Inflation bites: operators face expanding budgets for drilling & completion services

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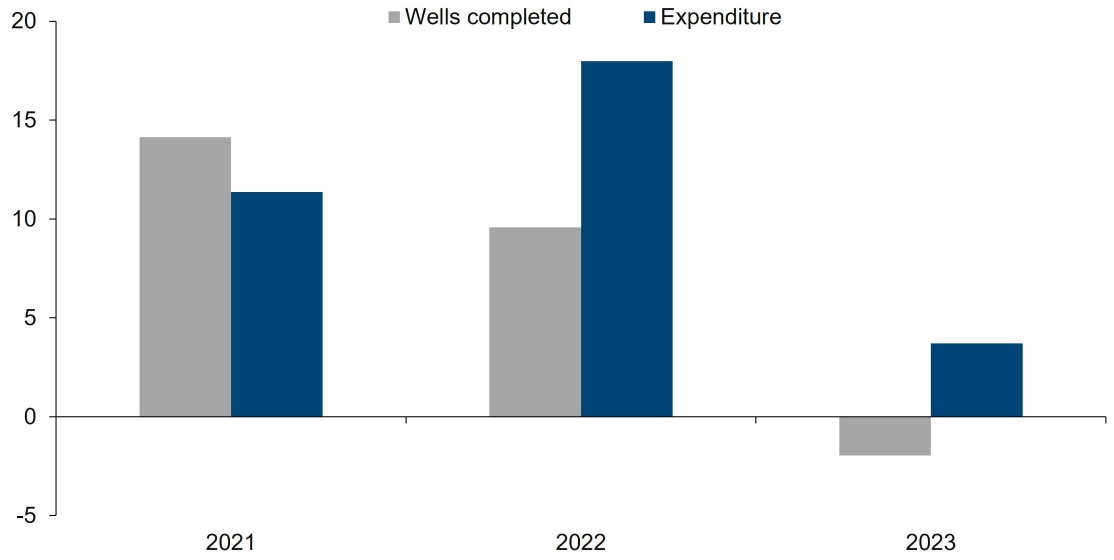
Rising inflation, coupled with ongoing supply chain constraints, look likely to increase the cost of D&C services in the coming years, which in turn will boost well construction costs for the global oil and gas industry. Our analysis shows that spending on D&C services will reach around $170 billion this year, up almost 20% compared to 2021 and a 30% rise on 2020 levels. However, we anticipate that drilling activity this year will increase by just 10% (Figure 1a), even though operators have managed to improve drilling efficiencies by drilling the same lengths in shorter periods (Figure 1b). This should have reduced costs but the fact that they are rising reflects the severe impact of inflation on D&C costs. Further out, drilling activity could even drop by 2% despite robust growth in expenditure. Shale E&P companies have revised their budget guidance for this year with an upward revision to spending despite flattish production growth. Even before Russia's invasion of Ukraine, we saw supply chain constraints impacting both E&Ps and service companies with the current geopolitical crisis exacerbating an already worsening situation.

Figure 1a: Change in wells vs change in well expenditures
Percentage change in well count and well spending



