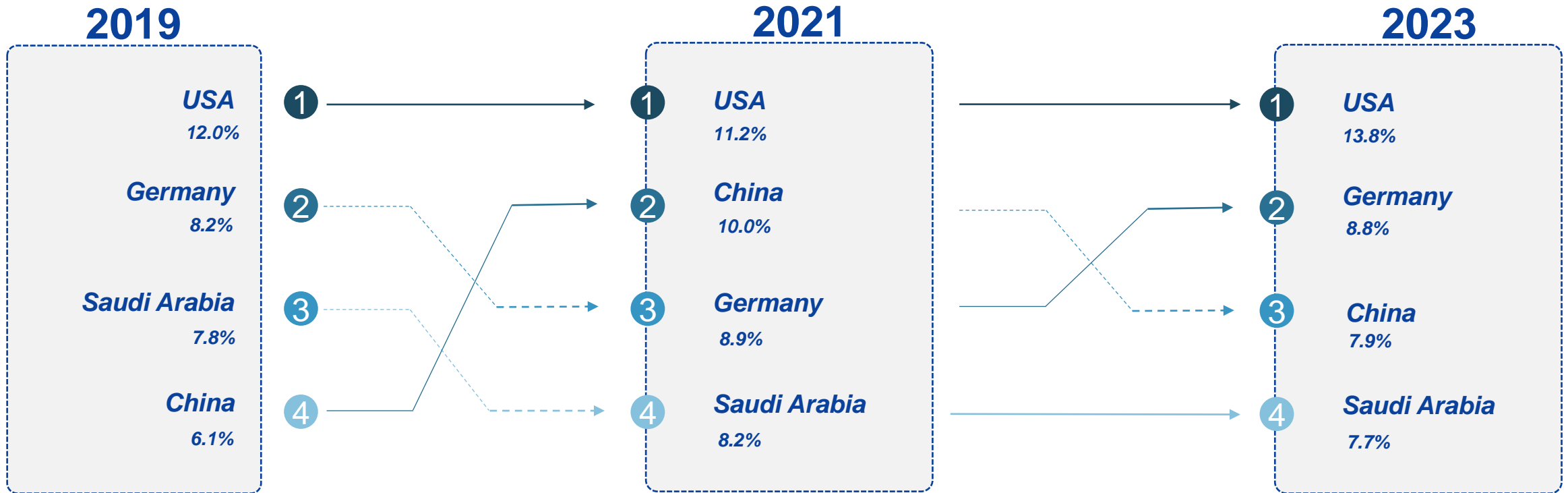
Each bubble size is proportional to the weight of the region in overall ITA export = 250 € Mlns



Italy in O&G valves global trade (5/6)

United States crystallized its position at the top of the ranking of major destinations for ITA O&G Valves...
 ... followed by Germany (8.8%), which surpassed China (7.9%)

Italian O&G Valves export: geographical breakdown
 in €, ranking and mkt share



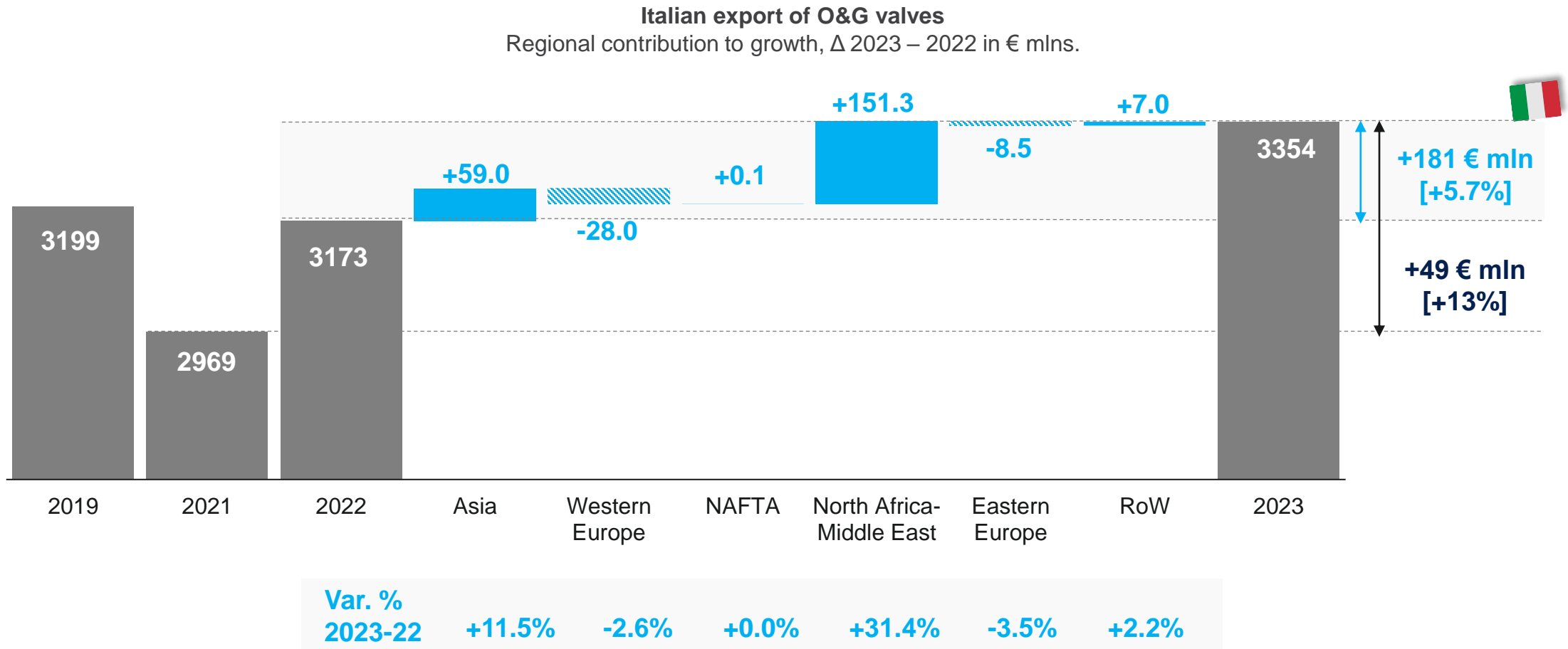
The top 4 markets account in 2023 for **38.5%** of Italian export value, in line with the results of 2021...

...and still almost 5 p.c. above the share registered in 2019 (**34.1%**)



Italy in O&G valves global trade (6/6)

Mostly driven by Asian and MENA market Italian O&G Valve Exports surged 5.7% (+181 € millions) in 2023



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Italy O&G valves vs. competitors (1/2)

Export ITA (%)

of countries

In 2023 Italian exports growth matched its competitors in 19 markets, beating them in 41 markets / 100



Italian O&G Valves export*
2022/2023 growth, in €

Markets* (import % growth 2022/2023, in €)	better		in line		worse		total	
	Hi-growing (>10%)	14	16.8	5	3.9	15	5.3	34
Growing (>0% <10%)	8	4.7	3	4.5	10	13.9	20	23.1
Declining (<0% >10%)	10	15.5	9	29.1	9	1.9	28	46.5
Dropping (<-10%)	9	2.9	2	0.4	6	1.0	18	4.4
total	41	40.0	19	37.9	40	22.2	100	100

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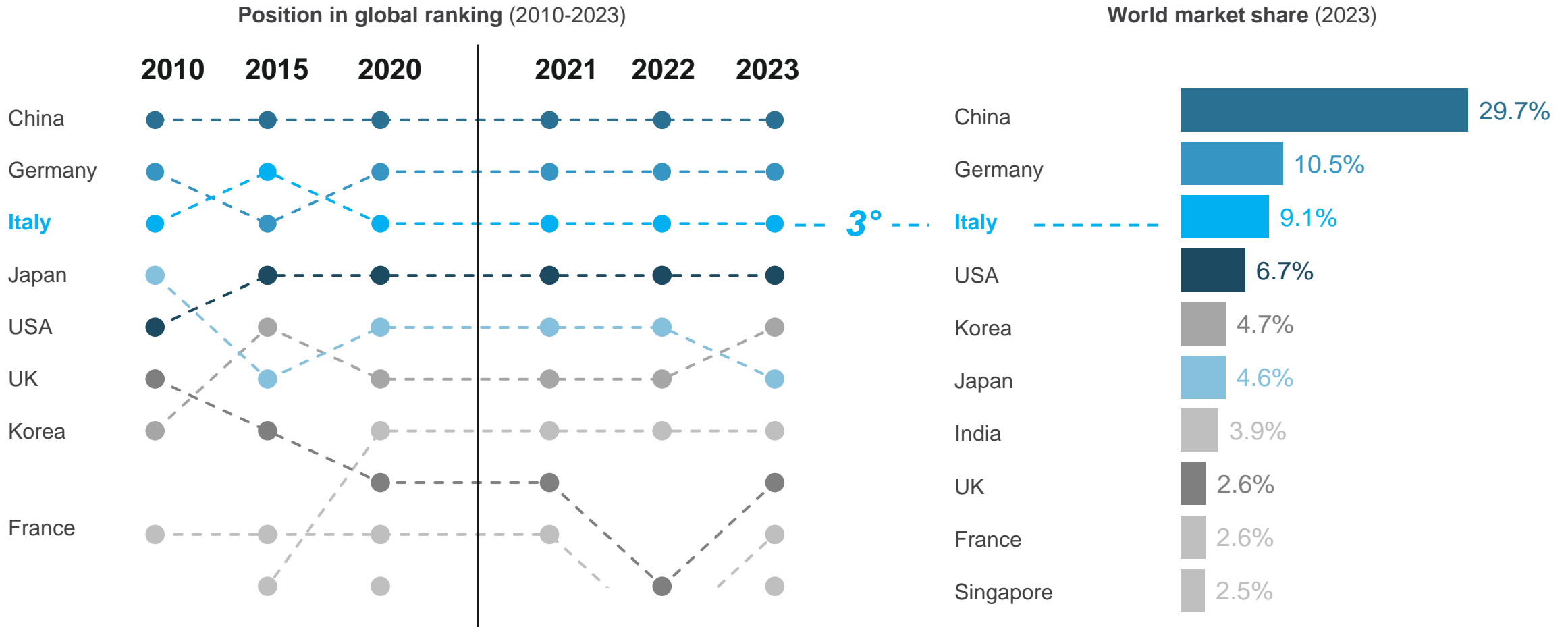
*top 100 countries



Italy O&G valves vs. competitors (2/2)

Italy places third in the export global ranking, at a short distance from Germany (and well behind China)

World top-10 exporters of O&G valves (€)

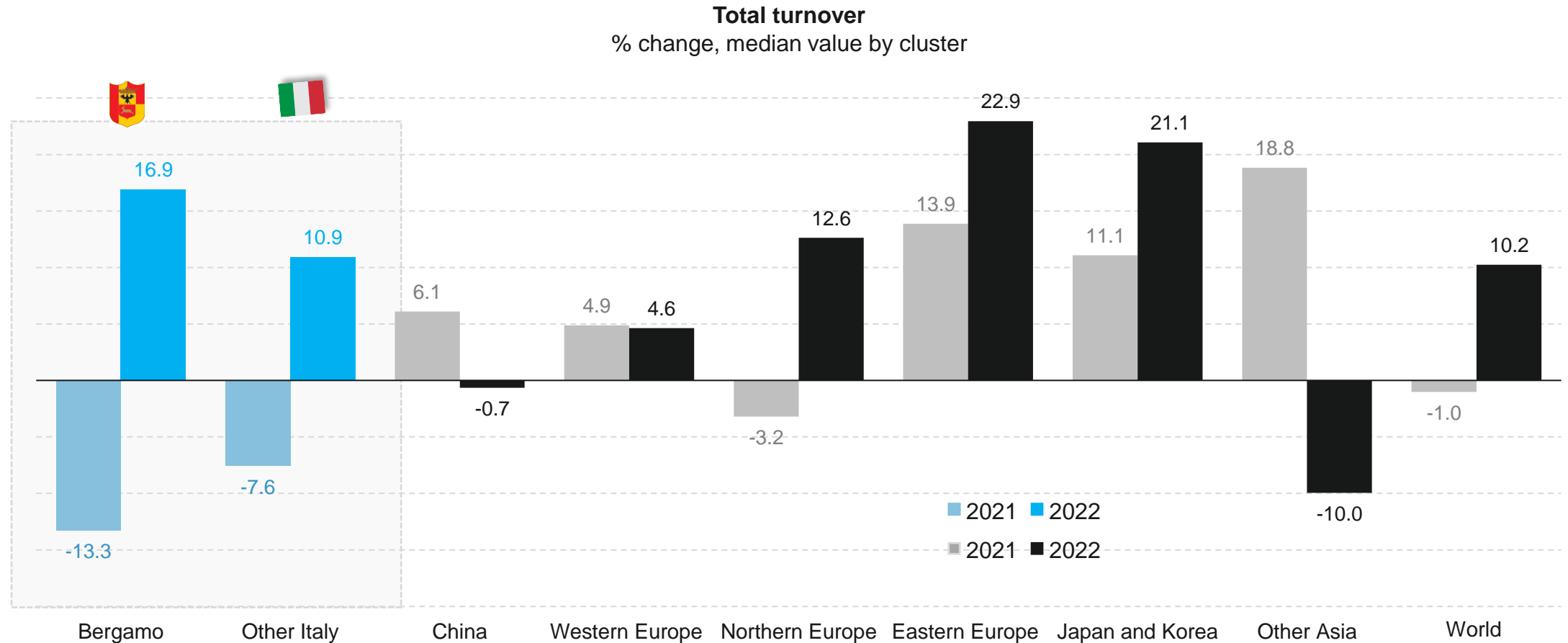


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Growth Performance of the O&G Valves Industry in 2022

Bergamo's valves industry rebounded from 2021 fall...

... with overall turnover rising more than Italian (and World) average



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Source: Prometeia's calculation on balance sheet of a sample of 148 firms for a production value of 6.3 € blns in 2022



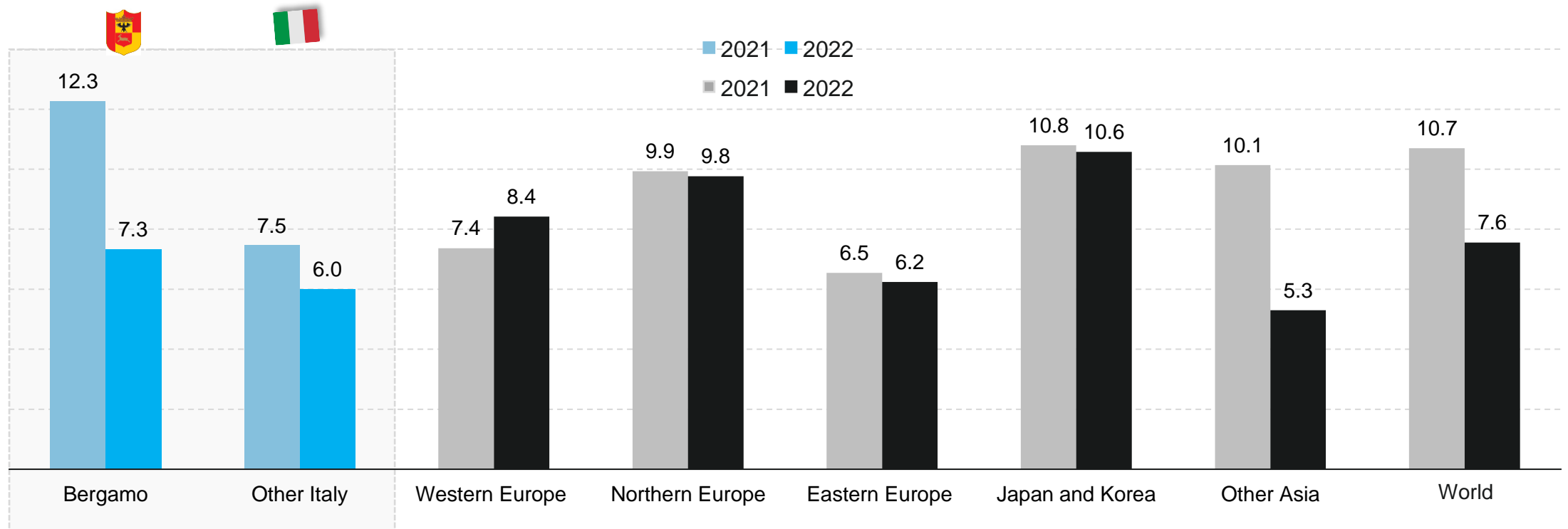
Financial Performance of the O&G Valves Industry in 2022

Following an exceptional 2021, Bergamo valves cluster experienced a loss in margins ...

