



Upstream Oil and Gas

Transactions & Valuations Consulting



0001	0.45	▲	+0.45%
0002	-0.23	▼	-2.34%
0003	-1.01	▼	-1.89%
0004	0.02	▲	+0.21%
0005	+2.58	▲	+3.05%
0006	-0.14	▼	-1.42%
0007	-0.73	▼	-0.90%
0008	+1.08	▲	+5.12%
0009	-0.87	▼	-3.88%
0010	-0.85	▼	-1.37%

SELL BUY

The upstream oil and gas industry is in the midst of one of its largest transitions. Recent low and volatile oil and gas prices, as well as the growing proportion of the global supply wedge that is coming from difficult technology plays that demand more specialization, have challenged existing business models forcing companies to reexamine their value propositions, portfolios and strategies. Having emerged from a period of low oil prices, companies have been able to reach agreement on transaction values leading to a distinct uptick in merger and acquisition (M&A) activity. Coupled with the emergence of specialists bringing highly focused strategies into play, the scene looks set for continued activity.

IHS Markit can help you evaluate major hydrocarbon investments and screen upstream M&A opportunities with our independent, quantitative strategic due diligence analysis that focuses especially on underlying energy value drivers and risks. Our services are underpinned by our extensive in-house data, analytics and tools, ranging from global E&P data and asset valuation to transactions data and research.

Benefits of IHS Markit Transactions & Valuations Consulting

- Integrated subsurface, cost and development, technological and commercial evaluation
- Special attention to underlying value drivers, including fiscal and political factors
- Leading experts and comprehensive in-house data
- Proven methodologies and transparent analysis
- Strong reputation based on deep experience
- Coverage of the entire energy value chain, from upstream oil and gas through to infrastructure, downstream and chemicals

Our Key Transaction & Valuation Offerings Include



Technical & Commercial
Due Diligence



Asset & Corporate Valuations



M&A Cycle Support

IHS Markit Upstream Oil & Gas Consulting covers all stages of business development, new ventures and M&A

Strategy development

- Develop alternative strategic growth options
- Analyze risks and benefits for generated scenarios
- Prepare sensitivity analysis
- Prepare recommendation to deliver optimum strategies

Assess target regions, assets, companies

- Basin, play and country screening/identification
- Asset/company and partner identification
- Preliminary market and competition valuation and assessment

Country risk assessment

- Assessment of key issues affecting value, operation, safety etc.
- Assessment of country entry strategies
- Risk identification and mitigation strategies

Data room & valuation

- Technical and commercial due diligence support
- Market/pricing studies
- Valuation and M&A support

Investment decision support

- Assess investment decisions using scenarios
- Economic impact assessment of proposed investments
- Quantification of risk and benefits
- Preparation support for Board or senior management investment approval documents

Bid support and beyond

- Analysis/provision of data to support negotiations
- Post acquisition integration support
- Cost assessment of acquisition/assessment of synergy value



Our Transaction & Valuation offerings are broken down into three key categories:



Technical & Commercial Due Diligence

- Evaluation of resources, development plans, costs, regulatory landscape and the underlying markets
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Asset & Corporate Valuations

- Bottom-up valuations for oil and gas assets worldwide, upstream energy company valuations using trading multiples, asset valuations based on precedent transaction metrics, leveraging our database of 45,000+ M&A transactions over the past 20 years
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M&A Cycle Support

- Support for screening, origination, executing and negotiating deals to a close, including bid preparation, data room support, and post-acquisition integration

Technical & Commercial Due Diligence

- Assessment of basin and play geology, reserves/resources and productive capacity
- Assessment of development concepts and cost estimates
- Decommissioning assessment (strategy and cost)
- Regulatory reviews, oil/lifting and gas contract reviews, crude quality and pricing assumptions
- Evaluation of key risks across full technical/commercial spectrum
- Valuation of synergies
- Validation of strategy; strategic alternatives
- Country risk assessments
- Market overview and sizing, potential outlooks
- Economic evaluation using applicable fiscal terms

