



IHS Markit™

# International Upstream Database



# IHS Markit's International E&P and Basins information is the most comprehensive and reliable dataset available to oil and gas industry professionals today.

Commercial and subsurface workflows are greatly enhanced by our content and expertise which can be accessed through dedicated IHS Markit tools or by direct connection to many industry-standard analytical and spatial platforms.

With technical teams positioned around the globe, up to date E&P data is researched daily by our regional, highly experienced experts with proficiencies in more than 30 languages and covering more than 215 countries. Our teams maintain an unparalleled communication network with operators, national oil companies, government agencies and service companies worldwide enabling the tracking, reporting and analysis of industry activity providing critical detail for decision makers.

Our content enables our users to assess opportunities at any scale. Providing detailed insights across the exploration and production arena, from regional prospectivity to company portfolio benchmarking.

## **Opportunity Screening**

- Analyse country and basin entry opportunities such as available farm-ins and license rounds, gain critical insights into peer group activities and exploration trends including recent discoveries and key high impact wells.

## **Basin and Play Analysis**

- Use the wealth of geologic detail contained within IHS Markit's exploration and production database to assist with regional to play scale basin analyses and understand petroleum systems and play fairways.
- Use our extensive well coverage to high-grade the most prospective basin areas. Understand the risks and opportunities of established and prospective plays including reservoir-level volumetrics.
- Undertake systematic basin & reservoir analogue research with our extensive reservoirs database at your disposal.

## **Competitor Intelligence**

- Gain strategic insights into peer group activities and exploration trends including recent discoveries and key high impact wells.

## **Commercial Planning**

- Determine your partnering and investment strategies through company performance benchmarking and gain insights into technical play expertise.
- Evaluate contract terms.

Access to more than 13,000 E&P and Basins attributes

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# Data Coverage and Quality



The depth and breadth of our content and coverage is second to none with International data sourced and transformed for more than 13,000 attributes in the following subject areas



### Basins & Basin Monitors

Worldwide geological data for basin analysis, play and petroleum system studies on regional and global scales.

**Basin Monitors** - comprehensive reports of a basin's petroleum geology, and exploration potential.



### Contracts & Blocks

Unique worldwide coverage of currently valid and historical E&P Contracts with their block and right-holding companies over time.



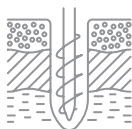
### Companies & Participants

Up to date details on companies and their subsidiaries, operating groups, operators and their participants with complete hierarchical ownership structure and M&A event history captured.



### Wells

Unique worldwide coverage of all exploratory and development wells.



### Fields

Comprehensive coverage of exploration stages, geological descriptions, reserves, production, development and production projects which mark the field life cycle.



### Surveys

Seismic, gravity and magnetic survey information and survey navigation 2D lines and 3D areas.



### International Coverage

Global Coverage excluding US and Canada but including East Coast of Canada, the North American Arctic and the US federal offshore areas including the Deepwater Gulf of Mexico (DWGOM) and the Atlantic and Pacific sea boards.

## Data Coverage & Quality

More than 70 years of history gives us a unique perspective in converting raw source data into the actionable information required for making business decisions.

Our **unique, structured and rigorous quality program** is fundamental to our people and our operations and continually drives further data improvements according to our customers' needs.

We provide regular customer communications sharing key data improvements and quality goal progress.



Correctness



Currency



Completeness



Consistency

## Regional Expertise

In-depth analysis of source information by experienced, technical experts with a deep domain knowledge of both a region's subsurface and its commercial environment paired with an unrivalled industry scouting network.

## Applied Technology

Automated data entry scripts ensuring internal consistency across subject and weekly validation reports verifying completeness, consistency and currency.

## Spatial Validation

Spatial validations checking geodetic parameters, datum definition, entity dimensions and areas, locations, overlaps and gaps, consistency across data subjects.

## Quality Projects

Continually improving historical data through detailed research resulting in numerous quality projects completed year on year.

## Quality Goals

Structured SMART quality initiative and commitment to customers with metrics shared as projects progress.

## Quarterly Reviews

Regular customer communication sharing Quality Goal progress and key data improvements by module.





# Basins Database

Offering comprehensive analysis of more than  
560 sedimentary basins worldwide



## Basin Database

The IHS Markit Basin Database provides exploration teams with a unique framework in which to efficiently compare a basins geology, petroleum systems and plays on a global scale.

Our basin database is tightly integrated with our E&P information giving a genuinely unique insight into reserves and resource volumetrics by a reservoir, petroleum system, genetic unit or tectonic setting.

The database contains comprehensive descriptions of more than 560 basins worldwide, presented in our easy to digest Basin Monitor report.

Our dedicated team of experienced researchers obtain the latest information from a wide range of sources, including the most recently published academic research, conference presentations and more.

### The Basin Database supports a number of critical workflows;

- Basin reconnaissance
- Basin ranking and comparative studies
- Basin analogue studies
- Future exploration potential
- Petroleum system analysis
- Better understand play risk



**Geologic Provinces** — IHS Markit maintain the industry's only contiguous basin and sub-basin outline definitions, providing a truly global basin framework for comprehensive analysis



**Lithostratigraphy** — Over 33,500 formal and informal lithostratigraphic units are described in the stratigraphy database, capturing lithology, depositional environment, distribution, upper and lower contacts, type locality and bibliographic references providing a unique worldwide lithostratigraphic lexicon



**Basin Evolution** — the evolution and tectonic history of each sedimentary basin is characterised, and it's composite genetic units detailed



**Petroleum Systems** — greater than 1,400 known, hypothetical and speculative petroleum systems are described and key events and timings such as hydrocarbon generation, migration and preservation are documented



**Plays** — a comprehensive database of proven and potential plays describing the key parameters of associated fields and prospects



**Exploration, Development and Production History** — a synopsis of past activity, key discoveries and important events in the exploration of the basin



**Images** — including stratigraphic charts, tectonic, structural and stratigraphic distribution maps, representative geological cross-sections and seismic sections help to quickly understand the main characteristics of the basin



**Spatial Layers** — Including structural elements (major fault zones), oceanic features such as transform faults, oceanic magnetic anomalies and salt diapirs, worldwide gravity, and magnetic maps