... which aligned with other Italy (and World) average

Financial Performance

EBITDA margin (% share on total turnover), median value by cluster



Note: China is missing due to the lack of data availability

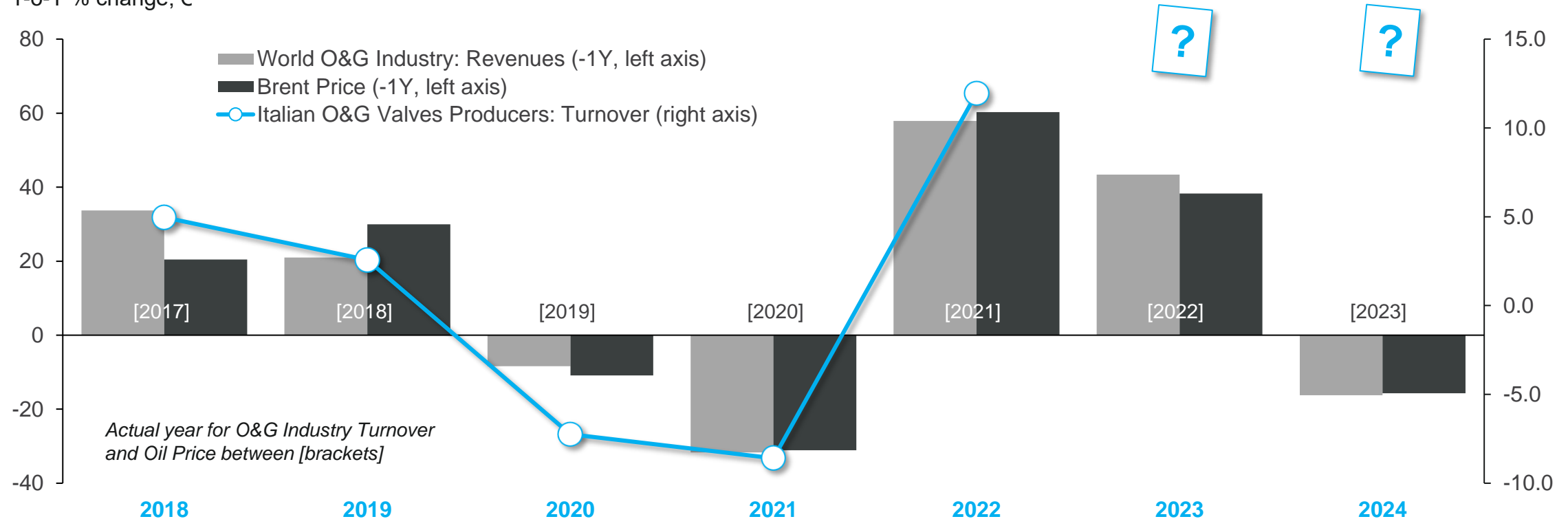
Source: Prometeia's calculation on balance sheet of a sample of 148 firms for a production value of 6.3 € blns in 2022

What's next? O&G Industry Revenues, Oil price & ... Valves Turnover

Recovery path should have confirmed in 2023. Some uncertainties persist as we move into 2024

Italian O&G Industry Turnover compared to O&G Industry Revenues and Oil price (Y-1)

Y-o-Y % change, €



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Revenues within the Oil & Gas Valves (O&GV) industry demonstrates a rather robust correlation with the lagged value of Oil & Gas Upstream industry revenues and, more broadly, with crude oil prices. In other words, **an increase in crude oil prices in year T usually drives an uptick in in O&GV in the subsequent period (T+1) and vice versa**. Not surprisingly, the 2021 surge in oil price took one year to shift in the O&GV industry balance sheets. The outlook for 2023 looks promising, as the O&GV industry will likely benefit from the further rise in Oil price observed in 2022. However, uncertainties persist as we move into 2024



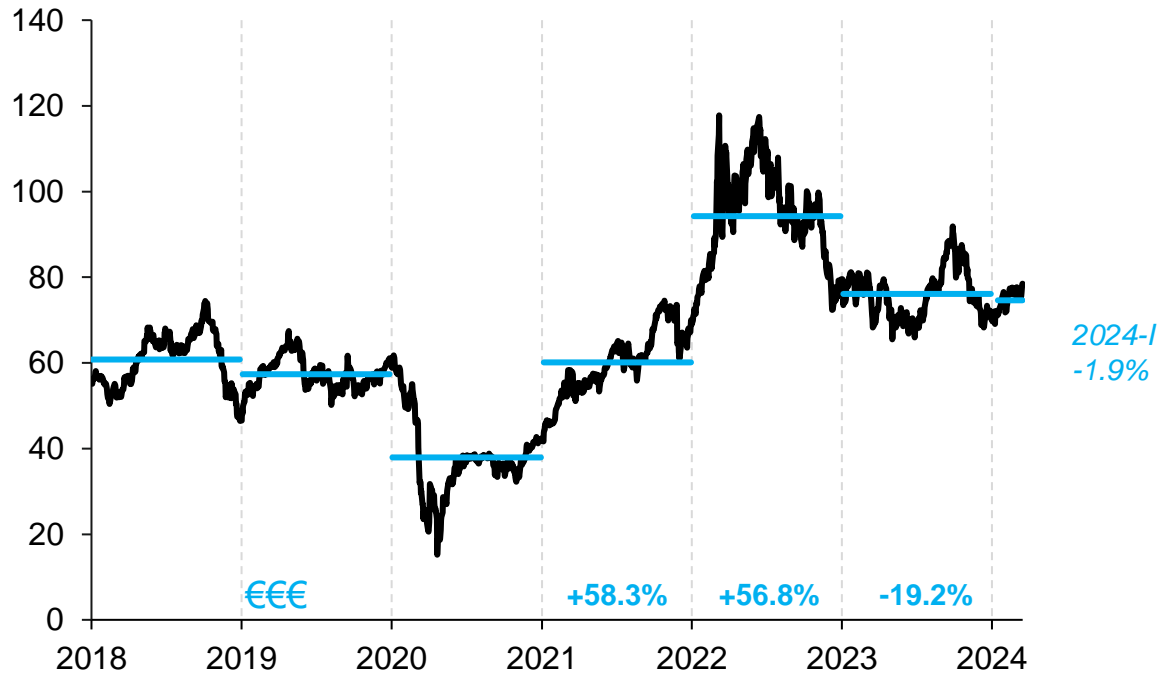
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2023 in O&G | a brief review (1/3): energy prices developments

Prices retrenched from 2022 height, though they still hold at high levels, compared to pre-pandemic

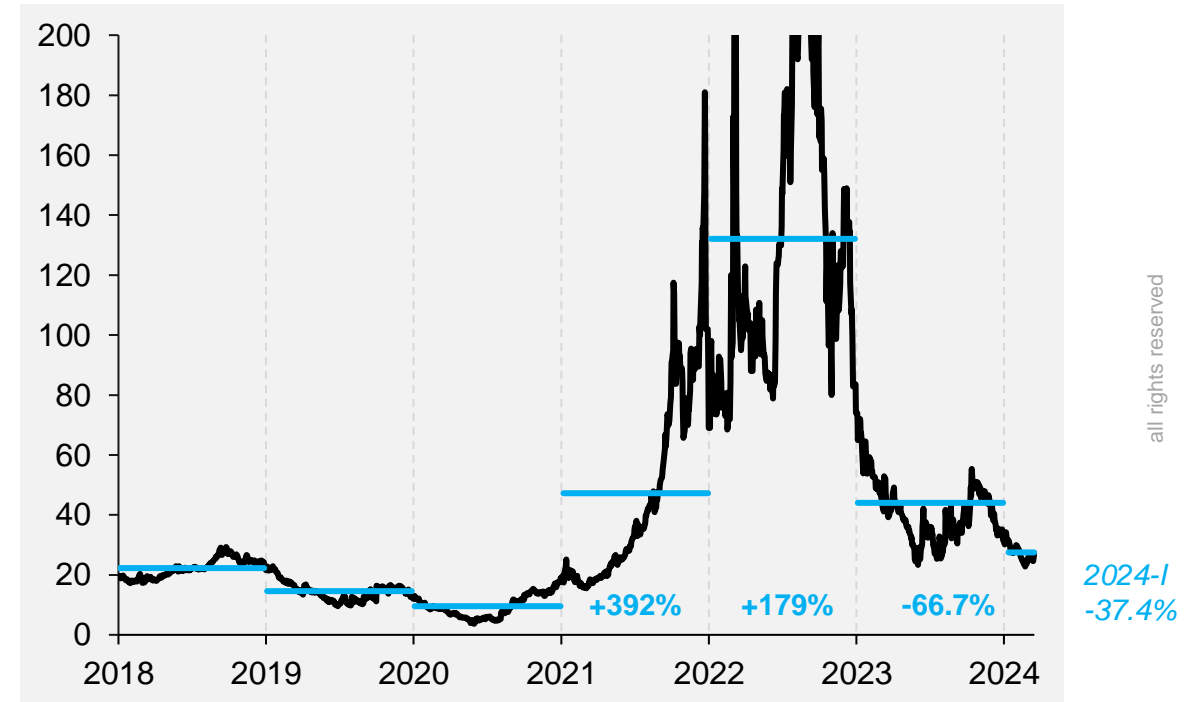
Crude Oil, Brent

Month ahead, daily quotes and yearly averages, €/bbl



Natural Gas, Title Transfer Facility (TTF)

Month ahead, daily quotes and yearly averages, €/bbl



Oil price have been under downward pressure in 2023, losing almost 20% on \$ basis, amid weakening global economic activity, record output from the United States, and steady exports from Russia. Those factors offset the impact of **rising geopolitical risk** and **lower production from OPEC+**. **Global gas markets saw an adjustment towards equilibrium**. Decreased gas demand in Europe and established markets in Asia tempered the effects of the 2021-'22 supply disruption. Although **prices notably declined throughout 2023**, they ended the year on considerably higher levels than those observed in 2019.

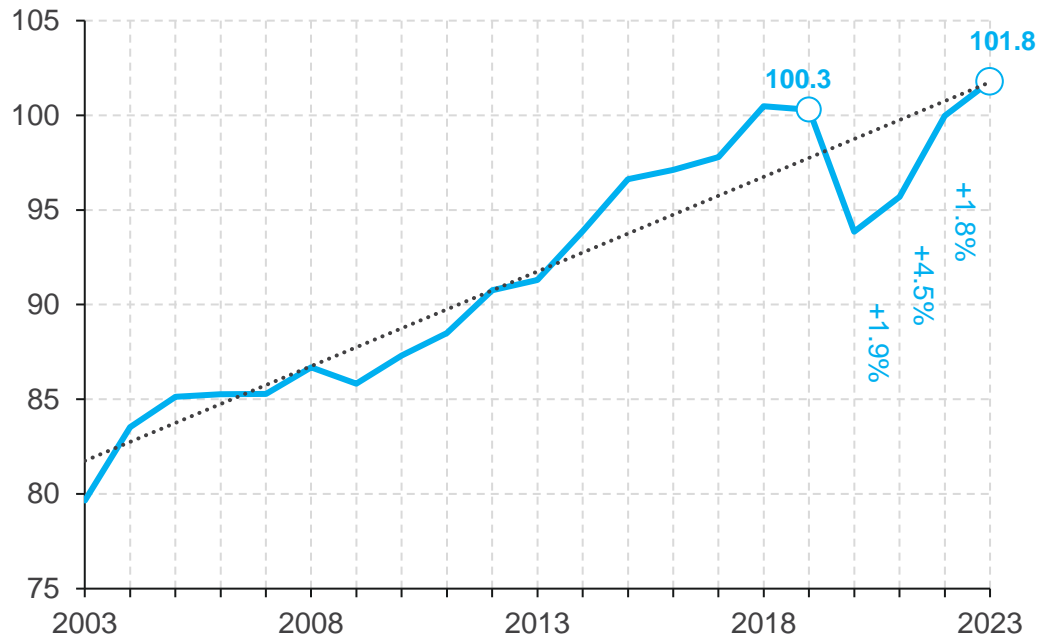


Prometeia calculation on Eikon, ICE, EEX data

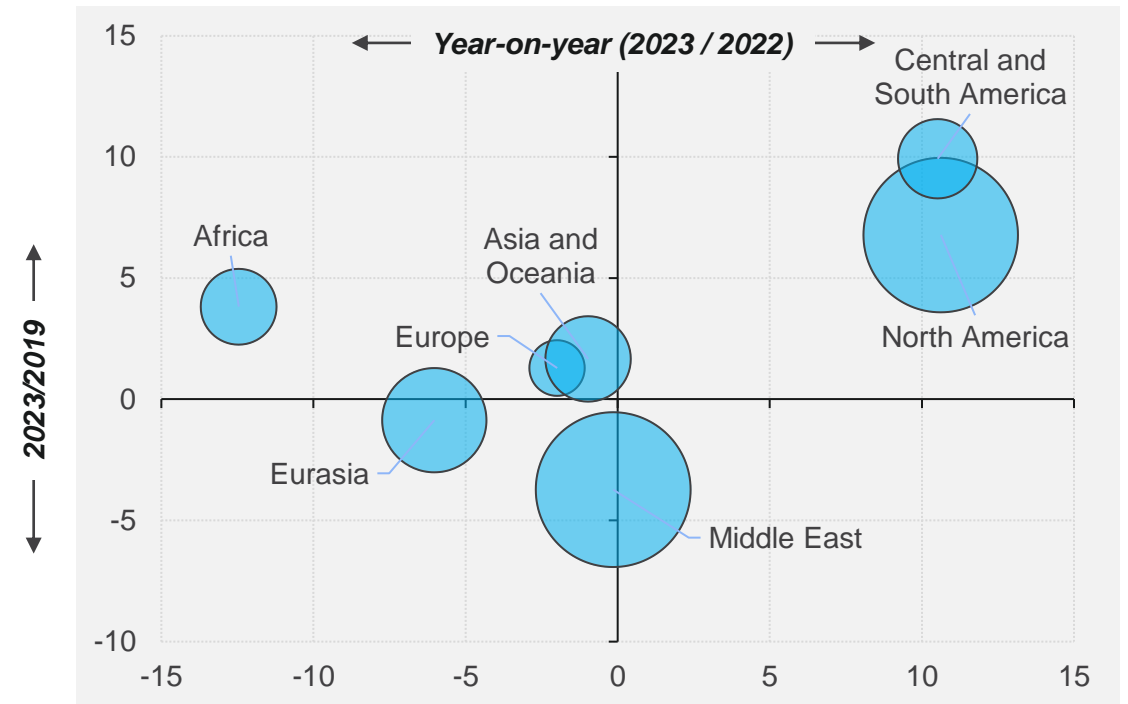
2023 in O&G | a brief review (2/3): oil production developments

Reductions in OPEC+ production have been roughly compensated by output increases in Americas

World Oil production
% change and volumes



World Oil production 2023 (regional breakdown)
% change and volumes (bubble size)



After the steep decline which followed the COVID-19 pandemic, **World oil production increased above the pre-pandemic in 2023** at approx. 102 million barrels per day (+1.8% y-o-y), as **OPEC+ voluntary production cuts have been offset by supply growth outside of OPEC+**. **U.S. crude oil production indeed established a record high in late 2023** at more than 13.3 million b/d, cementing the **America's position as the world's leading oil producer**. Latin America oil production as well posted a double-digit y-o-y growth, on higher output from Brazil, Venezuela.



