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Microsoft

# Transforming The Energy Sector With a Data-Powered Platform

Optimize assets and workflows to  
achieve faster differentiation with data  
management and governance

The global energy sector is under relentless pressure from geopolitical upheaval, regulators and politicians, a worldwide pandemic that's upended normal demand signals across the value chain, and a glut of excess refining capacity as the transition to renewables gains pace.

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To protect profitability, energy companies are updating their business models to embrace digital transformation and sustainability.

While oil and gas companies started adopting digital technologies in the 1980s and undertook a wave of digital oilfield initiatives in the 1990s and early 2000s, for most of the 2000s, the industry hasn't taken full advantage of the enormous volumes of data it generates.

One drilling rig can generate a terabyte of data in a single day. Yet only a tiny fraction of what's gathered is used for decision-making. Leveraging all the data at their disposal could help industry leaders manage an expanding range of domains in their strategic decisions.

Oil and gas firms are working to bring other energy formats into the mix. Norwegian oil and gas operator Equinor says it now operates with a 'dual mindset,' fulfilling customer needs as efficiently as possible while getting ready for the coming circular economy.

Customers and regulators are determined to keep sustainability on the agenda for every business that depends on carbon. Better data management can give oil and gas executives more tools to reduce their carbon footprint and improve sustainability.

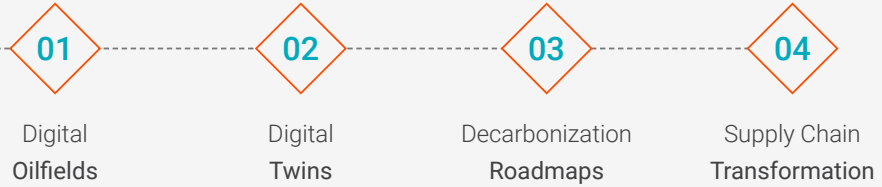
According to the *Journal of Petroleum Technology*, data is the secret to the industry's sustainable future: "Understanding the impact of oil and gas operations and embracing transparency around data better equips companies to take transformative action and "bounce forward" rather than back. The increased speed in realizing actual value delivers benefits to the bottom line, now and in the energy future".<sup>1</sup>

### Leaner and greener

Getting there, however, will involve greater investment in technologies like cloud computing, analytics, and IoT-enabled sensor networks. Energy firms know they can improve the speed and accuracy of decision making in order to achieve business objectives. But significant improvements must happen in the context of better quality and availability of operational data.

<sup>1</sup> JPT: Data and Sustainability: 2021: <https://jpt.spe.org/data-are-the-sustainable-secret-to-a-more-profitable-future>

The goal is to strengthen capabilities in data gathering and analysis use cases like:



Despite growing volumes of subsurface and other data sources, a rich vein of operational data remains untapped, locked up in on-premises systems and a complex legacy of fragmented application and system environments across the sector.

### The promise and challenge of the Open Subsurface Data Universe (OSDU)

The energy sector's complicated IT landscape makes data management difficult. Duplication of effort is a common issue, along with isolated approaches to fixing problems that aim to make data more available — but differ from company to company.

Even when planning and operating teams can access field data, they can't always trust it. Visibility into the data's source may be missing. Lineage and validation history, for example, are often absent or obscured.

To address these issues, the energy industry is working to create a unified data environment across upstream, midstream, and downstream operations. The Open Subsurface Data Universe™ (OSDU) platform is the result. It's an open and transparent reference architecture running on Microsoft Azure.

Managed by the OSDU Forum, the new platform is a collaboration between energy companies, cloud services providers, academic institutions, and other stakeholders to create a unified energy data environment. OSDU aims to ensure seamless access to the full range of subsurface exploration and well data, along with data from renewable generation sources including wind, solar and hydrogen.

To benefit fully from OSDU, energy firms need a cloud data management solution that supports intelligent automation, collaboration and governance. That way, energy companies can make better decisions about investments in people, processes, and infrastructure.

## Redefining the cloud data platform for the energy sector



### 01 Reimagine

Adopting OSDU can help **unlock data across up-, mid- and downstream operations**. It helps **eliminate data silos between teams** and set the stage for a single **coherent operation** from exploration to production and beyond. It can turn an ocean of disconnected data into a single resource that enables users across the business to optimize operations and make better data-led decisions.

Teams in every niche of your energy operation can use powerful self-service data capabilities to enrich and optimize workflows, applications, and reports.