**Comprehensive Bibliography** - easily establish the origin of source documentation with our bibliographic reference database

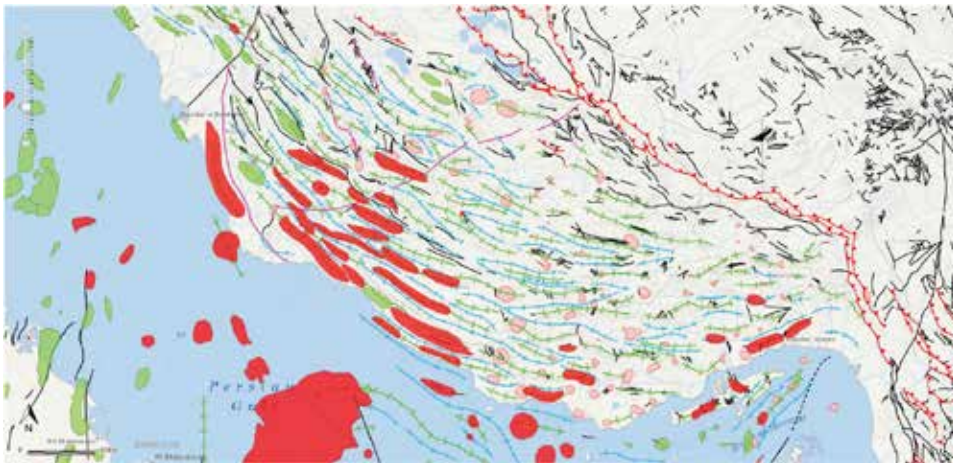




Our comprehensive basins database allows us to deliver unique geologic insights



**Intuitive basin classification**  
 A wide variety of criteria can be applied within a consistent framework, allowing for a wide variety of criteria to be applied when searching for analogue basins including basin maturity, geological, sedimentary thickness and plate location type



**Constantly updated spatial information**  
 Including contiguous basin outlines, structural elements, salt features, gravity and magnetic maps

TDIV

Basins List - Basins

Basin Name	Basin Profile Report	Atlantic Basin Name	Reference
East West Basin	East West Report	East West Basin	East West
East West Basin	East West Report	East West Basin	East West
East West Basin	East West Report	East West Basin	East West
East West Basin	East West Report	East West Basin	East West
East West Basin	East West Report	East West Basin	East West
East West Basin	East West Report	East West Basin	East West
East West Basin	East West Report	East West Basin	East West
East West Basin	East West Report	East West Basin	East West
East West Basin	East West Report	East West Basin	East West
East West Basin	East West Report	East West Basin	East West
East West Basin	East West Report	East West Basin	East West
East West Basin	East West Report	East West Basin	East West
East West Basin	East West Report	East West Basin	East West
East West Basin	East West Report	East West Basin	East West

**Easy access reports**  
 A wide number of reports containing detailed attributes per basins and sub-basin as well as statistical summaries are available.



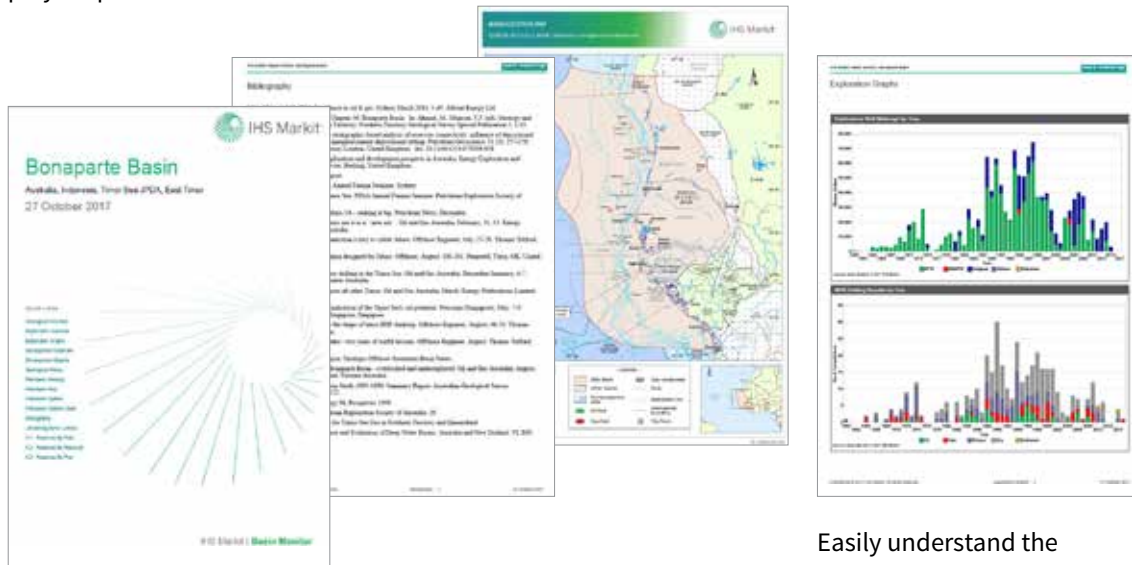
**Our Basin Monitor reports demonstrate our research pedigree by providing a synoptic Basin Analysis in a comprehensive easy to digest report.**

Designed to enable efficient access to the most relevant basin information, our Basin Monitor reports are updated in response to industry trends such as hot frontier basins, up-coming bid-rounds or emerging plays in mature basins .

Each report contains consistent details on basin location, structural setting, basin evolution, plays and petroleum systems including expanded sections on source, reservoir and seal, exploration and development history and future exploration potential.