Prometeia calculation on EIA, IEA data

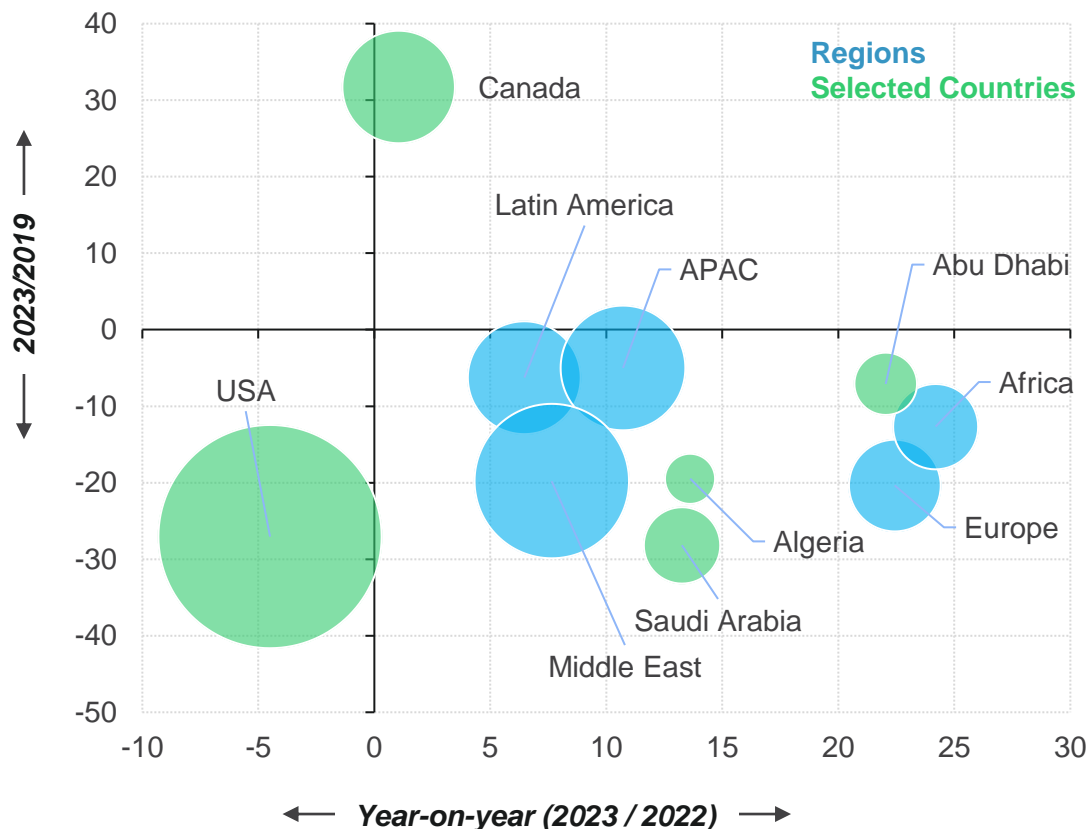
2023 in O&G | a brief review (3/3): insights from the drilling stats.

Most basins experienced a recovery in drilling activity in 2023...

... albeit the overall number of active rigs have not yet realigned to pre-pandemic

World Oil Drilling Activity, 2023

% change in number of active rigs, regions + selected countries



“Active rigs” are drilling rigs currently in operation and engaged in the extraction of oil or natural gas. Hence, they could be considered as a proxy for the level of industry activity and, by extension, the health of the oil and gas exploration and production sector.

After a double-digit rebound observed throughout 2022 (+28%), **the recovery of drilling activity continued into 2023, albeit at a slower pace (+4%).** The highest y-o-y growth rates have been recorded in Europe (+22%) and Africa (+24%). Nonetheless, overall **active rigs remains below, compared to 2019 levels, in every region.**

Due to the peculiar nature of the shale industry (characterized by a faster depletion rate of its reservoirs) the United States hosts the large majority of active rigs. Starting from 2018, the US oil industry faced pressure to prioritize shareholder returns and profitability, leading to cost-cutting measures and a renewed focus on efficiency.

Key Takeaway efficiency & productivity gains enabled the US O&G industry to **boost oil production to levels exceeding those seen in 2019... despite operating with significantly fewer rigs.** Oil drilling activities in other regions **extended the recovery process in place since 2021, although the pre-pandemic levels has yet to be matched.**



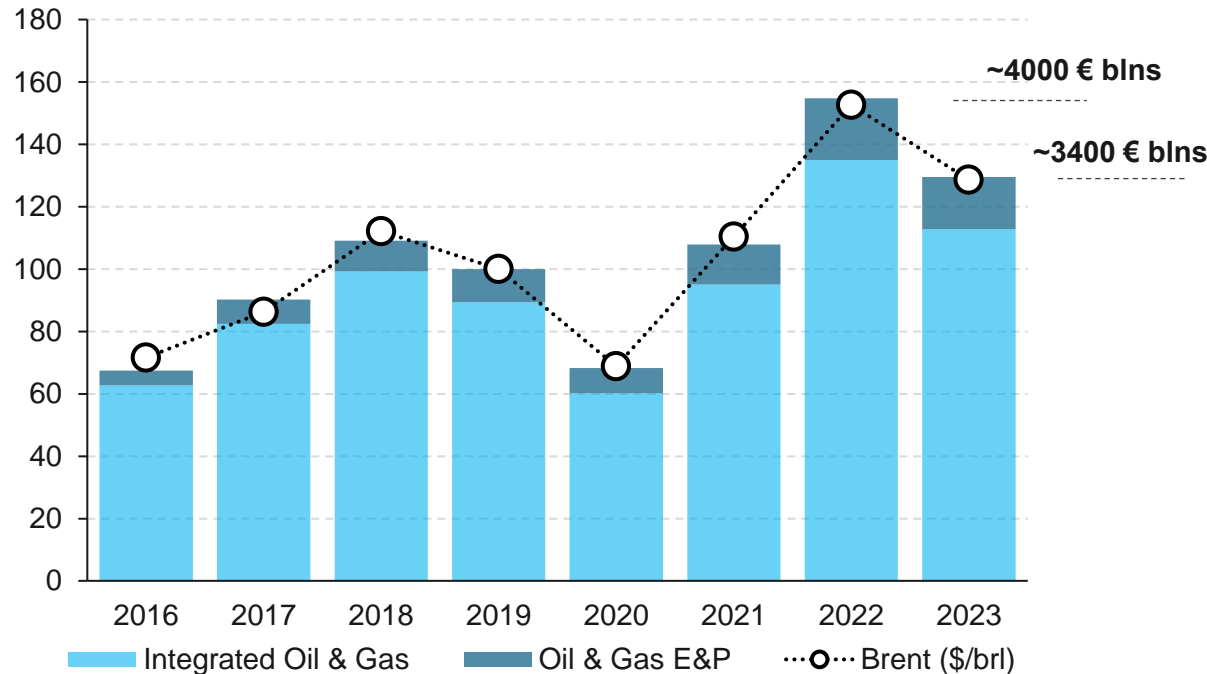
Prometeia calculation on Baker Hughes data

2023 | Int.nal Upstream companies revenues decreased on lower O&G prices

Sample* Revenues Decrease by €600 Billion from 2022 peak, EBITDA Margin still ~5 p.p. above 2019

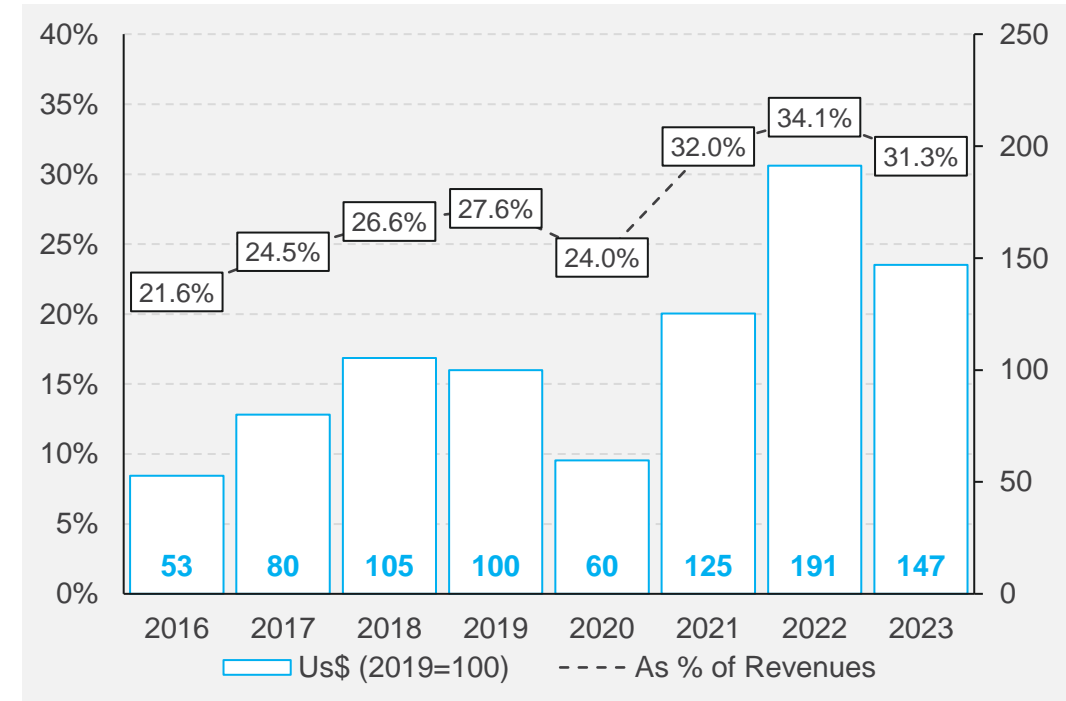
Top O&G upstream companies*: revenues + oil price

Integrated O&G + O&G E&P, 2019=100, in \$



Top O&G upstream companies*: EBITDA

Integrated O&G + O&G E&P



Oil companies, above all those involved in upstream exploration and production, generate revenue by selling crude oil and natural gas: not surprisingly, **the 15.7% decline in oil prices observed in 2023 led to a similar (-16.2%) decline of O&G Upstream revenues and** (also due to the rising labor expenses and materials costs) **a more pronounced decline of margins (-23%). Nevertheless, the EBITDA margin remained robust at 31.3%, almost 5 p.c. points above the 2019 levels.**



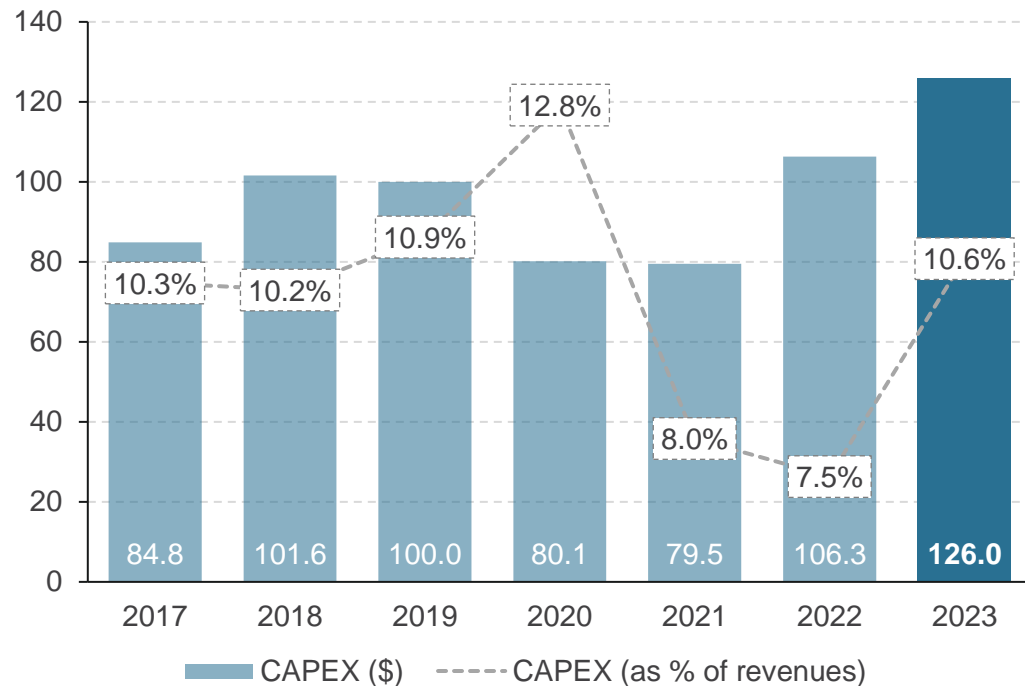
* Top 32 Integrated companies + Top 89 E&P companies
Prometeia calculations on balance sheet data

2023 | Revenues fall did not prevent an increase in CAPEX

O&G Upstream cap. expenditure at +19% y-o-y (... but broadly in line with pre-pandemic as % of revenues)

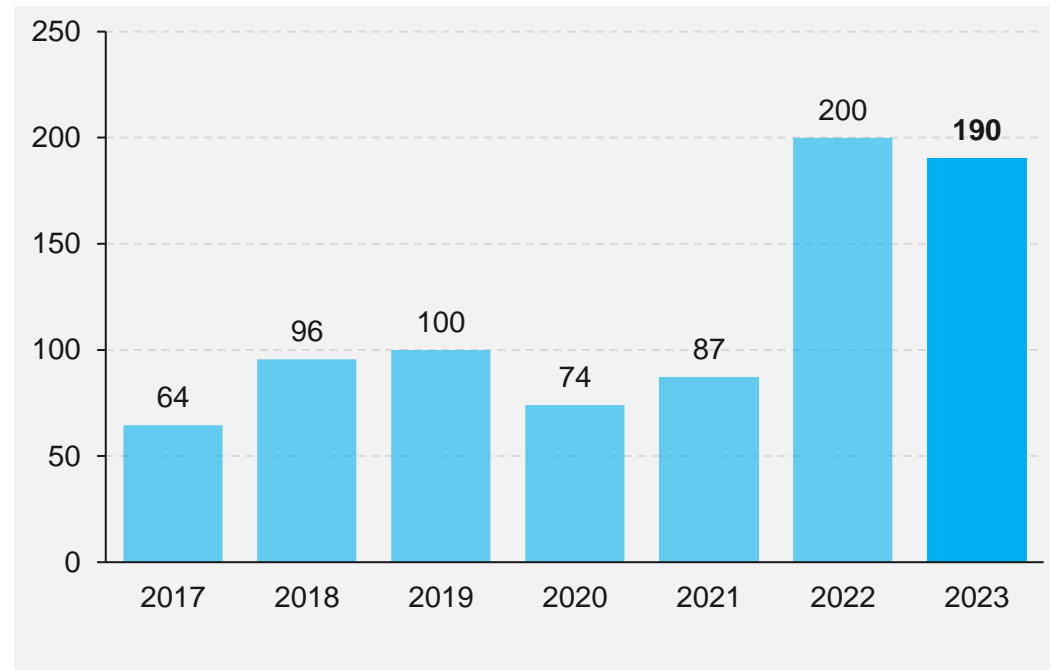
Top O&G upstream companies*: CAPEX

in \$, 2019=100



Top O&G upstream companies*: payout (dividends + buybacks)

in \$, 2019=100 (subselection)



Oil and gas upstream companies **raised capital expenditures by approx. 19% in 2023**, mostly on higher activity (and rising materials & labour costs). However, as % of revenues, **Upstream CAPEX resulted broadly in line with pre-pandemic ... as O&G companies rewarded shareholders with record payouts** (and payed past debts). The O&G industry has faced persistent predictions of decline in the last decade: unsurprisingly, O&G boards went on persuading shareholders to look for immediate returns (dividends, buybacks), rather than convincing them to look for future growth (investments).