Source: Rystad Energy WellCube, Rystad Energy ServiceCube

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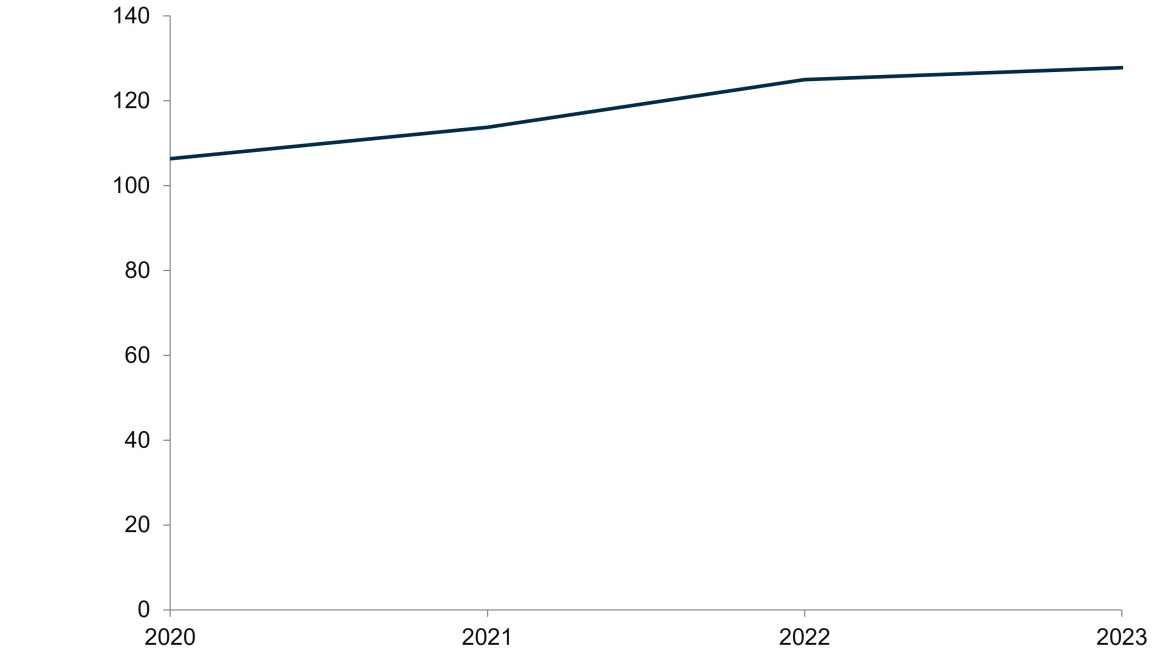
Figure 1b: Drilling speed evolution
Meters per day



Source: Rystad Energy WellCube

To assess the way in which costs associated with D&C services could increase well construction costs, we first break down D&C costs into five categories: drilling materials, drilling services, drilling equipment, evaluation services and well intervention services and their components (Figure 2). We capture spending on all types of equipment, material and engineering services required during the well construction process. To better understand how inflation will impact D&C costs, we analyze the impact on each segment separately whether it is driven by labor, raw materials or other supply chain issues.

Figure 2: Drilling and completion services breakdown

Drilling and completion services				
Drilling materials	**Drilling services**	**Drilling equipment**	**Evaluation services**	**Well intervention**
Surface trees and wellheads	Directional drilling services	BOP, drilling risers and other drilling tools	Mud logging	Hydraulic fracturing services
Sand screens, gravel packing and subsurface safety systems	MWD and LWD	Drill pipes and BHA's	Wireline and slickline services	Proppant
Premium and non premium OCTG	Cement and drilling and completion fluids	Waste management and water disposal	Coring and other G&G services	Fishing services
Liner hanger and other well completion systems	Casing and tubing running services	Managed pressure drilling	Well production testing	Coiled tubing and thru-tubing services

OCTG: oil country tubular goods. MWD: Measurement While Drilling. Logging While Drilling. BOP: Blow Out Preventer. G&G: Geological and Geophysical.
Source: Rystad Energy ServiceCube