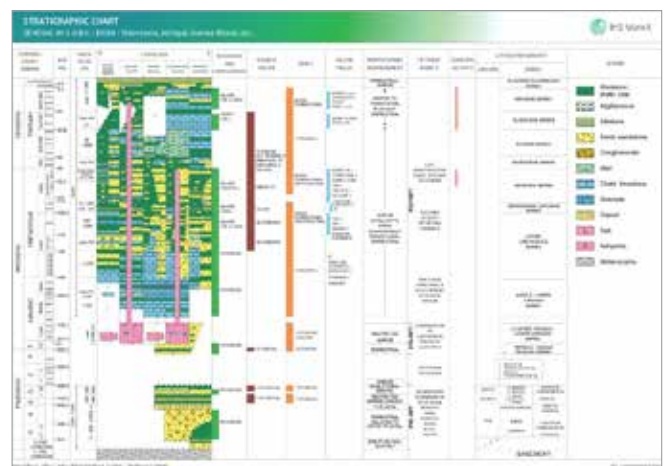
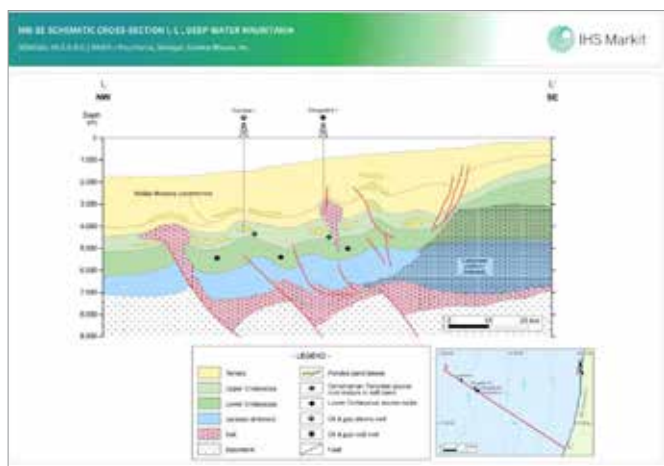
Key metrics such as drilling results by operator, field size distributions, production profiles and creaming curves by play are available for every basin.

Our standard basin images include location maps, structural framework maps and detailed stratigraphic charts. Additional illustrations include representative geologic cross-sections, seismic sections, facies and play maps.



Read our basin summary reports online or download the full Basin Monitor report

Easily understand the history of exploration and development in a basin with our suite of charts.



The stratigraphy and petroleum systems of each Basin are illustrated by our stratigraphic charts



# Unconventional Database & Play Monitor

Your go-to resource for evaluating unconventional hydrocarbon plays.





## Unconventional Database & Play Monitors

Integrated with our Basins offering, our Unconventional Database enables users to assess the unconventional opportunities within our global basins database.

Unconventional plays are defined and characterized in our proprietary data model by a wide range of reservoir properties and detailed geochemical criteria. In-Place and Recoverable resource estimations and current discovered volumes are attributed to each unconventional play.

Our Unconventional Play Monitor is designed to provide a comprehensive overview of each play. Exploration and development activity is synthesized to deliver a synthesis of the most relevant information. High-level commentary on economics and regulatory information and analysis is incorporated to frame the above-ground risks of each play. Typical illustrations include play distribution maps, stratigraphic charts and geologic cross-sections.

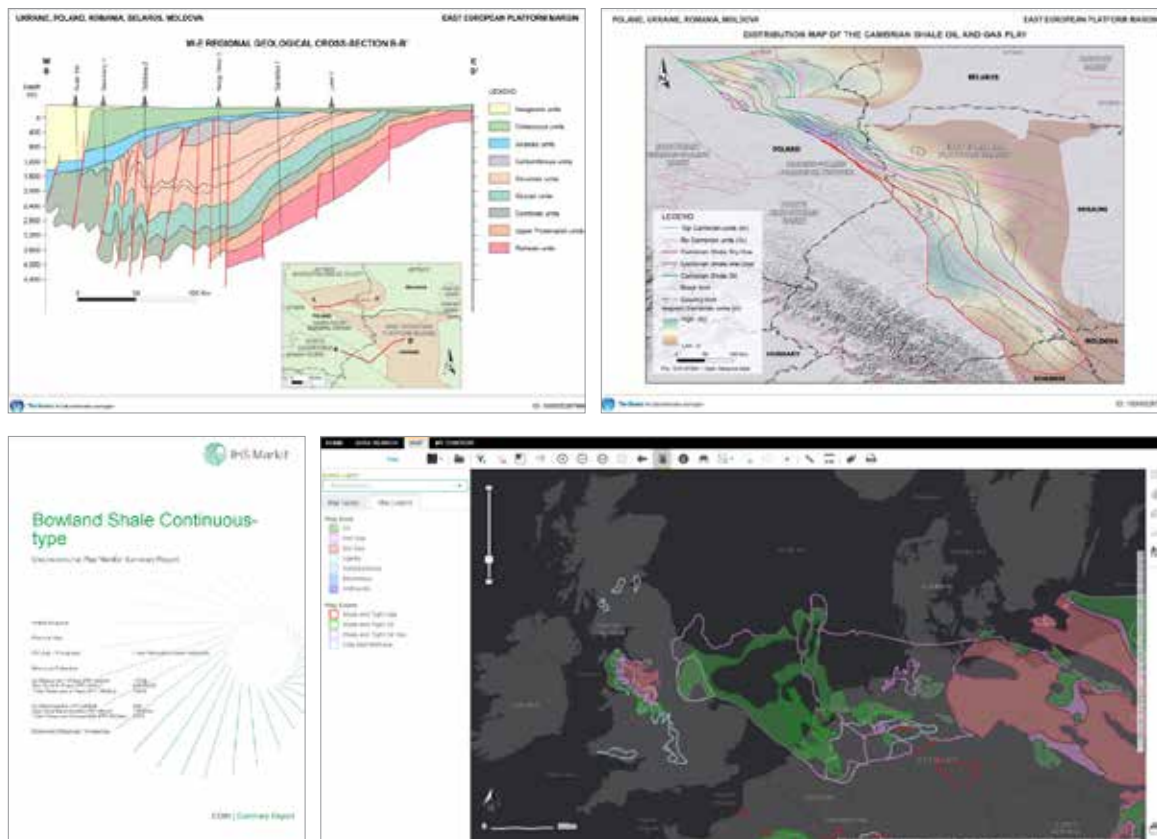
### Standard report analytics include:

- Drilling results by operator
- Reserves size and reserves probability distributions
- Creaming curves

### Unconventional play outlines are delivered spatially and include:

- Play extent and play zone
- Interval thickness and depth
- Interval TOC and Ro (Vitrinite reflectance)

### Unconventional content is available to Basin Data subscribers





# Contracts & Blocks Database

Offering unique worldwide coverage of current and historic E&P Contracts and Blocks with associated rightholdings over time.