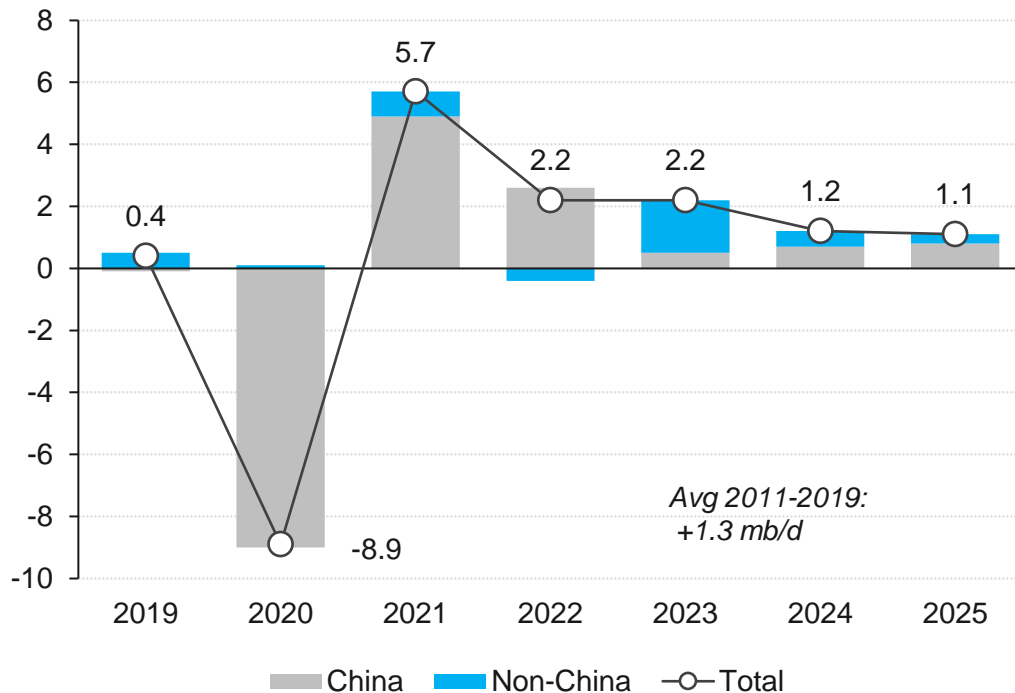
* 32 Integrated companies + 89 E&P companies
Prometeia calculation on balance sheet data

Beyond 2023 | The *short-term* outlook for O&G investments (1/2)

Even in face of decelerating demand, high O&G prices should be supportive for investments in 2024-'25

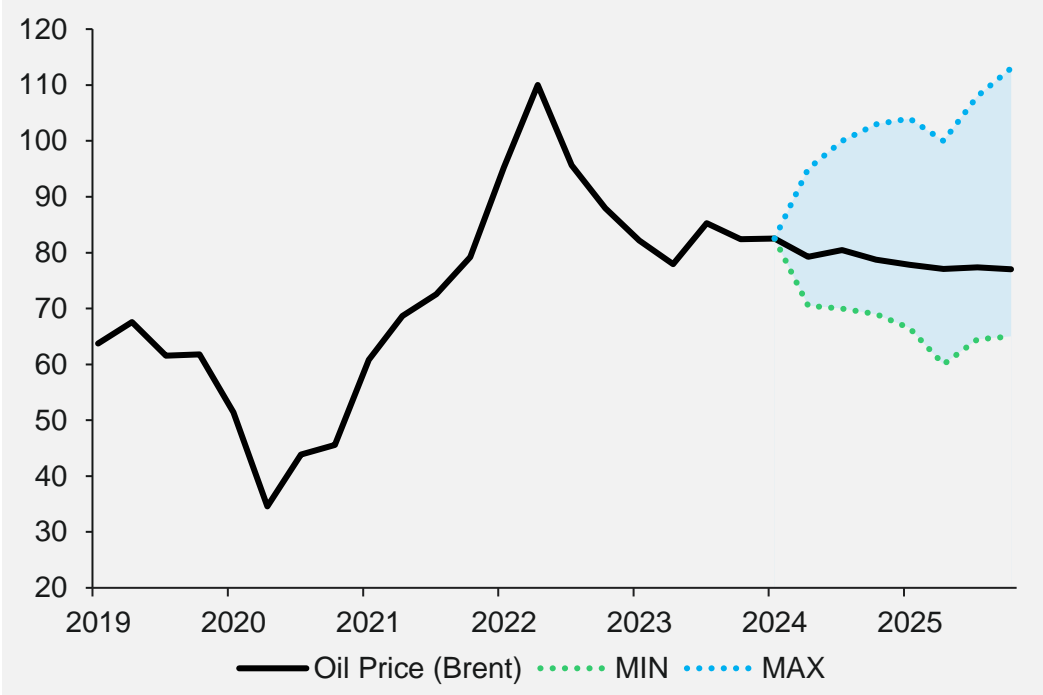
World Oil Demand: Outlook 2025**

Mln b/d and y-o-y % growth



Oil Price: Outlook 2025 / Consensus Forecasts*

Brent, \$/bbl. and forecast upper and lower ranges



Following years of instability, a weakening economic cycle, is expected to **steer global oil consumption back toward its pre-pandemic travel patterns** in the next two years. Albeit decelerating, global oil demand growth should result largely in line with the pre-Covid trend. **Oil price are expected to fluctuate on relatively high levels** in the next couple of years, as the impact of slowing demand will be balanced by OPEC+'s extension of its oil production cuts and flattening US oil supply growth. **The outlook is uncertain and subject to several risks**, many stemming from potential disruptions in the Middle East.



IEA Outlook to 2025

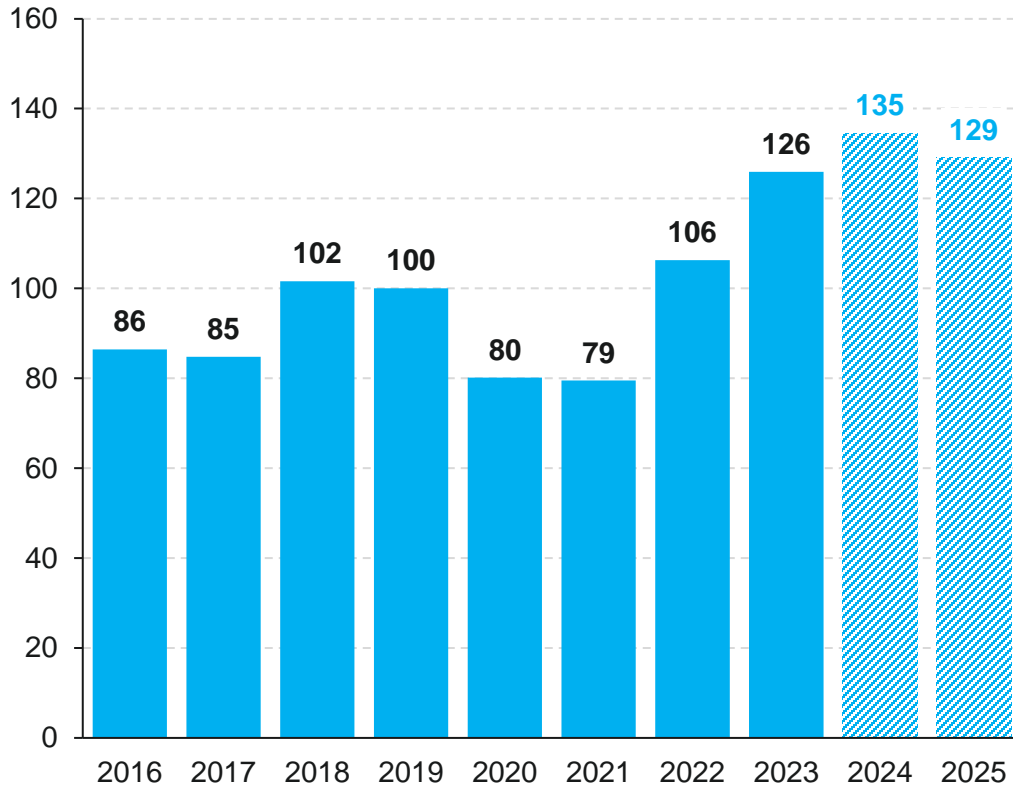
Consensus forecast based on a pool of top forecasters The oil & gas valve industry in Italy | Edition 2024 | IVS-Confindustria Bergamo | Final Report | 34

Beyond 2023 | The *short-term* outlook for O&G investment (2/2)

O&G Upstream CAPEX could achieve another y-o-y increase in 2024

Top O&G Upstream companies*: CAPEX projections

In \$ blns, 2019=100 at current prices, outlook 2025



Based on the assumption of crude oil benchmarks averaging \$81 per barrel in 2024 and \$77 per barrel in 2025, **revenues for Upstream O&G companies could stabilize around 2023 levels in 2024, with a slight retreat expected from 2025 onward.**

Key Takeaway

Under the conservative assumption that the ratio of capital expenditure to revenue (a measure of how the company is re-investing its revenue back into productive assets) will remain in line with historical (2015-2019) levels, the O&G Upstream **CAPEX grow could extend throughout 2024 (+6.8%)**, albeit at a halved rate compared to 2023 (+18%), **before showing a correction in 2025 (-4%)**. Other factors unchanged, 2025 O&G Upstream CAPEX is expected to **remain at consistently elevated levels**, almost 30% above the pre-pandemic.

Our projections in subjected to several uncertainties. Among the many, the **trajectory of oil prices** could diverge from the anticipated path, impacting on revenues, margins and spending. A **more cautious approach** to investing could lead to adjustments in the ratio of capital expenditure to revenue. Furthermore, **cost inflation and interest rates** (which we expect to soften from its 2022 peaks) could instead fall slower than expected in medium term, driving spending above our expectation (and vice-versa).

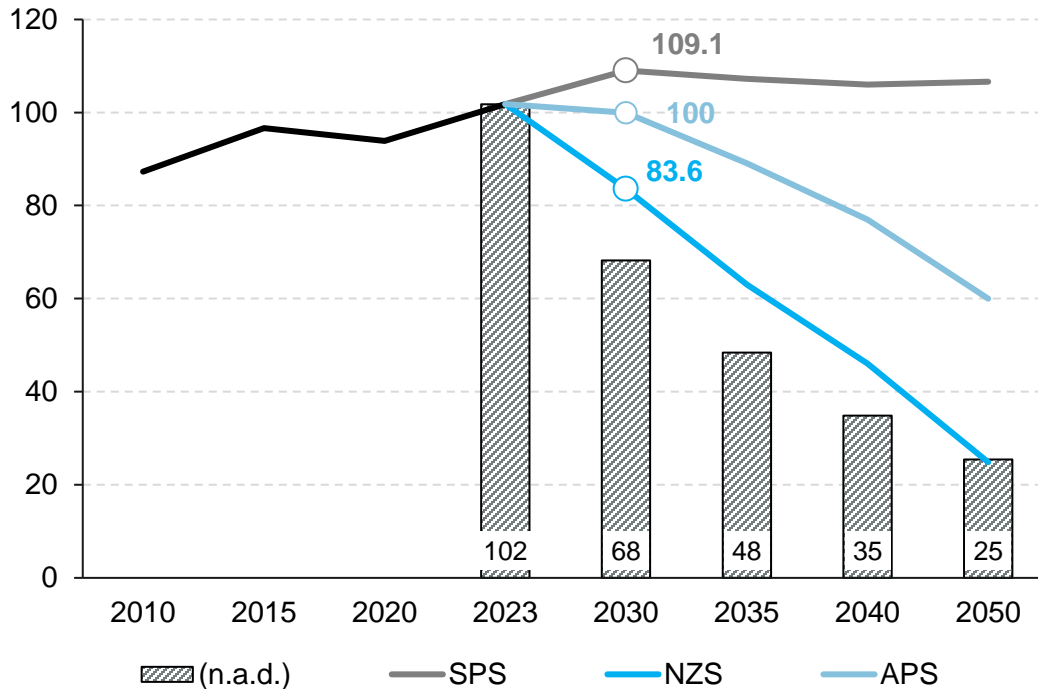


* 32 Integrated companies + 89 E&P companies
Prometeia calculation on balance sheet data

Beyond 2023 | The *long-term* outlook for O&G investment (1/2)

A strong commitment in O&G spending will be necessary to maintain the current oil output levels

World Oil demand scenarios by International Energy Agency
Mb/d, outlook 2050



Even though there isn't a consensus on when exactly oil demand will peak, most predictions suggest it could happen within 2030 as renewable energy sources become more competitive and transportation technologies evolve.

According to the latest IEA WEO*, World fossil fuel demand is set to peak by 2030. In detail, assuming all the announced ambitions and pledges will be implemented (← **“Announced Pledges” scenario, “APS”**), oil demand is expected to fall by approx. 2% by 2030, compared to 2022 levels. A “business as usual” scenario (← **“Steps” scenario, “SPS”**), based on a review of the current policy landscape, assumes that oil demand would actually increase by 2030 (by approx. +7%, compared to 2022 levels). Eventually, a Net-Zero outlook (← **Net-Zero scenario, “NZS”**) would require oil demand to fall by approx. 18% by 2030, compared to 2022 levels.

Key Takeaway It's worth noting that - given natural declines rates - **maintaining a positive rate of investment is crucial just to sustain current production levels.** Indeed, assuming no new investment in oil upstream (**n.a.d. scenario**), world production would reduce by approx. 35 mb/d in 2030, compared to 2023 levels, falling almost 15 mb/d below the demand level included in the IEA's “greenest” outlook.

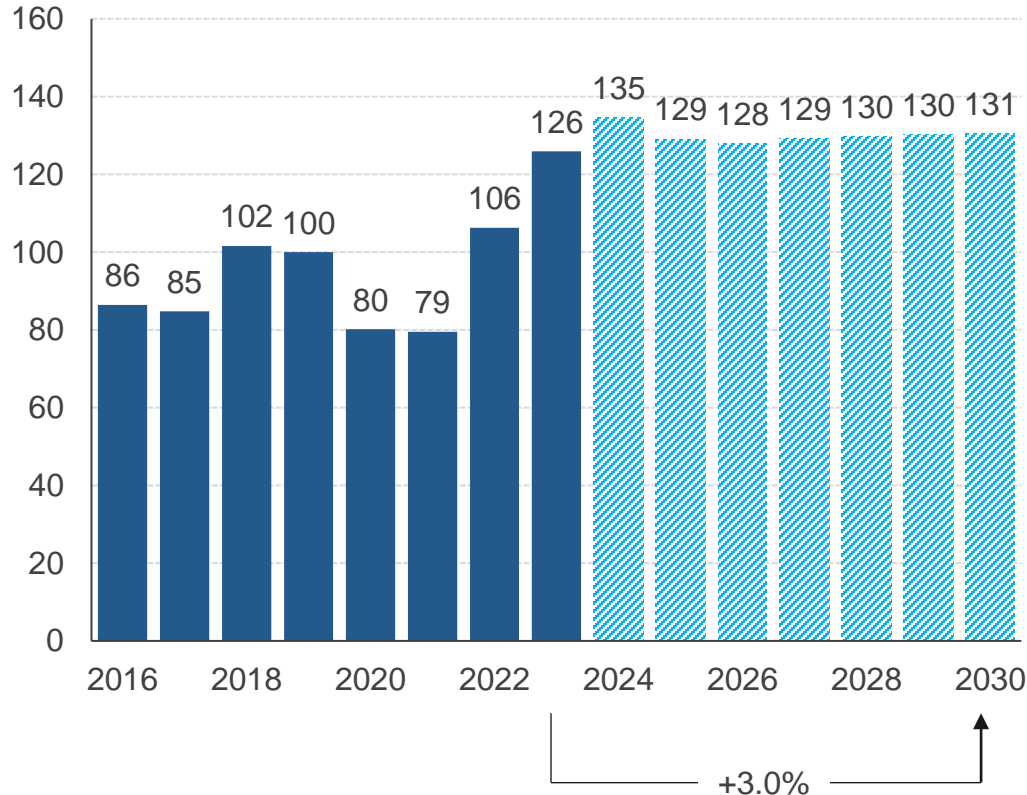


Prometeia calculation on EIA, WEO report 2023.
Implicit 2050 scenario rebased on actual data up to 2023.
n.a.d. scenario estimated by Prometeia

Beyond 2023 | The *long-term* outlook for O&G investment (2/2)

Even assuming World oil demand will decrease to 100 mb/d to 2030 (approx.-2% from the current ~102)...
 ... other factors unchanged oil E&P investment should maintain at elevated levels

World Oil E&P investment needed to match the IEA «A.P.» Scenario
 In \$ blns, 2019=100 at current prices, outlook 2030



The oil investment needed to meet global demand through 2030 reflects a **complex interplay of factors** including economic growth, technological advancements, regulatory changes, and geopolitical dynamics.