Asset & Corporate Valuations

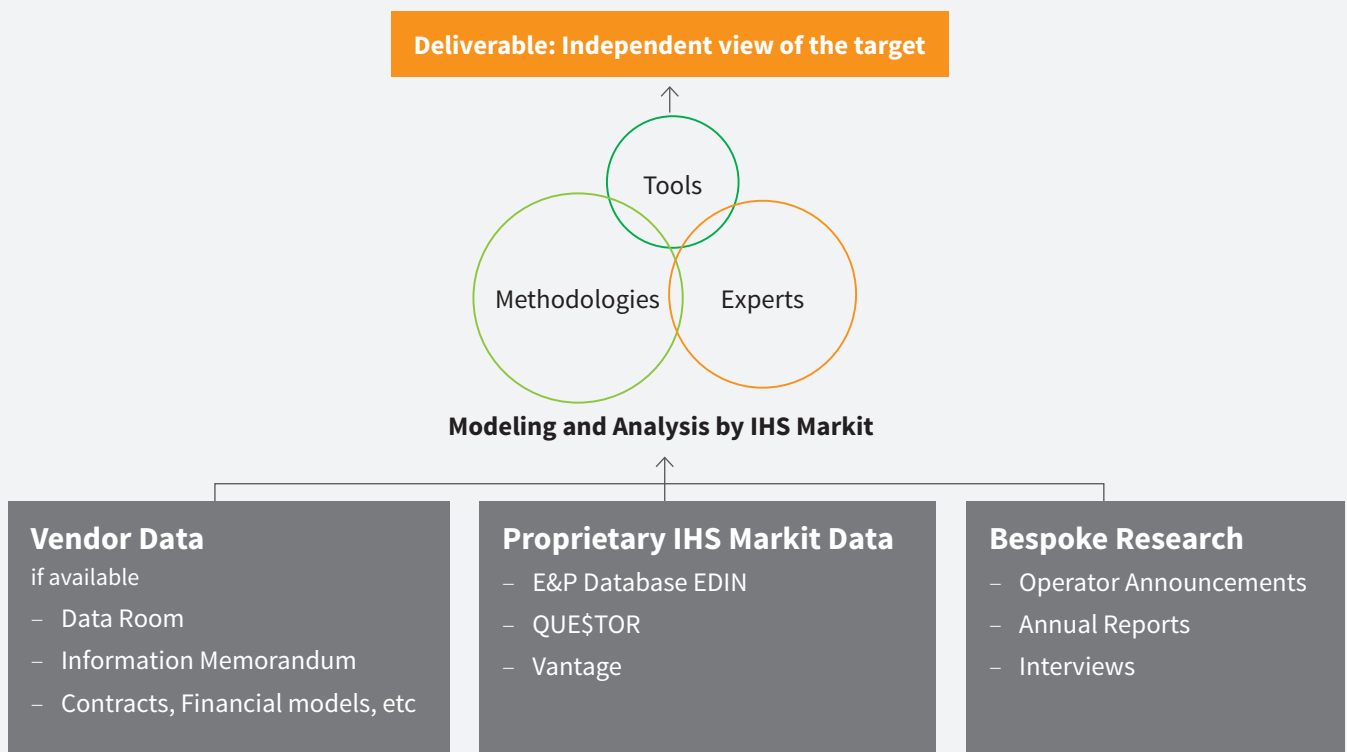
- Screening for asset and company opportunities
- Generation and validation of critical assumptions for evaluation: production profiles, development costs, pricing and macroeconomic outlooks
- Creation of customized valuation models
- Valuation of potential targets and sensitivity analysis
- Precedent transaction analysis; assessment of recent M&A trends

M&A Cycle Support

- Support with origination efforts and through transaction execution phase
- Data room support
- Negotiation support
- Board approval support and investment decision validation
- Portfolio management support
 - Project development
 - Regulatory compliance, risk analysis and quantification
 - Strategy
- Bid-round support
- Support with bankruptcies, financings, and public offerings
- Reserves certification
 - Technical/reservoir and facilities management
 - Cost estimation
 - Energy market analysis on trends, risks, policies, etc.