## Contracts & Blocks Database

Identify opportunities with ease using our extensive contracts & blocks database. Our commitment to providing timely information will enable you to quickly assess the latest awards, bid rounds or blocks available for farm-in. Extensive rightholder information allows for comprehensive analysis of a companies net acreage position over time. Efficiently evaluate commercial timeframes from application or award to expiry or relinquishment. In our dataset, every contract event is recorded, including ownership changes, partial relinquishments and renewals.

### Standard contract & block information includes;

- Status, rights type and availability
- Upcoming renewal, partial relinquishment or expiry dates
- Financial, seismic or drilling commitments organised by exploration phases
- Payment details including signature & production bonuses and royalty rates
- Farm-in opportunity identifiers
- Terms of previous bid rounds

Each contract and block is available in a standard report format, including ownership structure, location details and block outlines, licence summary information, block history and associated events.



Our experts source contract and block data from both public and private domains from all corners of the globe

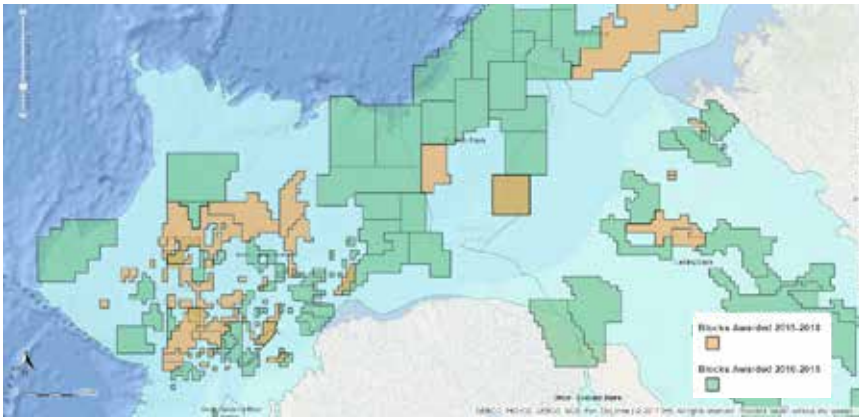
With over 100 years of contract history, our database continues to provide the most comprehensive contract & block information on the market.

With more than  
**25,400**  
currently valid and  
**50,400**  
historic contracts

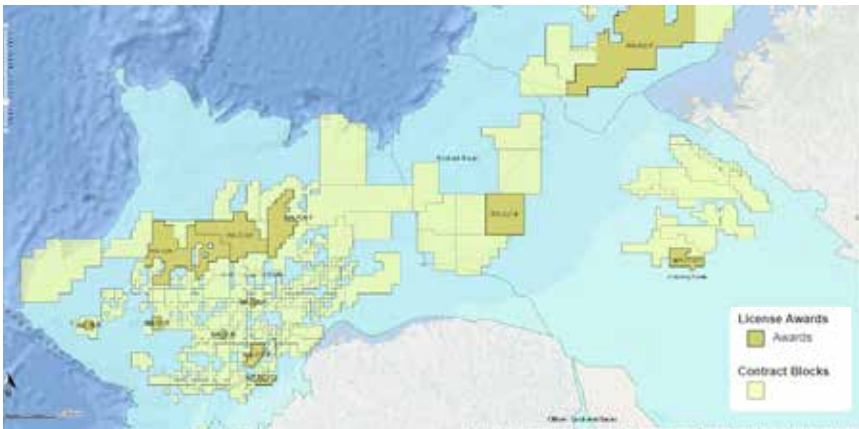
Over  
**143,000**  
contract-blocks

**175,000**  
currently available  
or historical bidding/  
offered blocks and  
open areas

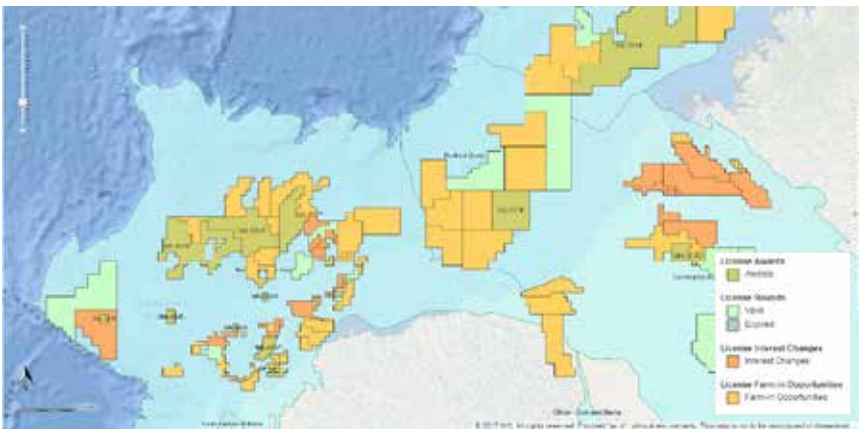




**The most extensive historic contract & block information on the market**  
Enabling a detailed picture of the right holder evolution of a region to be represented



**Detailed information on contract and block changes**  
Enabling new entrants and exiting companies to be easily identified



**Activity layers**  
Delivering efficient access to the most relevant content, our activity layers include recent license awards, bid rounds, interest changes and farm-in opportunities



**Company interests**  
Easily compare peer group current acreage holdings and assess entry/exit strategies with our detailed ownership history



# Companies & Participants Database

Providing the commercial framework to which all of  
our International E&P information is associated



## Companies & Participants Database

Information on some 50,700 E&P and service companies, including not only operating but all participating companies with local subsidiaries in E&P concessions.

These companies are used in our Participant Database to establish operating groups. This database contains more than 48,400 currently valid groups and more than 111,000 historical ones. This detailed ownership chronology allows for a comprehensive ownership picture to be established of every entity in the database including contracts, blocks, fields, wells, seismic surveys, platforms and midstream facilities.