Specific investment figures may vary considerably. However, other factors unchanged the **global oil and gas (upstream) investments** (at current prices, and assuming no changes in operating and capital costs) **should maintain at relatively elevated levels**, to match the oil consumption projections even under a “conservative” scenario (such as the EIA STEPS).

Key Takeaway For oil valve producers, this implies that - while the overall pace of upstream activities may stall over time - **there will still be demand for their products to support ongoing operations, maintenance, and optimization of existing infrastructure.** Additionally, as the industry seeks to extract oil more efficiently and sustainably, there may be opportunities for valve producers to **supply specialized valves that improve operational performance, enhance safety, and reduce environmental impact.**



Prometeia calculations and projections on EIA database

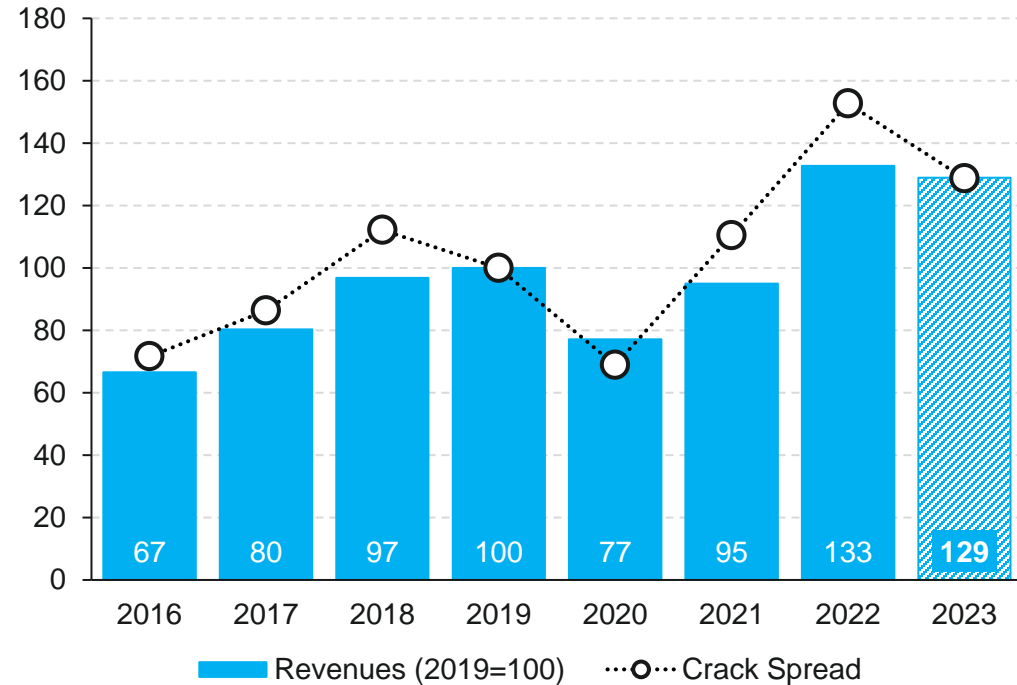
- 
- Executive Summary
 - Business Structure & Italy's role in the European valve industry
 - Recent trends in O&G valves trade (and revenues)
 - A focus on O&G Upstream Investments
 - **Beyond Upstream: the catalysts of growth (2024-2030)**

2023 | Global Refining & Marketing Revenues were remarkably stable in 2023...

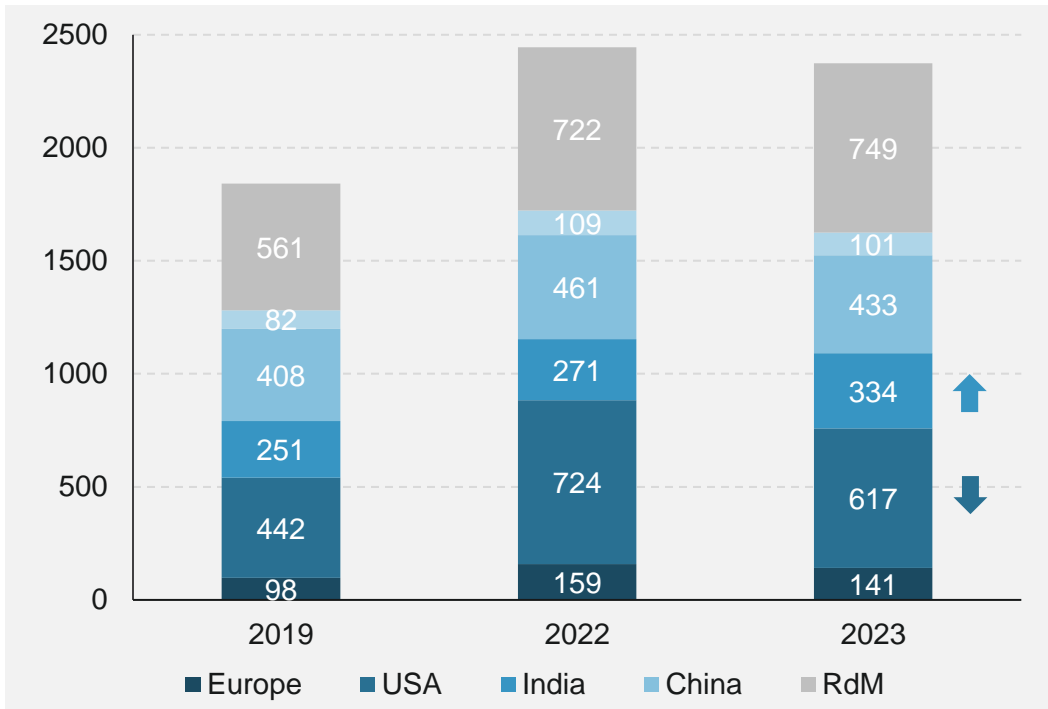
... amid decreasing oil products prices & falling refining margins...

... but the performance is not uniformly distributed among the regions

Top O&G Refining and Marketing companies: revenues + oil price
2019=100, in \$



Top O&G R&M companies: revenues (regional disaggregation)
in \$ blns



Even though oil products prices dropped at a fast rate in 2023, global **R&M industry managed to maintain stable revenues** (-3% y-o-y; +29% compared to 2019). ... it is worth noting that **most of the growth was achieved by Indian companies** (+23.3%), able to gain competitive advantage due to the huge flows of crude & products from Russia at discounted price, while **European** (-11.2%) and **US** (-14.8%) refineries faced a tougher operating environment. Amid rising competition, skyrocketing energy costs and stricter regulation they posted a double digit fall in revenues from 2022 heights

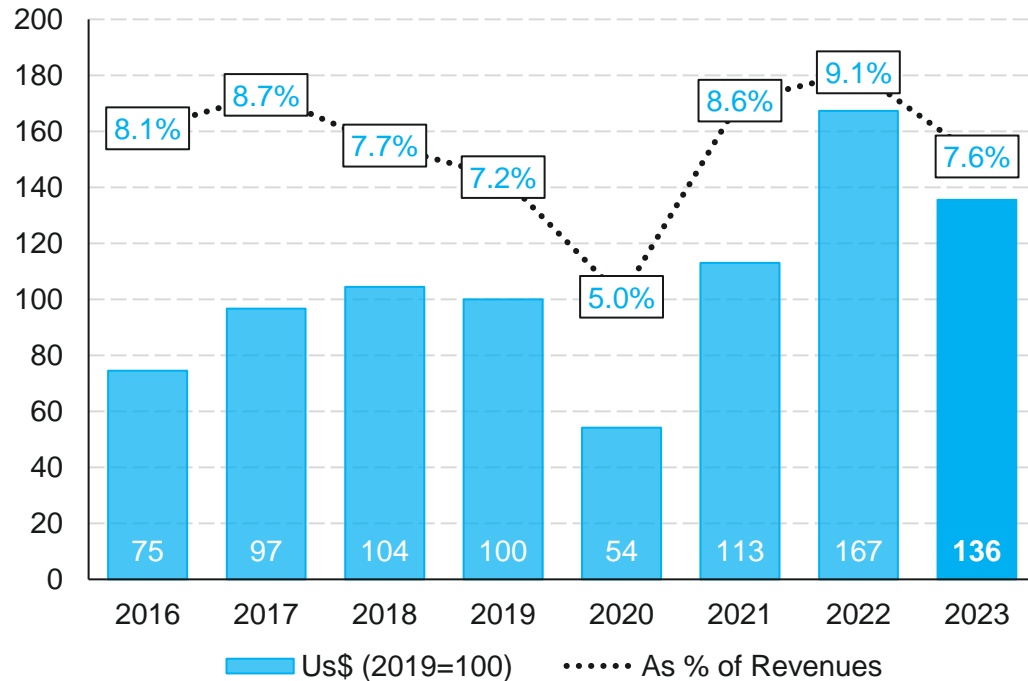


* 66 R&M companies. Prometeia calculation on balance sheet data

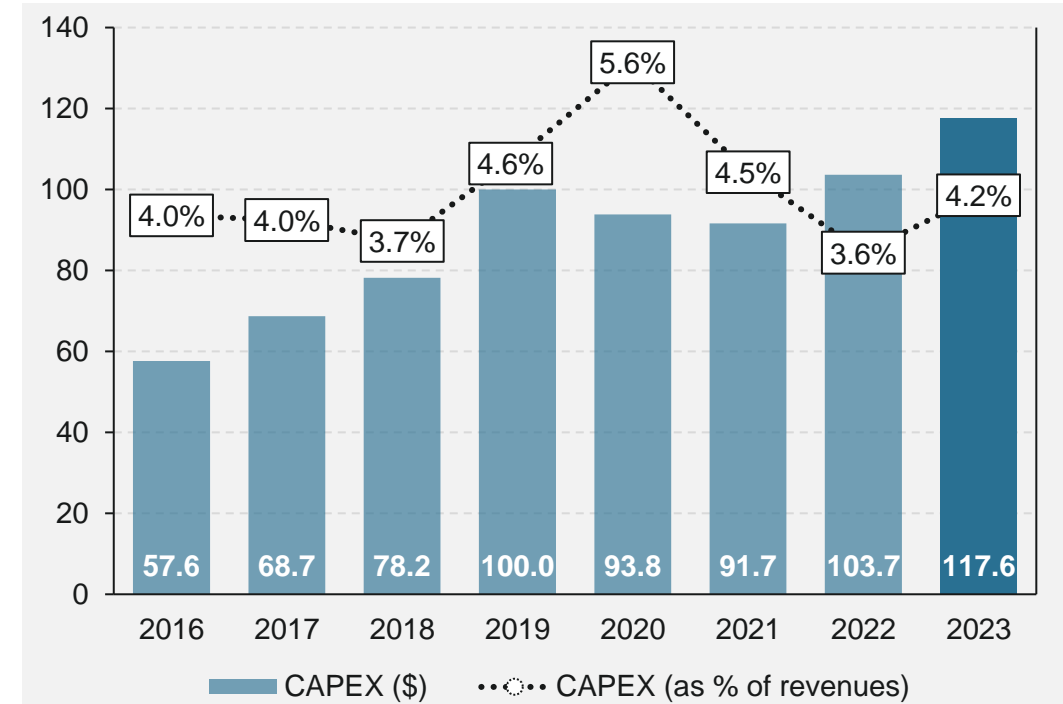
2023 | Global R&M Capex posted the second-in-a-row increase

Increased spending to expand refining, petchem + retail capacity (mostly from sovereign entities) ...
 ... led to the second in a row increase in overall R&M capital spending

Top O&G Refining and Marketing listed companies: EBITDA
 2019=100, in \$



Top O&G Refining and Marketing listed companies: CAPEX
 in \$, 2019=100



2023 global refining margins dropped after reaching historic highs in 2022, offsetting the benefit of lower energy costs and higher runs, leading to a 1.5 p.p. decrease in EBITDA margins which, at 7.6%, realigned to pre-pandemic average levels. Albeit in a challenging environment, sovereign-backed entities' increased spending in refining, and petrochemical capacity, along with a rise in energy transition investments (and rising materials & labour costs) allowed R&M capex to rebound from 2022 lows.