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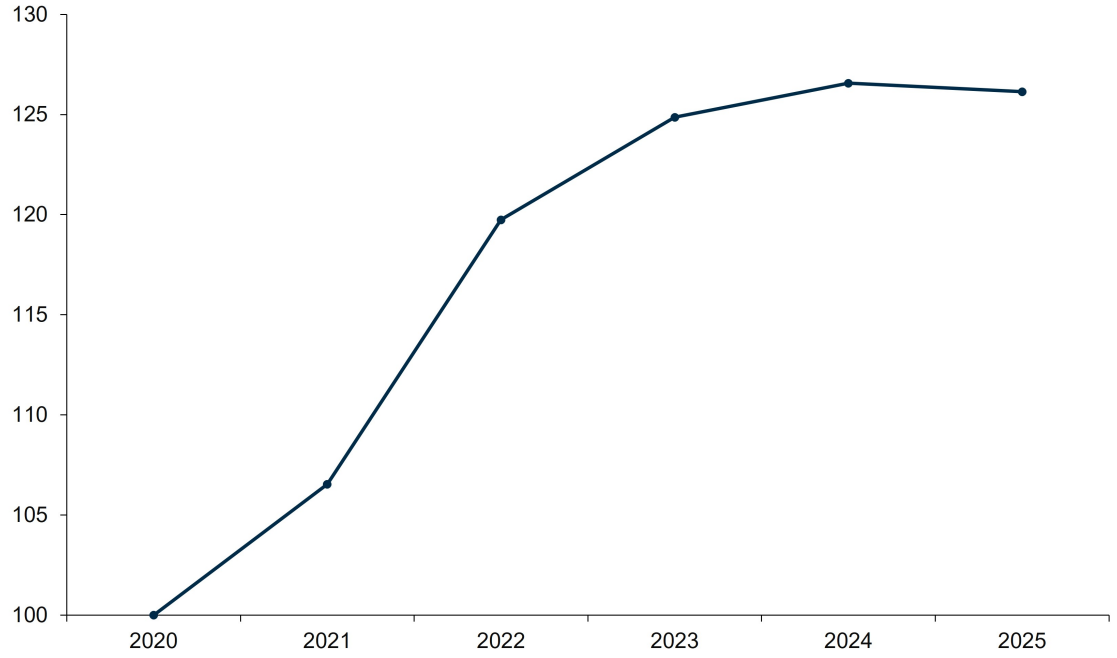
Rampant service price inflation
Russia's invasion of Ukraine and a slew of lockdowns in China have exacerbated supply chain constraints, labor and material shortages. Severe service price inflation is now commonplace as raw material supply is threatened by battered supply chains and skyrocketing energy prices. Figure 3 shows the steep rise in pricing for well services and commodities from 2020 to the present and the anticipated plateauing in costs post-2023. While inflation might be expected to cool down over the mid-term, following an anticipated easing of supply chains and red-hot commodity prices, well-related costs are likely to remain elevated for the near future.

Figure 3: Well services and commodities inflation, global trend
Indexed 2020 = 100



Source: Rystad Energy Cost Solution, Rystad Energy Service Price Inflation Analysis, June 2022

Key drivers
Drilling down on the categories mentioned in Figure 2, we find that evaluation services, drilling services and well intervention services have large labor components associated with their costs meaning that any change in industry compensation trends will have a significant impact on these categories. Drilling materials, such as wellheads and oil country tubular goods (OCTG), is a steel-intensive category. With drilling activity poised to grow, demand for metals such as steel will remain robust while production faces a plethora of challenges ranging from production curbs in China to high prices for steelmaking inputs – iron ore and coal. Drilling materials, therefore, is likely to be severely affected by the rally in steel prices. While prices for key raw materials are now easing from the highs seen in recent months, spiking input costs for equipment have yet to feed through, owing to the lag between material procurement and delivery of final goods. This means that inflationary impacts are felt at different times for stakeholders depending on their position in the supply chain. The soaring cost of energy, especially in Europe, will have a detrimental impact on manufacturing costs which figure abundantly in the drilling equipment category. Figure 4 shows the change in the producer price index (PPI) for the US and Norway, two principal manufacturing hubs for drilling equipment. The PPI measures the month-on-month change in prices received by producers for their goods, excluding taxes and distribution costs.