As companies merge or are acquired, such company hierarchy information allows for the understanding of corporate structures and interests over time enabling the evaluation of acreage, reserves or production history of a parent company.

Ownership Details			
Company Name	Interests Pct	Operator Flag	Group Name
 Kufpec Norway AS	10.00%		 ST/LOT 1
100.0% Kuwait Foreign Petroleum Exploration Co			
owned 100.0% by Kuwait Petroleum Corp (KPC)			
 ExxonMobil Expl & Prod Norway AS	13.00%		 ST/LOT 1
100.0% Exxon Mobil Corp			
 LOTOS Expl & Prod Norge AS	15.00%		 ST/LOT 1
100.0% LOTOS Petrobaltic SA			
owned .1% by Other partner(s)			
owned 100.0% by Grupa LOTOS SA			
owned 53.2% by Polish Government			
owned 46.8% by Other partner(s)			
 Statoil Petroleum AS	62.00%	Is Operator	 ST/LOT 1
100.0% Statoil ASA			

Example ownership details for a Statoil operated Norwegian block



# Geophysical Surveys Database

A worldwide resource for evaluating geophysical coverage providing information on seismic, gravity and magnetic surveys



## Geophysical Surveys Database

This comprehensive international database covers each survey from beginning to end, enabling the efficient analysis of information on both currently ongoing and previously undertaken geophysical surveys and providing a reflection of exploration activity trends over time. Spatial representation of both survey centre points and navigation data allows for the availability of data over current and upcoming licensing rounds and farm-out blocks to be rapidly assessed while under-explored regions can quickly be identified.

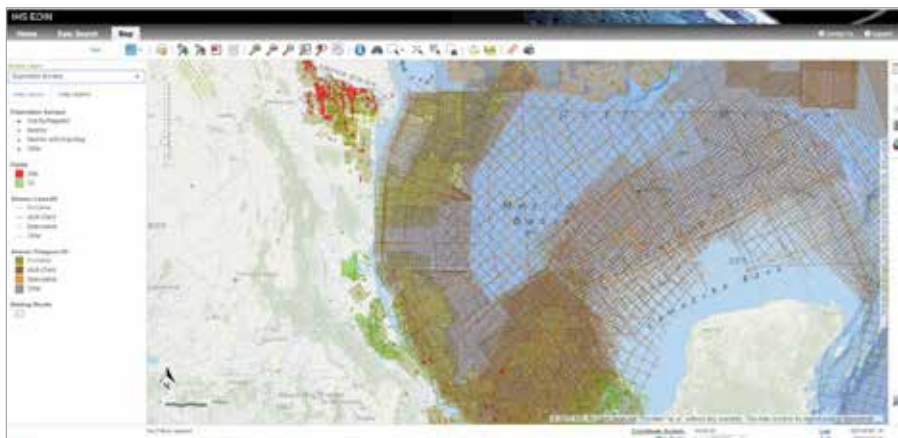
Integration with our companies database enables the derivation of net survey line km acquisition by any participant company.

### Typical survey information includes:

- Survey acquisition dates, operator, on-shore/offshore, terrain, amount recorded and centre point coordinates
- In addition to location data, information on the type of survey, whether it be speculative, multi-client or exclusive, contractor, owner and data quality are all also provided.

The Geophysical Surveys Database contains data on over  
**58,600**  
seismic, gravity and magnetic surveys

The Survey Navigation Layer contains more than  
**15.3 million** km of 2D lines  
and **6.2 million** sq km of 3D.



Survey Details	
Survey ID	123456
Operator	ABC Energy
Acquisition Date	2018-01-15
Location	North Sea
Type	2D
Status	Completed
Area	1000 sq km
Cost	\$500,000
Contractor	XYZ Geophysics
Owner	ABC Energy
Data Quality	High

# Wells Database

Unrivalled global content providing comprehensive coverage of exploratory and development wells drilled to date





## Wells Database

The most comprehensive database available with over 784,000 wells, demonstrating over 50 years' experience in gathering well data, capturing information from the early 1800's to the present day.

Data is sourced from public and private domains from all corners of the globe by our teams of highly experienced industry professionals and transformed into powerful information required to drive successful business decisions.

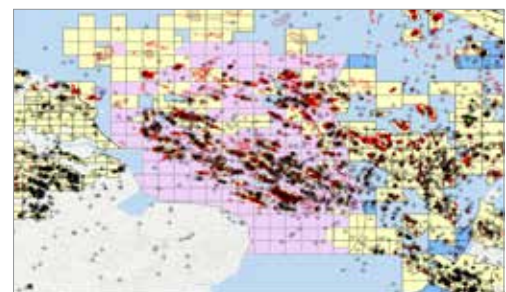
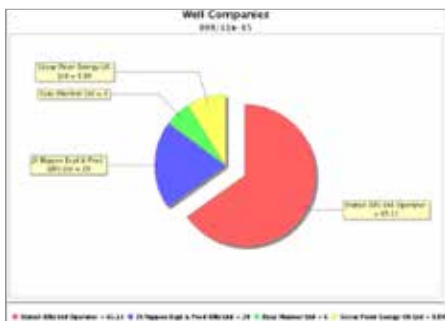
Well records include well header information in addition to in-depth information including drilling history, objective formations, bottom hole formation, test results, technical well data, formation tops and lithologies, cored intervals.

- Research current and historic exploration & development activity at any level whether it be by country, basin, block, field or operator.
- Identify technical challenges such as HP/HT regimes and operational issues during drilling with extensively documented well histories.
- Efficient access to information on current and planned drilling activity.
- Analyze drill success by a wealth of variables including region, basin, company, water depth or formation and examine well failure criteria.

**UWI**—IHS Markit is the international industry reference for identification code for international wells by providing the Unique Well Identifier (UWI).