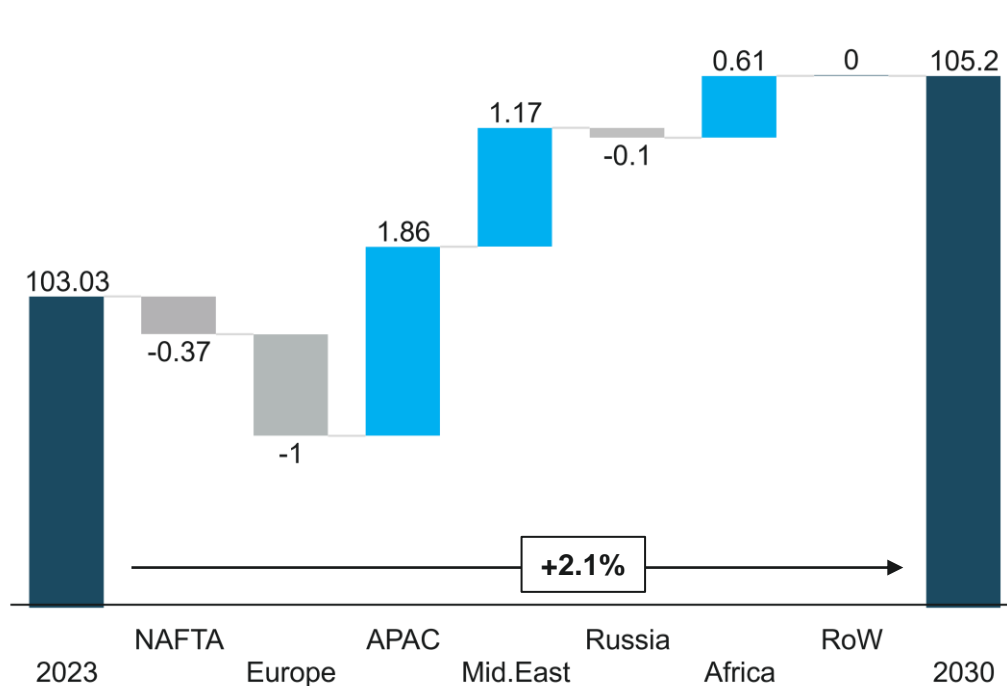
* 66 R&M companies
 Prometeia calculation on balance sheet data

Beyond 2023 | The Outlook for O&G Refining & Marketing companies

East-of-Suez accounts for ~90% of global refinery capacity additions to 2028

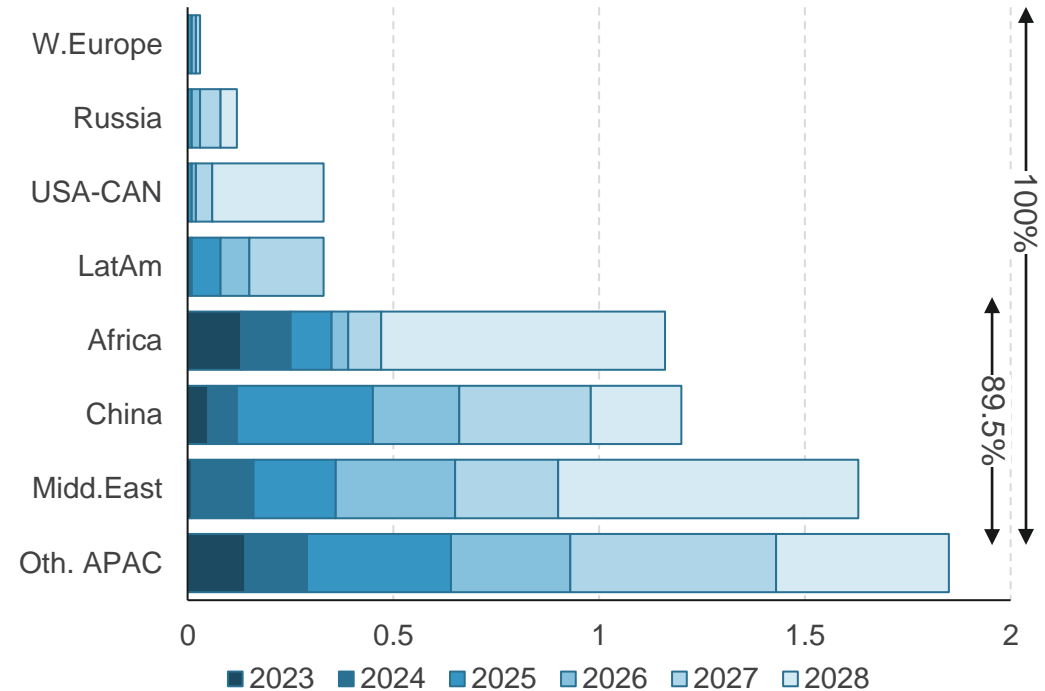
World Refining Capacity, Outlook 2030

MB/d by country, Region



Distillation capacity additions

MB/d by country, Region, (from existing projects, exc. closures)



Key Takeaway

pandemic triggered another wave of capacity rationalization in Europe, as refineries struggled with weak products demand, rising energy costs and increasing competition with Asian exporters. **This trend is unlikely to revert in the future** as European (and American) mobility sector move towards electrification. Indeed, future **capacity additions** (likely the last wave of refinery additions) **are mostly located East-of-Suez, in Africa, India** (to respond to the country's rising demand of transportation fuels and feedstocks), **China** (to replace smaller refineries / outdated capacities) and **Middle East**, due to the costs advantage.



Prometeia calculation on OPEC, EIA WEO 2023, Concawe data

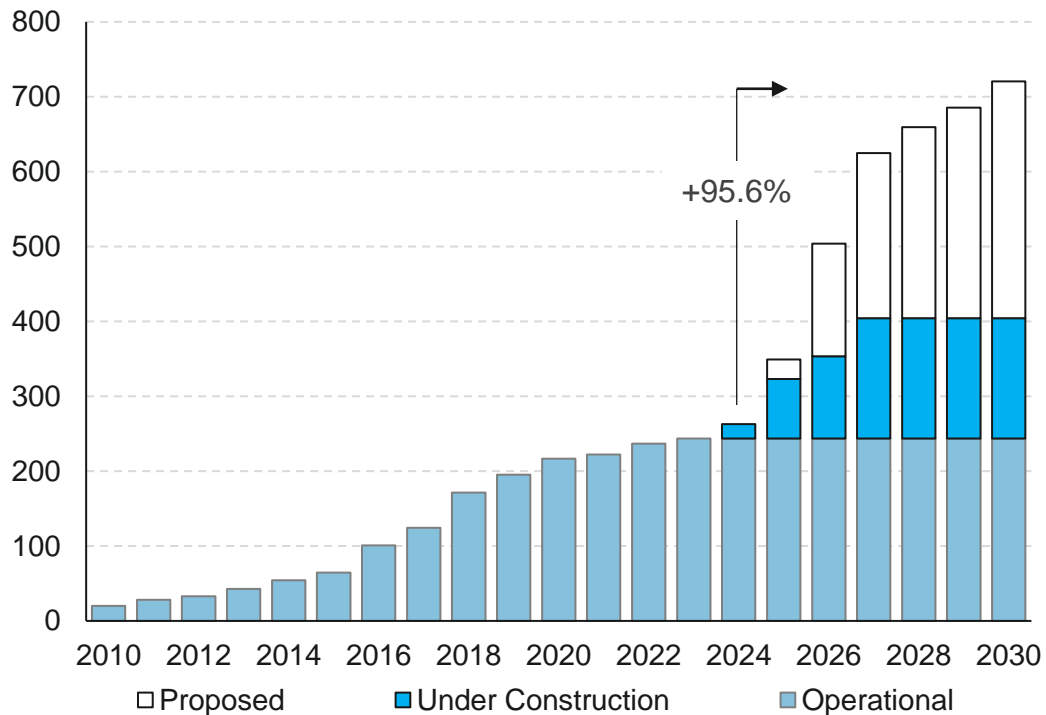
Beyond 2023 | Transport Services: focus on LNG liquefaction projects

Based on under construction plants...

... overall liquefaction capacity could rise >95% in the next 6 years

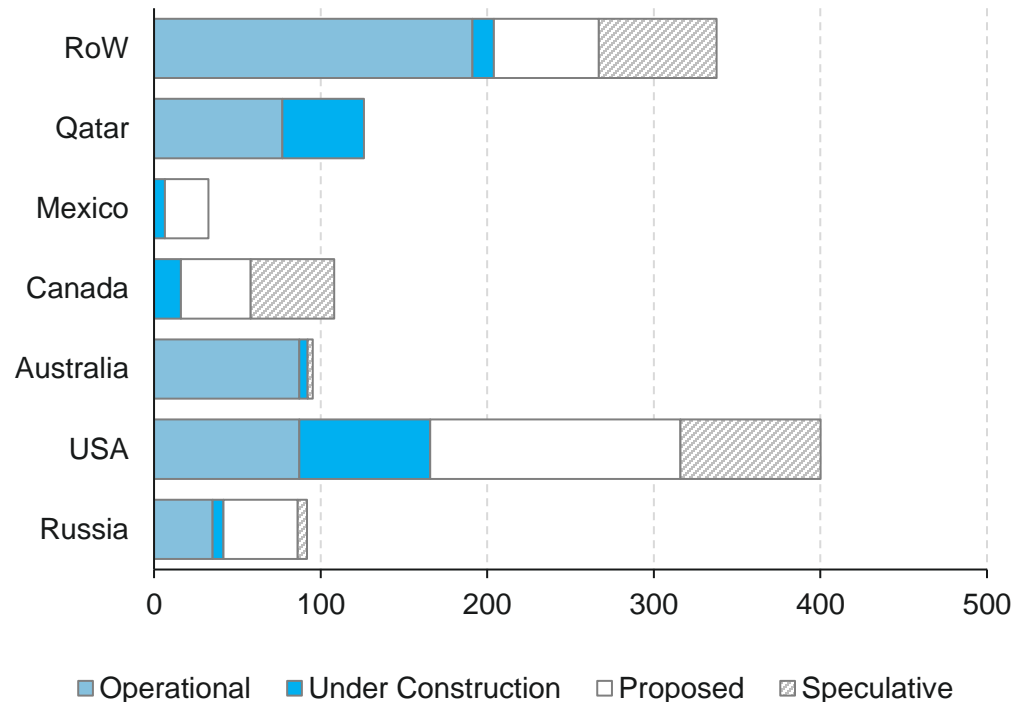
Global LNG Liquefaction Capacity

MTPA, cumulated capacity starting from 2010, actual capacity & projects



LNG Liquefaction Capacity, by country (selection). Outlook 2030

MTPA, overall capacity, actual + projects



Key Takeaway

A new wave of liquefaction capacity is expected to come onstream within the end of the decade. Based on plants currently under construction, 160 MTPA of new liquefaction capacity could be added between 2024 and 2030 (increasing the current capacity by more than 30%). Including the planned plants, this number could levitate to 95.6%. United States and Qatar will lead the market expansion, accounting for more than 73% of total projects “under construction” and 51% of overall potential capacity (Under Construction + Proposed + Speculative).



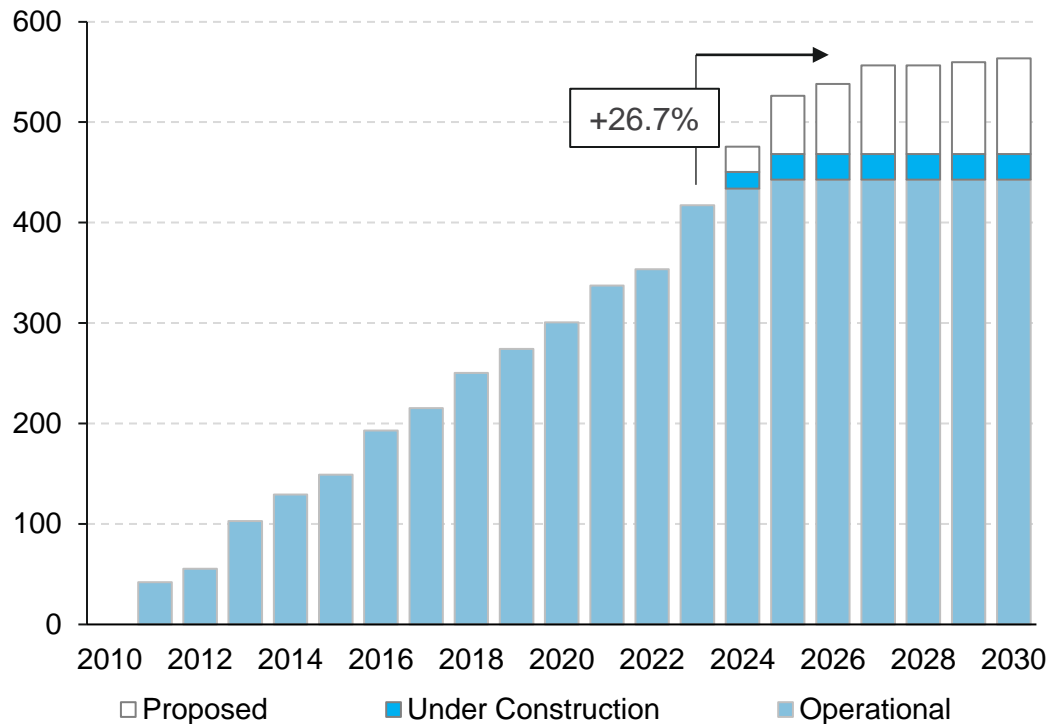
Prometeia calculations and EIA, Eikon data

Beyond 2023 | Transport Services: focus on LNG regasification projects

Regasification capacity is expected to increase as well, albeit at a slower pace

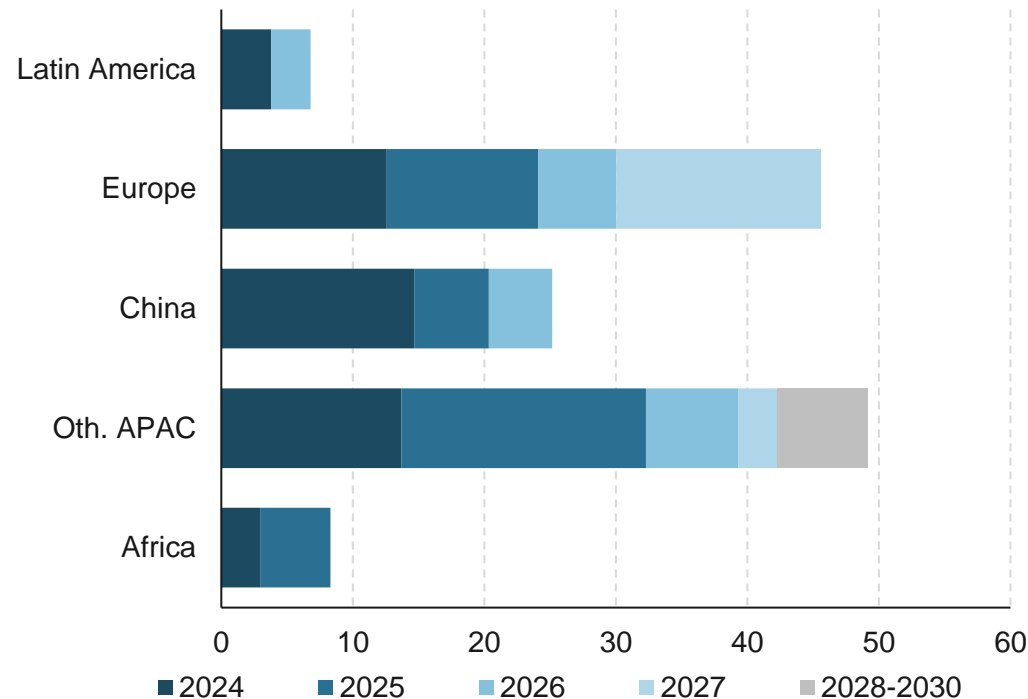
Global LNG Regasification Capacity

MTPA, cumulated capacity starting from 2010, actual capacity & Projects



Global LNG Regasification Projects

MTPA, 2024-2030 (Proposed + Under Construction)



Key Takeway

Floating regasification units have been essential for Europe to quickly replace piped gas imports following the Russia-Ukraine war, with the region seeing an increase in regasification capacity of around 60% from 2022 to 2023-H1. Based on “Proposed” and “Under construction” projects, **Asia and Europe will confirm as the main drivers of regasification capacity buildout**, with capacity additions of 74 and 50 Mtpa respectively, between 2024 and 2030.