Approach and Methodology

In due diligence, IHS Markit consultants combine the comprehensive in-house databases, tools and services with our expertise and tested methodologies, as well as any data provided by the vendor, to come up with an independent expert view of the target asset/company.



Case Studies

Global Diversified Portfolio



Situation

An Asian sovereign wealth fund required comprehensive valuation and strategic due diligence support for its bid on a multi-billion dollar global E&P portfolio. The portfolio consisted of more than 300 assets and prospects, including upstream assets at various field life cycle stages, midstream and LNG facilities and exploration prospects spread across the globe.

Solution

Upstream Oil & Gas Consultants:

- Identified key risks and opportunities associated with the portfolio and generated and validated critical assumptions, ranging from production through development concepts, to market analysis, pricing projections and regulatory risks
- Created a customized valuation model that included both Discounted Cash Flow and multiples-based valuation, enabling overall probabilistic distribution analysis and analysis by asset level and geography

Result

IHS Markit provided the client with an independent, unbiased portfolio evaluation that identified internal and external risks and opportunities.

It included detailed qualitative reports, spreadsheet models and due diligence commentaries, supporting the initial and final bids and detailed deal structure.

The proposed value range enabled the client to table a successful bid for the share in the target portfolio.



North Sea Infrastructure

Situation

A private equity firm required an independent assessment of North Sea gas supply to support an investment decision for existing processing and pipeline infrastructure. The infrastructure was comprised of gas processing plants and pipelines, and the core analysis was to understand downside risk to supply and identify upside volumes.

Solution

Upstream Oil & Gas Consultants:

- Identified gas volumes transported through the pipelines
- Leveraged IHS Markit's EDIN and Vantage products to create gas production supply outlooks for each pipeline under consideration, then further qualified the outlooks to add confidence to anticipated volumes into the pipeline and processing facilities
- Leveraged our experts to provide detailed field/asset summary sheets. Notional volumes were supported by IHS Markit exploration experts and Yet to Find analysis
- Provided supporting insight, context, and analysis on the wider UK market issues (e.g., regulations, supply and demand)
- Included detailed information on existing and competing infrastructure to assets under consideration

Result

The study was used to provide a forecast of the gas supply throughput for the infrastructure under consideration, and gave the client increased confidence in making its investment decision.

The client secured the financing to proceed with the investment decision, and made a successful acquisition.



North American Shale Partnership

Situation

A large corporation in Japan was interested in evaluating and validating a buy-side partnership opportunity in a shale play in North America and understanding how the offer and carried CAPEX terms of the transaction would impact corporate metrics of net income and cash flow.

Solution

Upstream Oil & Gas Consultants:

- Developed a probabilistic valuation model, identified and evaluated key value drivers, and tested key assumptions provided by the seller
- Created an economic model that incorporated all terms including a flexible option from the partnership deal structure
- Provided key economic metrics for evaluating the opportunity (ROR, NPV10, Payout and IRR)

Result

The client used the probabilistic valuation model to analyze the partnership opportunity against a range of technical and nontechnical uncertainties and to evaluate the overall deal structure and terms.

As a result, a successful offer was tabled for the partnership opportunity.



Oil Service Industry

Situation

An investment bank was evaluating acquisition target in the oil service industry. The client wanted to have a forecast for well services activity in the region under different scenarios. The client also wanted to understand main drivers for profitability and activity level of oil service companies.

Solution

Upstream Oil & Gas Consultants:

- Generated oil and gas production outlooks for each relevant country in the region including fields under production, development, appraisal and future exploration
- Generated a detailed forecast for well drilling activities and rig requirements by type based on oil and gas production outlooks
- Used the outlook to estimate drilling rig day-rates for each scenario and to estimate well service companies' revenues and market share

Result

The client developed a clear understanding of the key drivers of service industry's activity and profitability and their changes across different scenarios. In addition, the client received scenario-specific market value assessment and revenue outlooks for oil service industry in the region of interest.