### 02 Release

Release intelligence trapped in legacy systems and data silos with frictionless data integration and access that **power new insights and initiatives** wherever people are working.

OSDU can pull subsurface data out of existing application and system silos so different teams can apply analytics. That spreads the benefit of the sector's untapped data across the business, improving operations, reducing costs, and driving new innovations.



### 03 Re-energize

Fuel productive, resilient business as usual with the widest, most relevant actionable data from across the enterprise. Adopting OSDU can **integrate operations across the enterprise** and ensure data stored across different applications and systems is shared between teams and organizational levels.

This requires the successful management and governance of the most complex, disconnected, and highest volumes of energy operations data—including subsurface data.

## Why energy businesses should modernize data in the cloud

Cloud-based data management and governance can transform the energy industry's murky wells of operational data into valuable sources of business insight. It places data in context and automates processes like discovery to enable every department to optimize operations and make data-driven decisions.

Every user needs confidence that the information they're basing analytics on is accurate, understood, and ethically managed.

Teams across up-, mid- or downstream operations can take advantage of self-service capabilities to streamline workflows, improve applications, and turn reports into a source of actionable insight.

- Ensure individuals, teams, and supply chain partners have **access to trusted information** when they need it
- Identify **new business opportunities**
- Energize **research and development**
- Upskill for a **data-driven business culture**
- **Empower users** across the business for data and analytics self-service
- Enable **new customer experiences**

To maximize the value of OSDU, oil and gas firms need enterprise-level cloud data solutions that keep existing application and data environments in place while enabling data separation for faster analysis and insight. By using software-as-a-service (SaaS) data models that support intelligent automation, collaboration, and scalability, operators can fully leverage the cloud to share data and better manage people, processes, and infrastructure.

## Energy sector partnership

To power growth, data must flow freely. In the energy sector, that means making certain that operational data is trustworthy. Every user needs confidence that the information they're basing analytics on is accurate, understood, and ethically managed.

It doesn't matter if the objective is to maximize value from existing assets, create better customer experiences, or identify new growth opportunities in renewables; improving the quality and availability of their operational data is the essential first step.

Informatica, Wipro, and Microsoft have joined hands to help operators plan and execute the technological and operational shift to OSDU. With Informatica's Intelligent Data Management Cloud (IDMC), Microsoft Azure and Wipro Oil & Gas consulting services, we have the platforms, solutions and domain expertise to make the transition painless.

Today we're helping oil and gas operators speed and simplify their OSDU transformation journey, delivering complete architectures and roadmaps to rapidly improve data quality and availability. We overcome data challenges at enterprise scale, and leverage AI and ML to automate data management tasks and operational workflows.

## Meet the Experts



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Let us help you map the way to your  
OSDU objectives. Find out more [here](#).



#### About Informatica

At Informatica (NYSE: INFA), we believe data is the soul of business transformation. That's why we help you transform it from simply binary information to extraordinary innovation with our Informatica Intelligent Data Management Cloud™.

Powered by AI, it's the only cloud dedicated to managing data of any type, pattern, complexity, or workload across any location — all on a single platform. Whether you're driving next-gen analytics, delivering perfectly timed customer experiences, or ensuring governance and privacy, you can always know your data is accurate, your insights are actionable, and your possibilities are limitless.

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#### About Wipro Limited

Wipro Limited (NYSE: WIT, BSE: 507685, NSE: WIPRO) is a leading global information technology, consulting and business process services company. We harness the power of cognitive computing, hyper-automation, robotics, cloud, analytics and emerging technologies to help our clients adapt to the digital world and make them successful. A company recognized globally for its comprehensive portfolio of services, strong commitment to sustainability and good corporate citizenship, we have over 220,000 dedicated employees serving clients across six continents.

Together, we discover ideas and connect the dots to build a better and a bold new future. We invite you to explore all that Informatica has to offer - and unleash the power of data to drive your next intelligent disruption.

#### Microsoft for Energy

Microsoft enables energy companies to drive digital transformation, accelerate decarbonization, and achieve growth. With Microsoft, energy operators and providers have access to a global partner ecosystem and modern productivity platform at the scalability and reach they need with the security to protect their IP assets, operations, and data. By uniting productivity, intelligent cloud, intelligent edge, AI, and big data platforms, Microsoft helps energy companies solve their most complex challenges, innovate fast, and deliver better customer and social outcomes.

To learn more visit the [Microsoft for Energy industry solutions website](#).

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