**High Impact Wells**—Planned wells, up to a maximum 3 year forecast, which are targeting over 200 million barrels of oil equivalent (MMBOE) or a play opener or other significant purpose

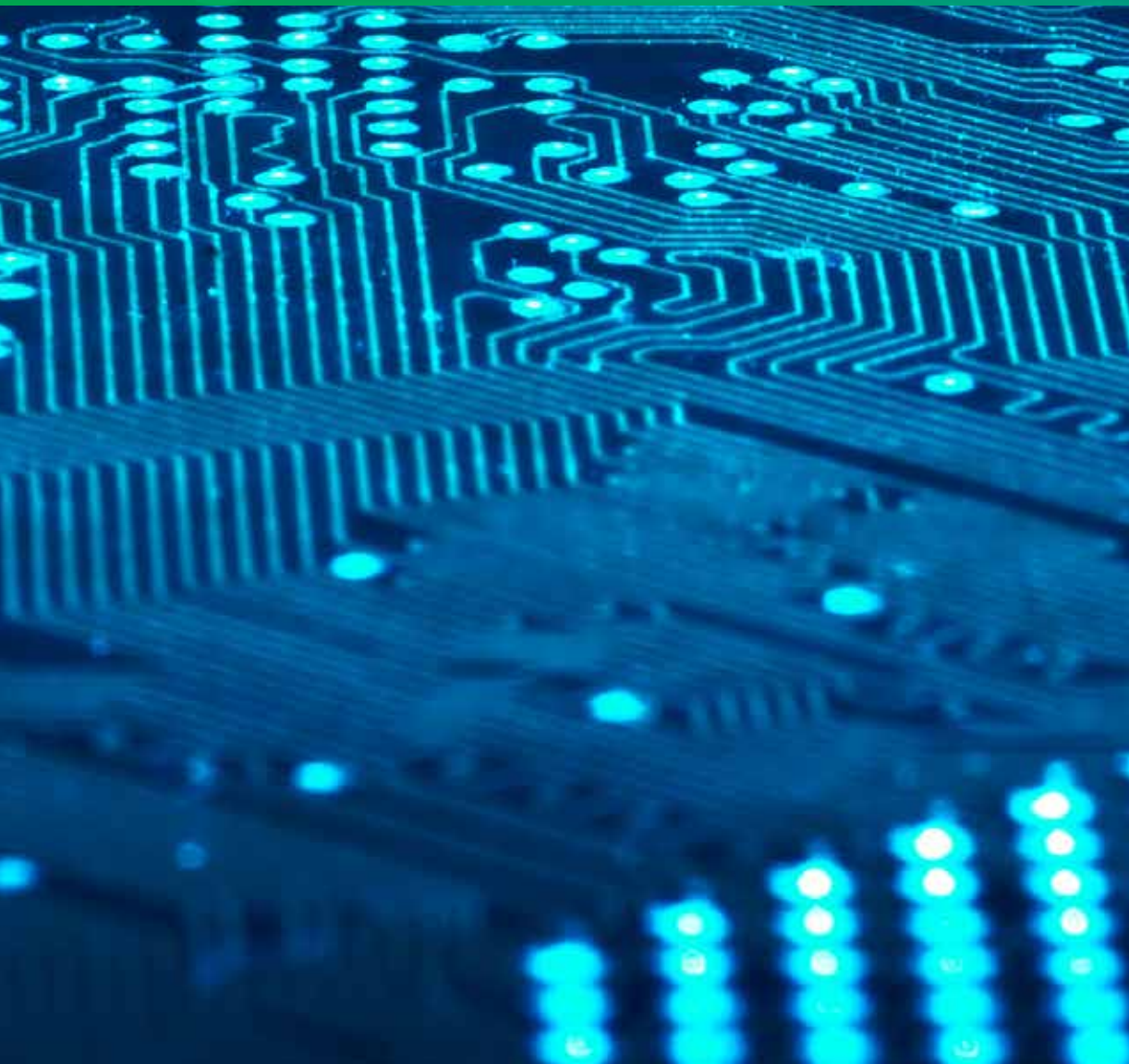
**Location**—Exact well location data is extremely important and much time has been dedicated by IHS Markit researchers to find the correct projection system and coordinate datum for each well. The result is a comprehensive database of well locations of over 250 projection systems and 110 different datum shifts with the latest EPSG version 7.1 transformations to provide location data in WGS84 format. Well locations are provided as both a spatial layer with the original datum and as a WGS84 layer to allow the user to select the type of coordinate projection that best fit their purpose.





# Fields & Discoveries Database

Delivering an unparalleled International dataset, from discovery through development to decommissioning, covering more than 30,400 fields and 66,000 reservoirs.



## Fields & Discoveries Database

The IHS Markit Fields & Discoveries database allows companies to undertake a detailed review of existing assets in an area, be it to understand local geological trends and regional prospectivity or to evaluate farm-in potential of available licenses.

Extensive reservoir information enables our user to search for analogue fields on a vast array of attributes and qualifiers.

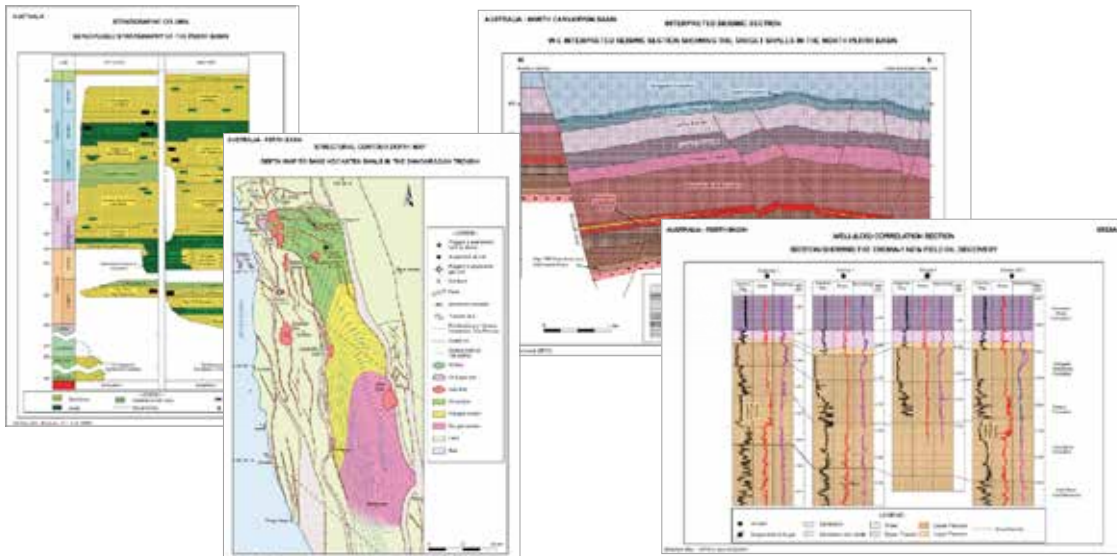
### Extensive reservoir information;