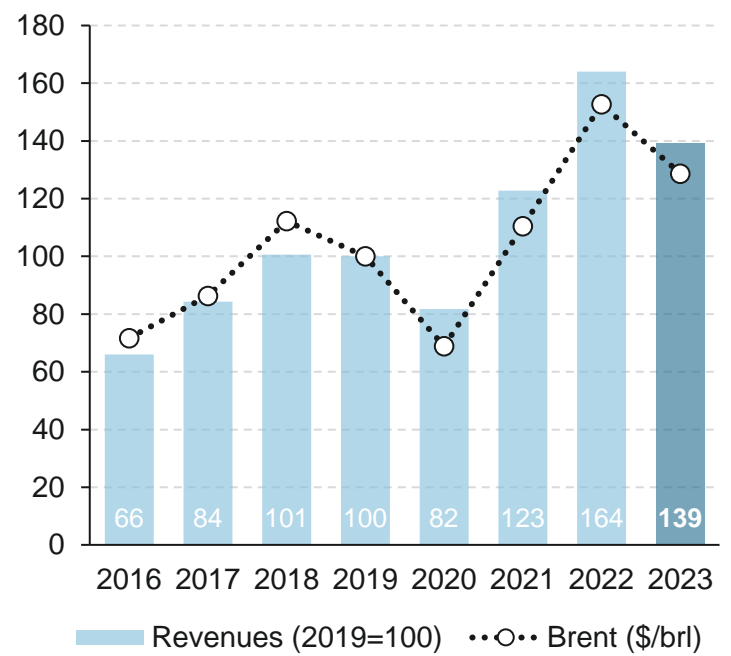
Prometeia calculations and EIA, Eikon data

2023 | Lower O&G prices impacted on Transport Services revenues as well

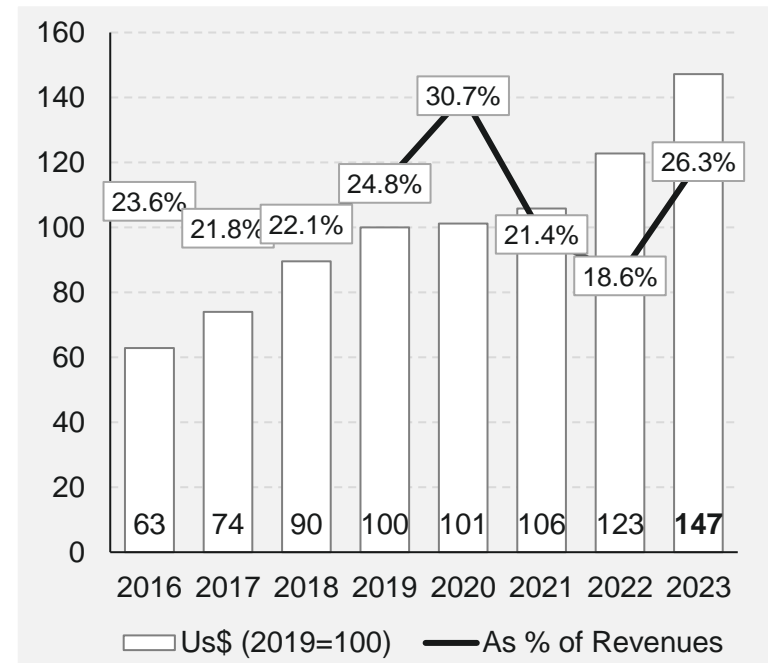
Nonetheless the revenues drop, the sub-sector benefitted from an increase in both margins and CAPEX

O&G Transport Services*

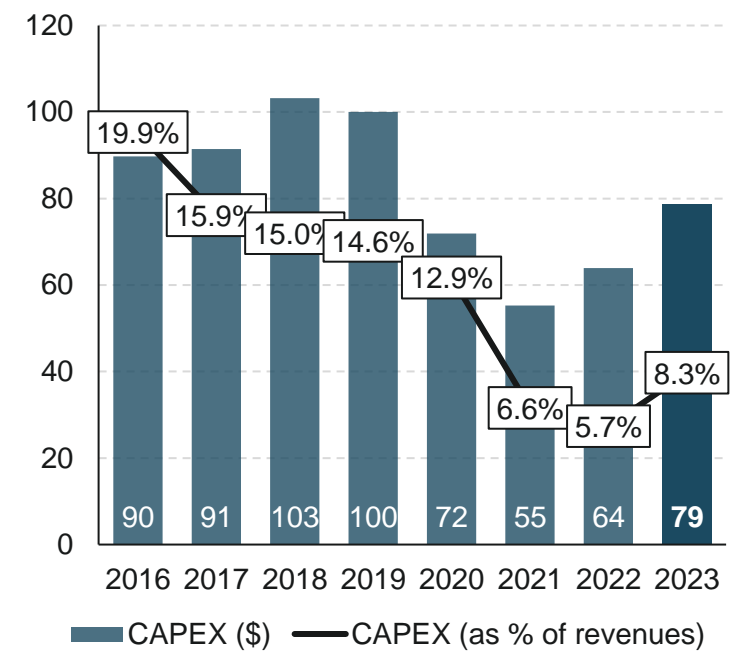
Revenues and oil price (2019=100, \$)



EBITDA (\$, 2019=100 and % of revenues)



CAPEX (\$, 2019=100 and % of revenues)



Despite a decrease in turnover from 2022 highs, **Oil and Gas Transportation Services (TS) companies saw a boost in profit margins (EBITDA) and a resurgence in capital expenditure (CAPEX) in 2023.** However, Capital Expenditure has not yet reached its pre-pandemic levels. The decline in industry revenues can be attributed to the United States, where reduced materials costs and diminished investments in oil and gas drilling negatively affected operations. Conversely, revenues in other regions witnessed a strong growth rate throughout 2023.



* 50 O&G Transport Services companies
Prometeia calculation on balance sheet data

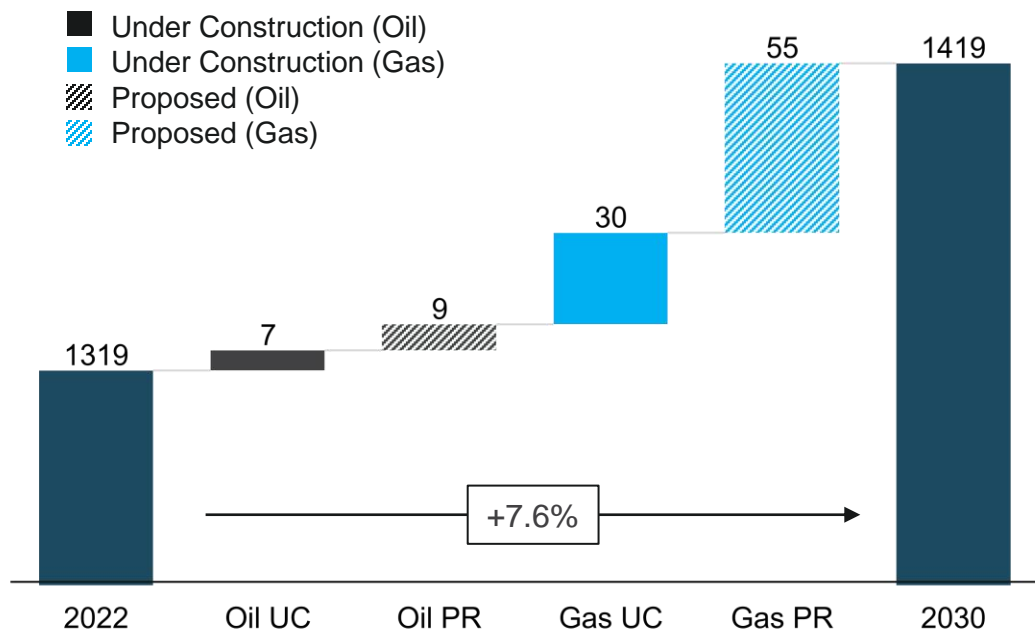
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Beyond 2023 | Transport Services: focus on O&G pipelines

Global O&G pipeline capacity expected to increase ~7.6% to 2030

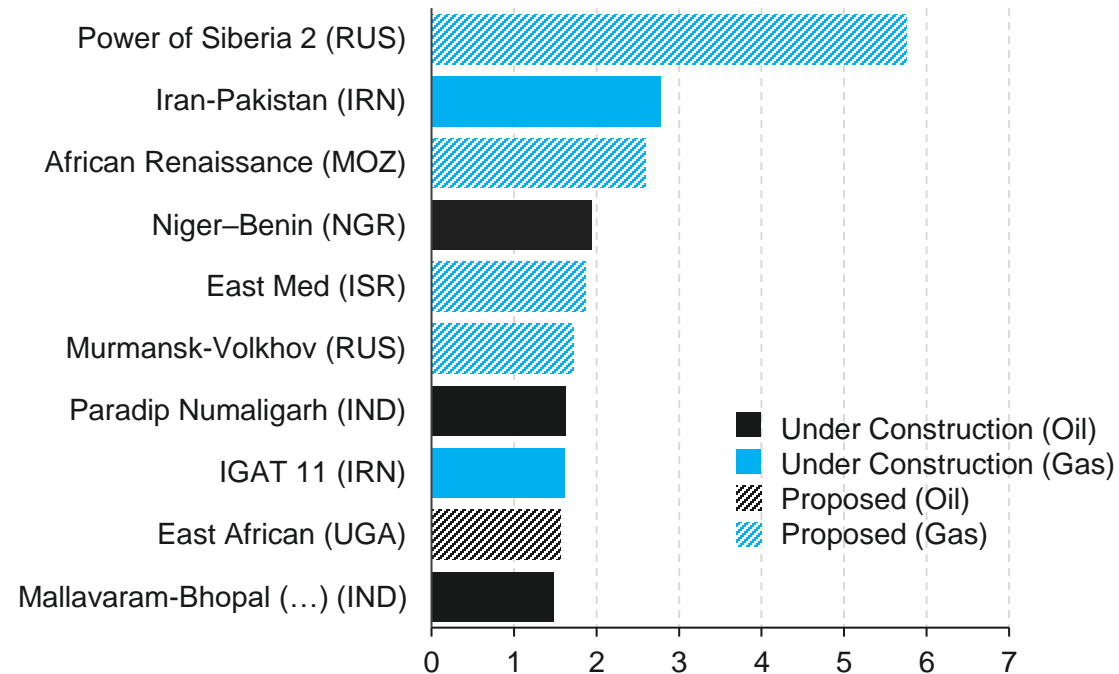
Global O&G Pipelines length to 2030

Under Construction + Proposed, '000 Km



Global O&G Pipelines top projects (2024-2030, selection*)

Under Construction + Proposed, '000 Km



Key Takeaway

Over the span of 2023 to 2030, over 100,000 kilometers of trunk oil and gas pipelines are slated to become operational worldwide. Among these, 36,300 kilometers are already in construction, while another 62,500 kilometers are yet to reach the approval/FID. Overall, almost 86% of projects are for Oil transport trunks, the remaining 14% for oil transport projects. The biggest projects are expected to take place in Africa and Asia

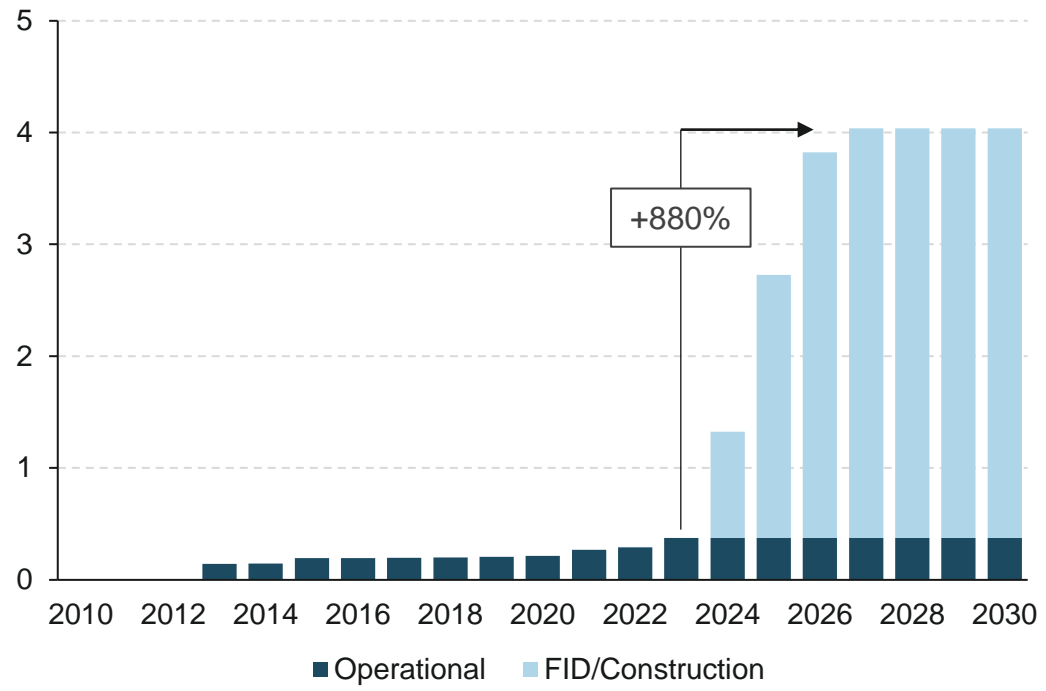


*Only projects with known length/capacity and start date. Prometeia calculation on Global Energy Monitor data

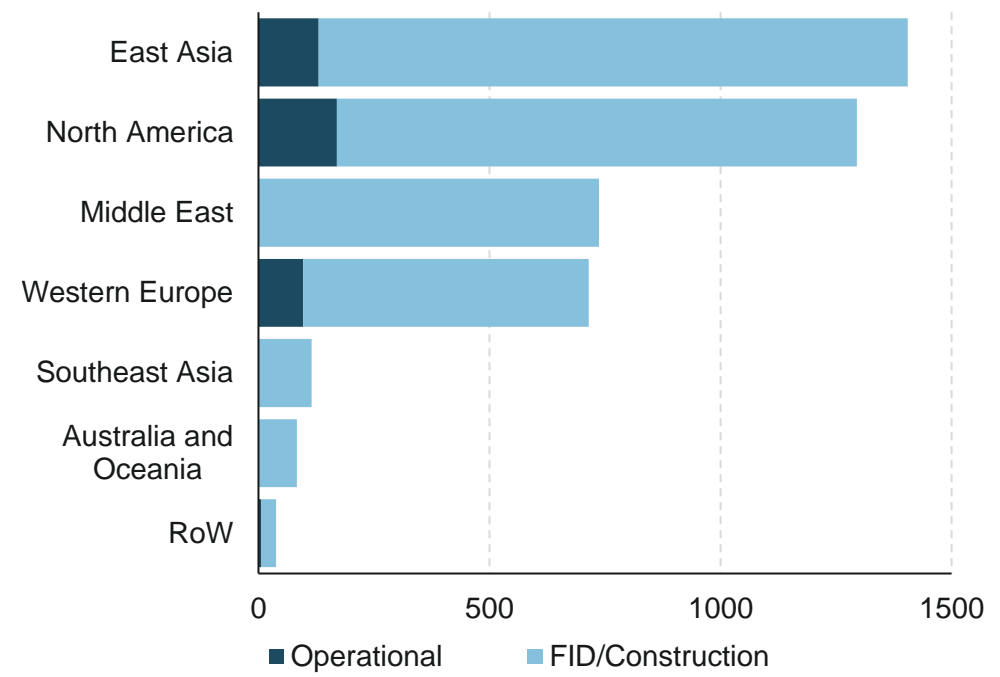
Beyond Hydrocarbons | Perspectives for Hydrogen Industry

Based on projects on FID / under construction, hydrogen production capacity to 2030 could growth ~10X

Global Hydrogen Production capacity
Ton, cumulated capacity, actual and projected



Global Hydrogen Production capacity / Regional breakdown
Ton, cumulated capacity, actual and projected



Key Takeaway By 2030, the annual production of hydrogen could potentially hit 137 million metric tons if all projects (operational, under construction, concept & under feasibility study) come to fruition. However, **many of these projects are speculative / still in early development stages**: based only on projects in construction and at the FID (Final Investment Decision) point, the outlook to 2030 is far more conservative with +3.7 million tonnes of additional capacity, or +880% (~10x) compared to 2023. Most of developments to 2030 are expected to come online in East Asia and United States.