Explore the information and analytical tools we use daily

Vantage®

Vantage provides detailed valuation analysis for 15,000+ upstream oil and gas assets in a powerful online platform.

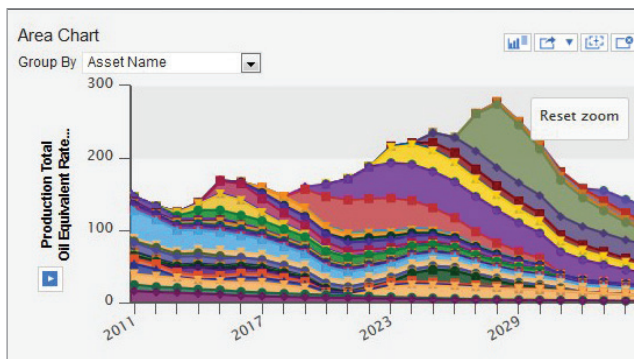
Leveraging the same proprietary IHS Markit E&P data and industry intelligence used by geology teams, Vantage values assets through engineered workflows, for both conventional and unconventional global assets with forward-looking production.

Vantage enables business decisions and commercial planning to be made efficiently, based on current knowledge and valuations prepared using engineered outlooks drawn from IHS Markit expertise in production, cost and field development planning and fiscal terms. In addition, each project within Vantage undergoes individual analysis by our team of 75+ geologists, engineers and economists.

Within minutes, users can screen, rank and compare assets based on performance results, breakeven prices or valuation under alternative price scenarios.

E&P and financial industry clients rely on Vantage's unparalleled global coverage to optimize these workflows:

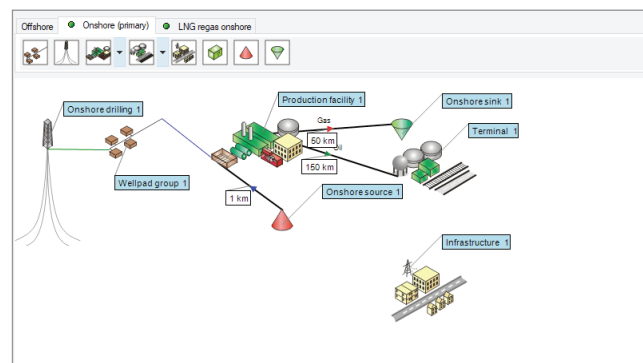
- Opportunity screening
- Performance benchmarking
- Oil and gas asset valuation



QUE\$TOR®

Used by more than 500 energy estimators and managers in 50 countries, QUE\$TOR from IHS Markit provides concept screening, optimization and detailed oil and gas CAPEX/OPEX cost estimates. The QUE\$TOR application suite includes QUE\$TOR Offshore, Onshore and LNG Regasification modules. With our comprehensive cost database for numerous attributes, technologies and equipment, cost estimation engineers, financial analysts, executives and M&A analysts use the software to:

- Accurately model oil/gas expenditures and production
- Create development scheduling
- Save hundreds of hours in research and analysis
- Support feasibility and pre-FEED studies and concept selection
- Support cost management for multiple upstream, LNG and offshore projects
- Access latest global cost information with bi-annual updates on more than 60,000 cost points



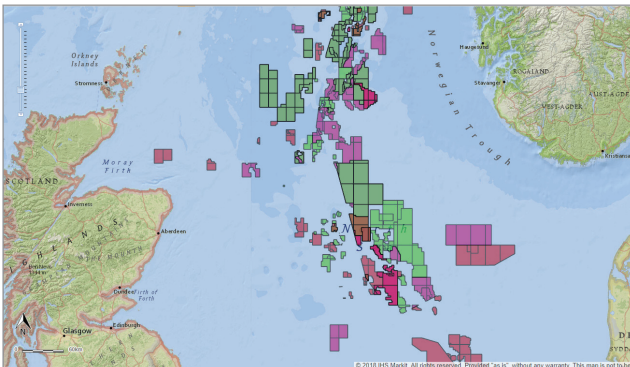
EDIN + IHS Markit's E&P Database

EDIN offers geologists, reservoir engineers and business analysts quick and easy access to continuously updated IHS Markit's international E&P and midstream databases using standard web browsers. Access the latest oil and gas data to:

- Generate, evaluate and export the most recent information
- Save time and money with IHS Markit data storage and maintenance
- Make faster, smarter investment decisions

At IHS Markit we remain committed to providing our customers with the most comprehensive exploration and production information. Our International Energy Information provides global coverage of energy data sourced through both the public and private domains using an unparalleled communication network with operators, national oil companies, government agencies and service companies.

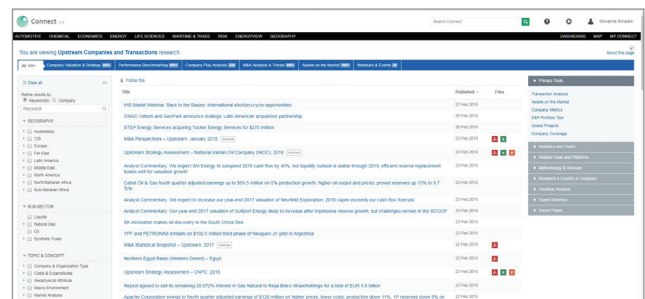
Our regional teams are positioned around the world and are proficient in more than 35 languages. They publish information relating to current E&P activity as well as improving historical data through detailed research. The data is gathered and reported daily by more than 140 in-country correspondents and IHS Markit professionals.



Companies and Transactions Data and Analytics

Companies & Transactions provides in-depth valuation and analysis on the world's leading oil companies, including key insights and timely analysis on major events affecting a company's valuation, strategy, and performance throughout the year. They also provide detailed information on announced energy transactions including proprietary transaction valuation data and independent pre-deal valuation analysis and insights on assets and companies for sale.

- **Transaction Database:** Online database featuring a range of search parameters to identify deal comparables, including all global regions, energy subsectors, transaction value ranges, and individual buyers and sellers. Provides access to over 45,000 historical transactions over 20+ years, all benchmarked to commodity prices at the time of the deal
- **Assets on the Market Database:** Searchable and exportable database that actively tracks all known energy assets on the market, covering all global and regional locations and all resource segments, detailing valuations and full operational data including reserves, production and acreage
- **Company Metrics:** Comprehensive financial and operational database and performance benchmarking, covering over 400 active publicly traded companies, and more than 400 out-of-business or acquired companies
- **E&P Portfolio Tool:** Interactive interface of company production, both historical and new source volumes at the global, regional, country, and field levels
- **Private Oil Company Monitor:** Publicly available corporate, operational, and financial information for over 1,700 privately-held U.S. companies

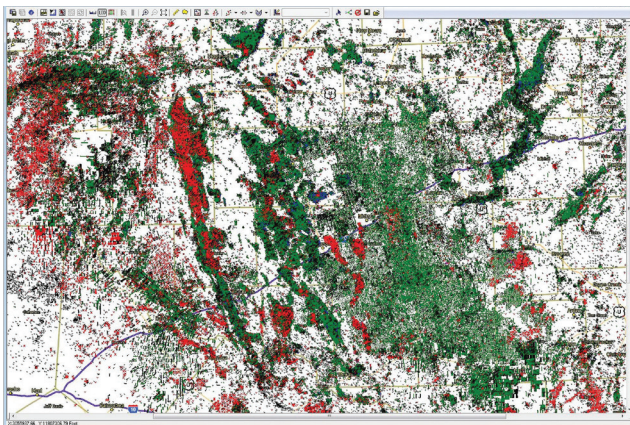


Kingdom™

Kingdom by IHS Markit integrates geoscience, geophysics and engineering into a single, easy-to-use software solution, enabling asset teams to make confident and faster decisions from exploration to completion. Our solutions are simplified, giving you access to advanced geoscience/scientific tools that are affordable, easy to learn and install and come with excellent support and training. Optimized for unconventional, conventional and deep water plays, Kingdom helps assess the potential of regional geologic trends or discover where assets are underperforming, all within a singular, cost effective and easy to learn environment.