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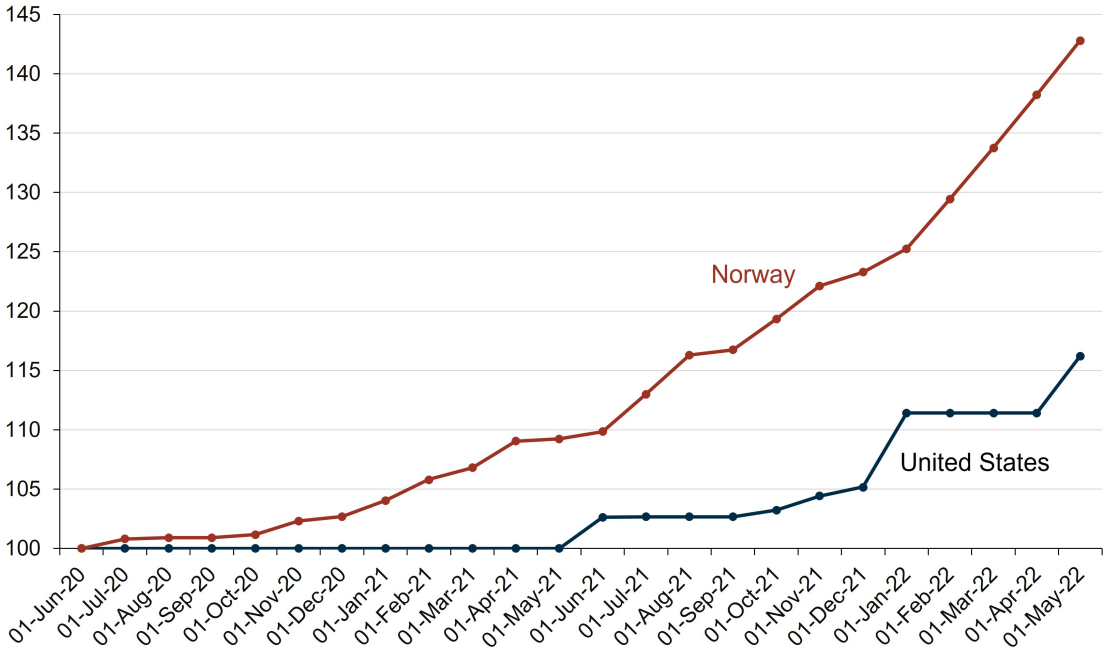
Figure 4: Producer price index, oil and gas equipment
Indexed June 2020 = 100



Source: Rystad Energy Cost Solution, Rystad Energy Procurement Cost Calculator, June 2022

Rising wages
After a pandemic-induced downturn in 2020, a resurgence in oil prices is propelling a recovery in the labor market. While demand for workers inches towards pre-pandemic levels, job market volatility and a continuous boom-and-bust cycle in the oil and gas industry are inspiring workers to pivot away from fossil-fuel related roles, contributing to labor scarcity.

High material costs
Key materials for the upstream oil and gas industry such as iron, steel and industrial chemicals have seen unprecedented highs in the run up to 2022. Despite some recent declines in price, their outlook continues to be bullish for the most part. OCTG which typically makes up around 15% of the D&C budget for a well has seen historic high prices across regions. The US is facing shrinking OCTG inventories with uncertainty around import supply compounded by high anti-dumping duties. With steel prices expected to remain high, any significant respite in prices seems unlikely. Prices for industrial chemicals have also been on an upward trajectory with prices rising close to 34% in Norway, 66% in the US and 32% in Australia compared to June 2020 levels. Chemical costs make up a sizable part of well intervention costs alongside D&C fluids categorized under drilling services. The cost of measuring and controlling devices in the US has increased 8% compared to June 2020. This rise is an illustration of increasing component costs for meters and measurement devices which are used throughout well services that fall under the evaluation services category.

As the threat of inflation looms large, central banks are implementing measures to combat runaway price rises. While this may help cool down the market in the medium to long term, for now it will raise borrowing costs, adding to existing inflationary woes. Geopolitical uncertainty and the subsequent spike in oil prices are boosting volatility in global markets and in the oil and gas industry. Equipment manufacturers and oilfield service providers will be looking to transfer high input costs to their customers as their margins are pinched due to burgeoning inflation across geographies.

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