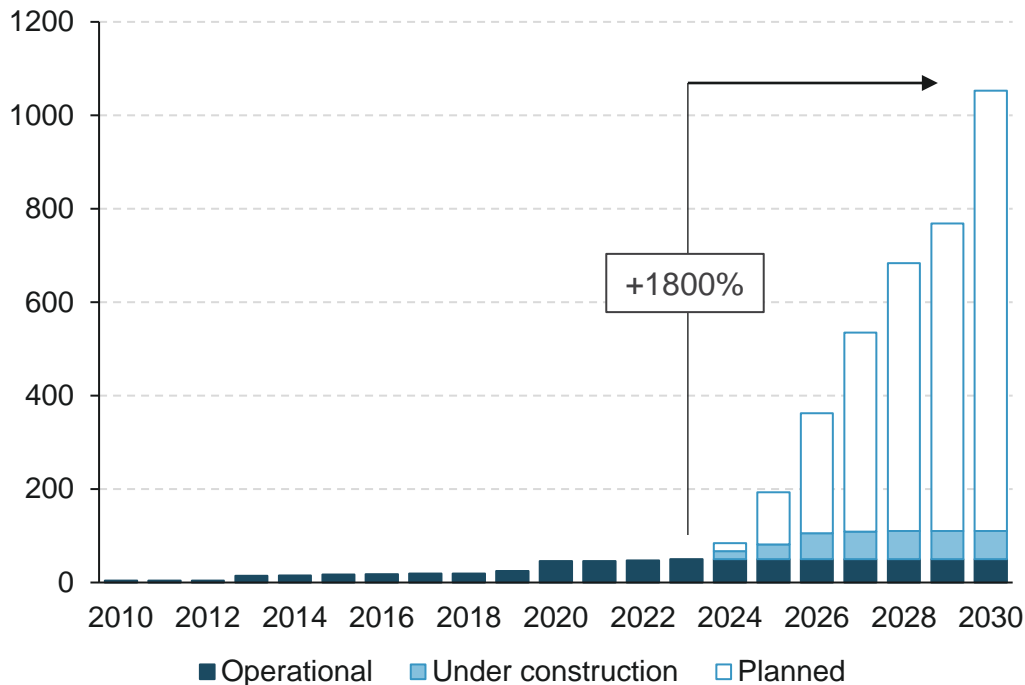
Prometeia calculations and EIA, Eikon and oth. sources data

Beyond O&G | The State of Carbon Capture and Storage (CCUS) industry

CCUS could growth ~18X in the coming years, but the development path is fraught with uncertainties

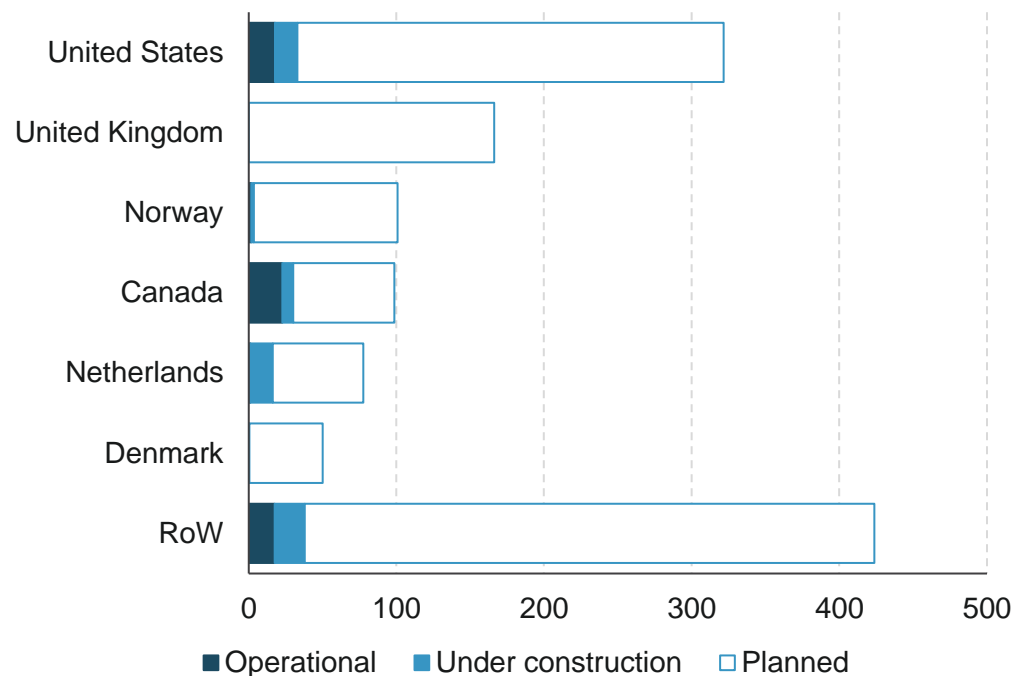
Global CCUS capacity

Mt CO2/yr, cumulated capacity, actual and projected



CCUS capacity / Country breakdown

Mt CO2/yr, actual capacity and projected



Key Takeaway

CCUS refers to a suite of technologies that enable a) the mitigation of carbon dioxide (CO2) emissions from large point sources such as power plants, refineries and other industrial facilities and b) the removal of existing CO2 from the atmosphere. Based on “under construction” and “planned” projects, **global CCUS capacity could grow 19x within 2030**. It’s however worth pointing out that **CCUS technology is still in its infancy** in terms of deployment and commercial viability. Existing CCUS projects are indeed often small-scale or pilot projects, and scaling up this technology to a higher level requires overcoming technical, economic, and regulatory hurdles that could hinder **the expansion path implicit in companies' announcements**



Prometeia calculations and EIA, Eikon data

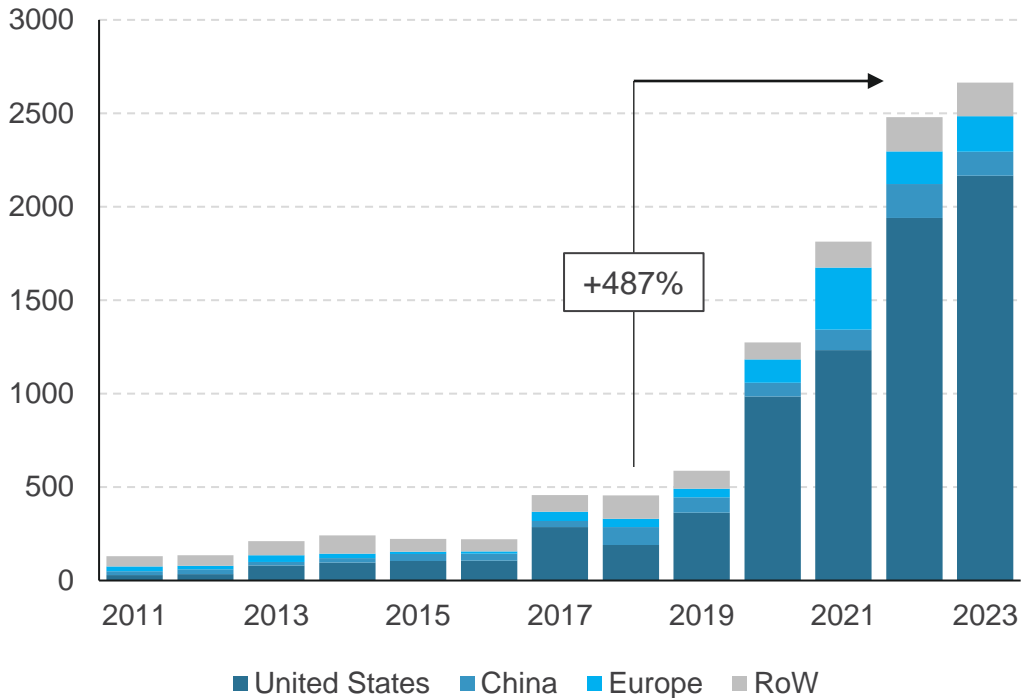
Beyond Energy | Opportunities from the unstoppable growth of Space economy

The last 5 years showed an unprecedented growth for space economy...

.. as more objects were sent into space than in previous 50 years

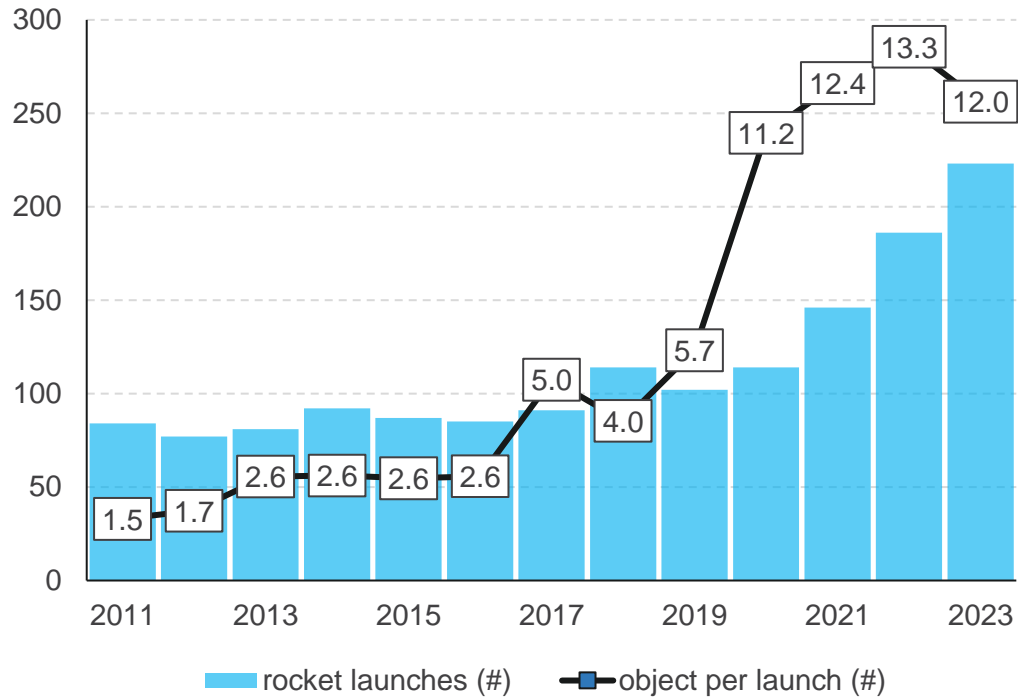
Number of objects launched into outer space

Objects / year, by country



Number of space rockets launches

Launches / year



The surge in space activity has been driven by various factors, including advancements in technology, increased commercial interest, and the emergence of new players in the space industry. The ~6X increase in the number of objects launched into space over the past five years has been accompanied by a significant rise in space rocket launches, albeit at a lower rate. Among other factors, the trend toward miniaturization (driven by the development of smaller and lighter satellites) in satellite technology indeed enabled an increase in the number of satellites launched per mission.



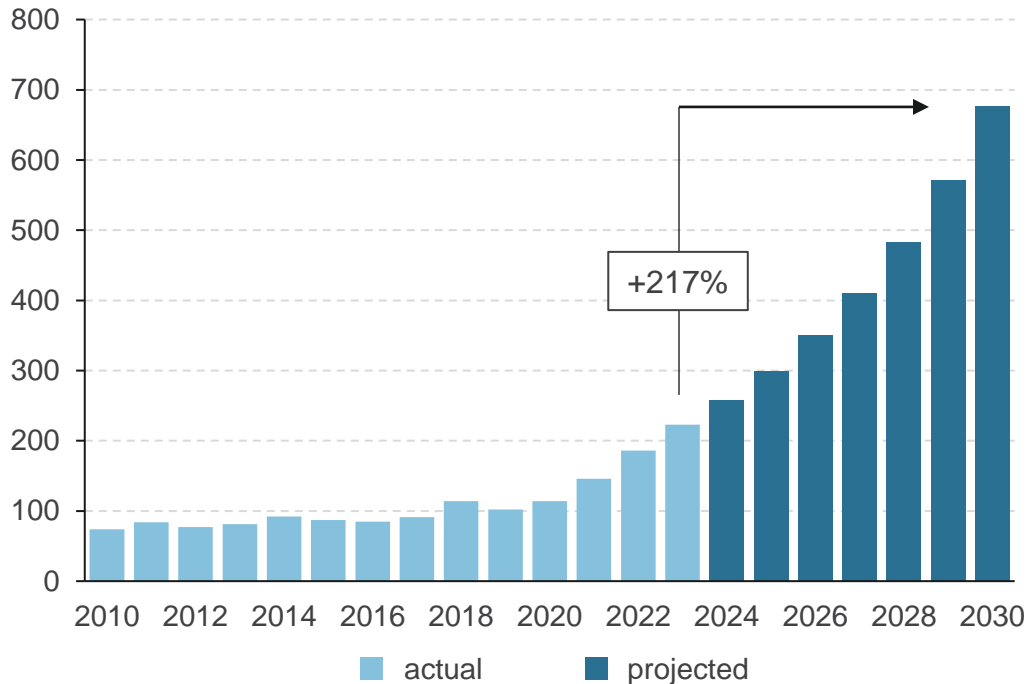
Prometeia calculations on UN United Nations Office for Outer Space Affairs data and desk research

Beyond Energy | Opportunities from the unstoppable growth of Space economy

Annual rocket launches could triple by 2030, fuelling a surge in components demand

Number of space rockets launches, outlook to 2030

Launches / year



As more countries and companies enter the space industry and as technologies such as CubeSats become more prevalent, **the number of objects in space is expected to accelerate significantly**: the proposed launches of a series of satellites constellations, which private companies plan to use to provide services to customers (such as internet access in remote areas) could elevate the total number of satellites* in orbit from the current 9000 to almost 60.000 before the end of the decade.

Assuming that the number of satellites launched into orbit per rocket continues to follow to growing trends observed in the last five years, the **space rocket launch / year could increase from the current ~220 to almost 700 in 2030 (3.2X)**, i.e. a +217% increase in 7 years, or +17% CAGR.

Key Takeaway The increasing number of satellites being launched into orbit could lead to a **greater demand for components used in satellite propulsion systems**, as well as systems (such as fuel valves) utilized in **ground support equipment** for satellite manufacturing and launch operations.

*Cfr. United States Government Accountability Office, "Large Constellations of Satellites», Sept. 2022

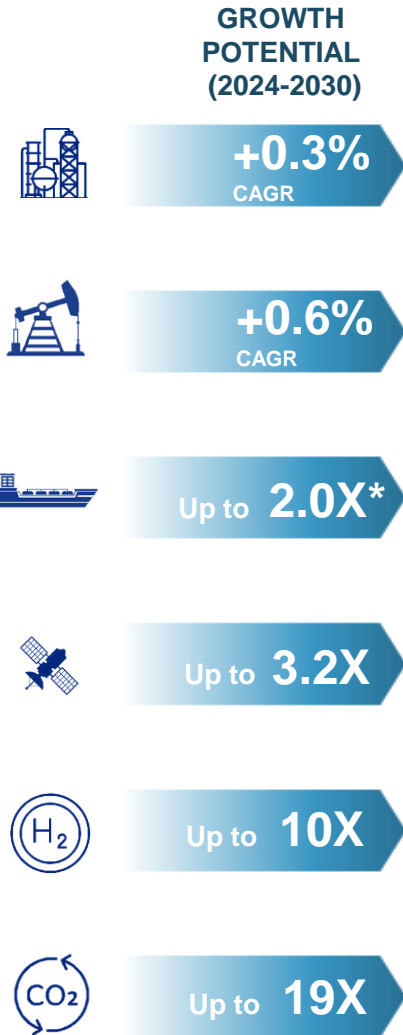


Prometeia calculations on UN United Nations Office for Outer Space Affairs base data and desk research

In a nutshell | O&G Valves: the Catalysts of Growth

Drivers of growth: uncertainty / risk VS growth potential

Figure is purely indicative



Pandemic triggered a wave of rationalization in **Refining** and this trend is unlikely to revert in the future as mobility sector move towards electrification. Capacity additions mostly concentrated in Asia, MENA

The overall pace of **Upstream** activities may stall over time however, there will still be demand for O&G valves to support operations, maintenance, optimization

Transport: A new wave of liquefaction capacity is expected to come onstream within the end of the decade. Regas plants should expand as well. Additional input might stem from the deployment of new pipelines.

Space Economy: the increasing number of satellites being launched into orbit could lead to a greater demand for components for systems (such as fuel valves) in ground support

Hydrogen strategy for capturing growth opportunities in new markets and industries. Most of developments to 2030 are expected to come online in East Asia and United States

Global **CCUS** capacity could grow 19x within 2030. Note that CCUS technology is still in its infancy in terms of deployment / commercial viability potentially leading to a shortfall in growth compared to expectations



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