- Reservoir depth and thickness, hydrocarbon column and Gas-Oil-Water contacts
- Lithology, porosity, permeability, water saturation, GOR, salinity
- Reservoir age, depositional environment, play type
- Trap type and seal, fluid and drive system, reservoir pressure and temperature
- Hydrocarbon composition like oil type and gravity, gas composition, contaminants like sulphur, nitrogen, CO<sub>2</sub>, etc.
- Oil, gas and condensate reserves with in-place and recoverable volumes by fields/reservoirs. Reserves history with a breakdown in proven, probable and possible reserves
- Production volumes by field and reservoir where available

Some **12,500** of the discoveries are currently producing and **2,300** fields have been abandoned

More than **30,400** discoveries and fields have been described in detail in the database, with a total of over **66,370** reservoirs described

- Details of operator and partner interests
- Discovery and drilling history
- Field development scheme and description
- Platform information like type, height, weight, slots
- Cost estimates of development, service contractor information
- Well statistics: number of producing oil / gas wells, injectors, depleted wells







# Prospects & Leads Database

Demonstrating our commitment to offer the most comprehensive and relevant E&P content on the market

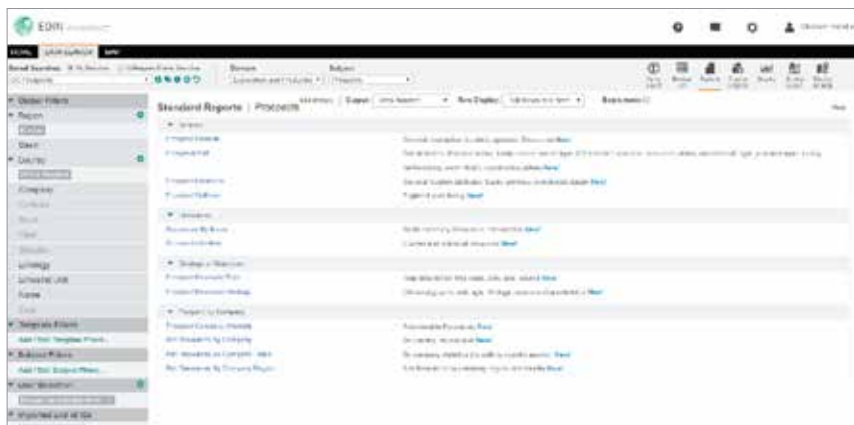


# Prospects & Leads Database

- Identify available prospects in unlicensed acreage
- High-grade the most prospective basin areas
- Compare net prospective resources by Company
- Better qualify Yet-to-Find volumes
- Evaluate untested play potential
- Compare the success / failure criteria on drilled prospects to qualify associated risk

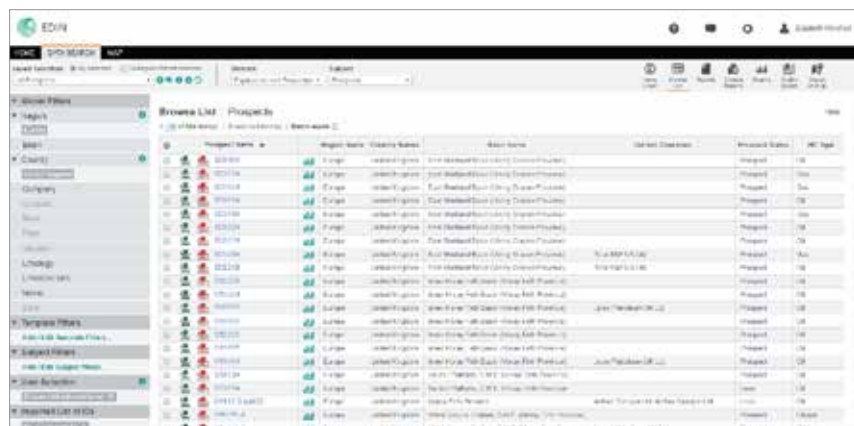


Generate maps, and build Prospect and Lead reports from our dynamic online platform.



## Understand the key criteria of the Prospect

Text: Key attributes include location, operator, block, status, prospective h/c type, exploration concept, play objectives and prospective resources.



## Easy access to Prospect data

Integrate IHS Marit Prospects information into your new ventures workflows to better understand exploration risk and potential hydrocarbon volumes.





# Cultural & Geodetics Database

An integral component of the E&P Database, our cultural datasets provide the contextual foundation for our content browsers and GIS applications





## Cultural & Geodetics Database

Cultural data is available at a nominal scale of 1 million with additional content available at 150 million scale.

**Our 1 million scale data consists of a worldwide set of layers in vector format (lines, points or polygons) including the following features:**

- Geography Layers (Coastlines and Is-lands, Rivers and lakes, Cities, Onshore borders, Wetlands, Countries)
- Bathymetry layer containing water depth contours
- Province layers including administrative subdivision lines and polygons at various levels
- License grids
- Offshore Boundaries and Limits layers containing ratified borders, major claims and national limits

**Our 150 million scale data provides worldwide spatial layers including:**

- Onshore countries: polygons representing worldwide country areas
- Offshore countries: polygons of offshore territorial claims
- Geographical terrain: onshore, shelf and deepwater subdivisions

All datasets contain coordinate values for features within the E&P Database which are entered as reported together with geodetic parameters. Furthermore, we manage a comprehensive portfolio of datum shifts to facilitate the computation of our Global WGS84 feature layers.