Kingdom enables:

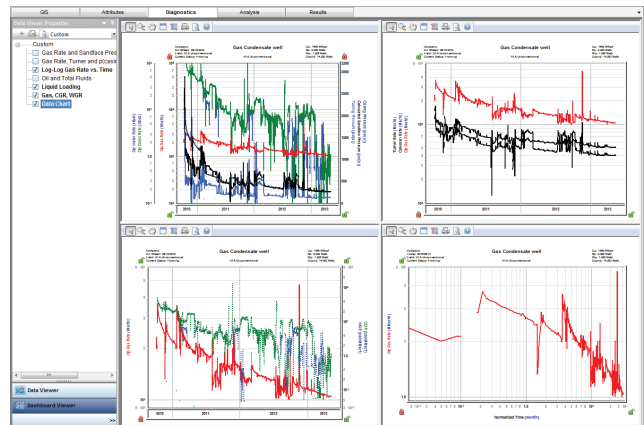
- **Better Collaboration** - increases productive geology and enables better predictions
- **Higher Productivity** - complete 90% of key workflows and reduce cycles time by half through streamlined workflows, increased performance with large projects, and reduced bottlenecks through shared data and workflows
- **Ease of Use** - allows for more time spent on geoscience and engineering versus learning how to use your software
- **Sophisticated Data Management** - manage 1,000,000+ wells while avoiding duplication and lost data
- **Lower Cost of Ownership** - Save an average of 6 times the cost over the nearest competitor as Kingdom increases performance and scalability while lowering the cost of high technology software and systems



Harmony®

Now available in a single or multi-user platform, Harmony is a comprehensive engineering application for analyzing oil and gas well performance and evaluating reserves. Access a full suite of reservoir and production engineering tools in one interface. Create common corporate workflows that harness your organization's technical expertise and share interpretations to determine the best asset development strategies.

- Extract maximum value from well performance data
- Reduce IT overhead and training efforts by utilizing one integrated software package
- Create rigorous Typewells (Type Curves) and forecast reserves
- Monitor well production through customizable diagnostic dashboards
- Assess reserves risk with probabilistic forecasting
- Run 'what If' scenarios to assess the impact of alternative well spacing, completion design, or artificial lift mechanism





Meet our Experts



Jon Story,
Executive Director

Mr. Story is responsible for managing a team of upstream specialists to deliver consultancy services to clients in Europe and the Middle East. He has more than 25 years of experience in the oil and gas industry. Prior to joining IHS Markit, he was European head of oil and gas clients for Standard Chartered Bank in London, UK. He spent 15 years as a managing director leading M&A teams with Standard Chartered and prior to that, Harrison Lovegrove and ABN Amro.

Mr. Story began his career as an engineer with BG E&P, and subsequently worked for Hardy Oil and Gas and British-Borneo Oil and Gas. Mr. Story graduated from Cambridge University, UK, with an MEng in Chemical Engineering.



Justin Pettit,
Executive Director

Mr. Pettit is an oil and gas industry leader with 25 years of experience. Mr. Pettit entered the oil and gas industry in 1992, as a senior business planner with Norcen Energy Resources, after working as a process technology and development engineer in the U.S., Canada and West Germany in the 1980s. He went on to a successful career on Wall Street, and as a former Booz & Company partner, he was in the energy and chemicals practice and global co-lead of M&A advisory.

Mr. Pettit holds a BAsC in Mechanical Engineering from University of Toronto, Canada, and an MBA from Western University, Canada. He completed continuing education in Petroleum Geology, at TU Delft in The Netherlands and Reservoir Geomechanics at Stanford University, U.S., and is active with the New England Chapter of Society of Petroleum Engineers (SPE). He has been published in many business journals, including Harvard Business Review and Journal of Applied Corporate Finance.

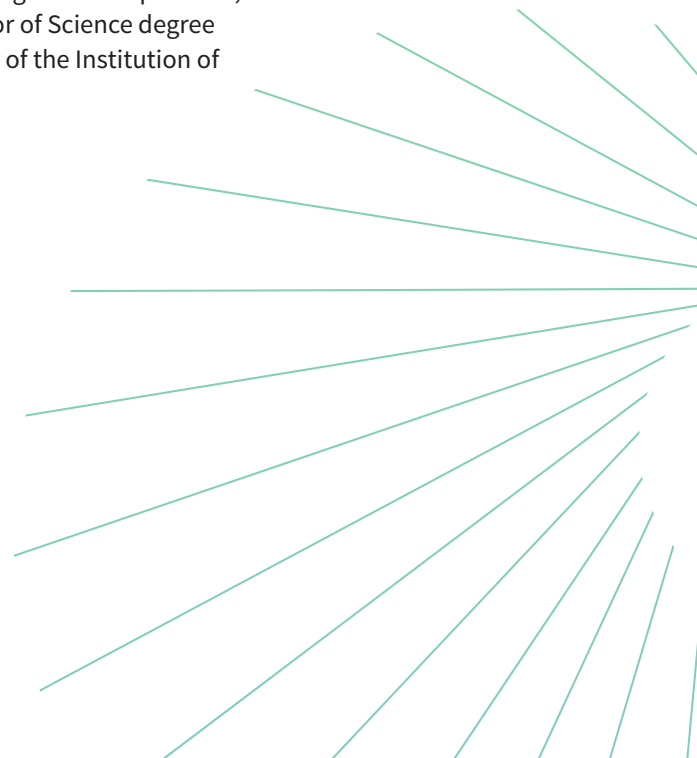


Mr. Andrew Day, Executive Director

Andrew Day, oversees field development, cost engineering and supply side market intelligence consulting.

During his 25 years at IHS Markit, Mr. Day has led consulting teams undertaking oil and gas field design, engineering, and CAPEX and OPEX cost estimation consulting solutions to the industry including market outlooks and supply side market intelligence. Working closely with research and product teams, Mr. Day has also been directly involved in the development and consultation of IHS Markit's cost research and tools, including UCCI, UOCI, Vantage, QUE\$TOR and OPE\$T.

Throughout his career, he has provided his expertise to customers on worldwide projects of all sizes, including regional development plans, due diligence, field development planning and conceptual engineering, as well as other areas of expertise encompassing market forecasts, process design, subsea processing and commissioning. Prior to joining IHS Markit, he was a process engineer for Humphreys & Glasgow/H&G Engineering, working on the design and commissioning of a wide range of projects including subsea separation, the Miller oil field, Ammonia and oil refining. Mr. Day holds a Bachelor of Science degree in Chemical Engineering from Aston University, UK, and is a member of the Institution of Chemical Engineers.



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About IHS Markit

IHS Markit (Nasdaq: INFO) is a world leader in critical information, analytics and solutions for the major industries and markets that drive economies worldwide. The company delivers next-generation information, analytics and solutions to customers in business, finance and government, improving their operational efficiency and providing deep insights that lead to well-informed, confident decisions. IHS Markit has more than 50,000 key business and government customers, including 85 percent of the Fortune Global 500 and the world's leading financial institutions. Headquartered in London, IHS Markit is committed to sustainable, profitable growth.

Our consultants are a part of IHS Markit's Upstream Insight team, delivering actionable commercial and strategic advisory services to help decision-makers maximize their opportunities for value creation through investments in the global E&P sector. Our team of industry experts analyze the interplay of geopolitical structures, government priorities, corporate strategies, and global markets and technologies to deliver forward-looking insights and solutions that lead to more informed and efficient decisions. Upstream Insight's solutions are available via recurring reports, interactive analytics, robust datasets, and bespoke engagements with experts.

CUSTOMER CARE

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