### Geodetic Data

Global coverage of International datasets requires the provision of a database of available and valid datum's, projections and datum shifts for all countries. We maintain a spatial layer detailing the extent of use of datum's, available shifts and their reliability collated from the IOGP's EPSG Geodetic Parameter Dataset and supplemented by operator direct information.

The large volumes of data available within our International E&P datasets are used to continually validate these shifts and confirm geodetic information for feature coordinates where none are available. All datum assumptions are qualified accordingly within the datasets. Country coordinate reference systems and their respective datum shifts to WGS84 are reported and available via datum shift reports



## Data Delivery

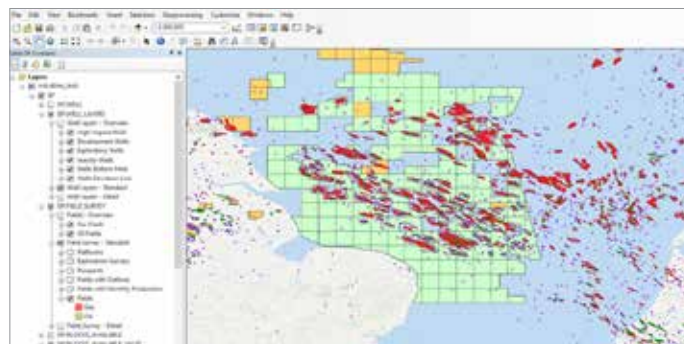
Our data delivery applications and services provide efficient access to our comprehensive International E&P and Basins content.



## Data Delivery

Our data delivery applications provide web and desktop access to the most current and comprehensive International Exploration and Production Information. They enable companies to select, retrieve, integrate and visualize the IHS data types in a variety of ways so that you can answer questions and make timely business decisions.

- IHS Markit EDIN offers easy-to-use, online access to global map or text-based oil & gas information from IHS International E&P and Midstream databases. Quickly retrieve the most up-to-date information via a single-screen to support your critical investment decisions.
- IHS Markit's Enerdeq Web Services deliver SOAP-based web service access to our International E&P, Basins and Midstream data. Perfect for custom data access solutions, our Enerdeq web services include search and access to reports, graphs and exports in formats such as xml and mhtml as well as shape file deliveries.
- IHS Markit's Energy Map Services is a suite of map services that enables your ESRI mapping software to show the most up-to-date IHS Markit energy information by connecting directly to our Energy Spatial Database over the Internet.
- IHS Markit's International Spatial Layers have been designed to provide efficient access to our extensive E&P, Basins and Midstream data spatial content in either file geodatabase or SDE export formats tailored to your entitlements via a monthly ftp download. Our International Spatial Layers are tailored directly to spatial workflows.





# Appendix

## Basins and Geology – Key Data Attributes

<b>Geological Provinces</b>	<ul style="list-style-type: none"><li>– Names, Locations, Structure and Prospectivity</li><li>– Classifications</li><li>– Studies</li><li>– Margins</li><li>– Geological Data (ages thickness)</li><li>– Basin Outline</li><li>– Geological Spatial Layers (tectonic &amp; salt structures, gravimetry, magnetism)</li><li>– Size</li><li>– Images</li></ul>
<b>Basin Monitor Remarks</b>	<ul style="list-style-type: none"><li>– Geological Overview Remarks</li><li>– Exploration Overview Remarks</li><li>– Development and Production Overview Remarks</li><li>– Exploration Summary Remarks</li><li>– Development and Production Summary Remarks</li><li>– General Remarks and Graphic Remarks</li></ul>
<b>Genetic Units</b>	<ul style="list-style-type: none"><li>– Name and General Remarks</li><li>– Geological Data</li><li>– Margins</li><li>– Tectonic Regime (type, age, structures)</li><li>– Igneous Event (type, age, lithology)</li></ul>
<b>Stratigraphy</b>	<ul style="list-style-type: none"><li>– Units and Sub-Units</li><li>– Type/Reference Section</li><li>– Associated and Equivalent Units</li><li>– Bibliography</li><li>– Age</li><li>– Lithology</li><li>– Geochemistry</li><li>– Poro-perm Characteristics</li><li>– Thickness</li><li>– Depositional Environment</li><li>– HC Significance (source, reservoir, seal)</li></ul>
<b>Plays</b>	<ul style="list-style-type: none"><li>– Name, Basin, Petroleum System, Status, Remarks</li><li>– Classification (conventional/unconventional)</li><li>– Reservoir details</li><li>– Seal details</li><li>– Trap details</li><li>– Bibliography</li><li>– Images</li></ul>
<b>Unconventional Plays</b>	<ul style="list-style-type: none"><li>– Geochemistry data</li><li>– Plays Outline</li><li>– Plays Size</li><li>– Resource figures</li><li>– Remarks (geological, exploration, development, fiscal, economics)</li><li>– Spatial Layers for Unconventionals (reservoir depth, reservoir thickness, TOC, Ro)</li></ul>

**Petroleum Systems**

- Name, Basin, Play, Remarks
  - Source Deposition, Generation, Overburden Ages
  - Reservoir, Seal, Trap, Migration Ages
  - Bibliography
  - Images
- 

**Bibliography**

- Classification, Document, ISBN, Title
- Entity Links
- Authors, Publishers
- Language
- Country

## Contracts, Blocks, Companies and Participants – Key Data Attributes

<b>General Contract Information</b>	<ul style="list-style-type: none"><li>- Contract Type and Rights</li><li>- Class and Validity</li><li>- Area and Location Details</li><li>- Contract Remarks</li><li>- Resource Type</li><li>- Unconventional Type</li><li>- Award Type</li><li>- Licensing Round</li></ul>
<b>Contract Stages</b>	<ul style="list-style-type: none"><li>- Event</li><li>- Dates</li><li>- Status</li><li>- Group &amp; Operator</li><li>- Participating Company and Percentage</li><li>- Area and Block outlines</li><li>- Basins and Political Provinces</li></ul>
<b>Schedules, Commitments and Payments</b>	<ul style="list-style-type: none"><li>- Renewal and Expiry Schedule</li><li>- Commitments</li><li>- Period Schedule</li><li>- Production Split</li><li>- Activity and Production Payments</li><li>- Royalty Rate</li></ul>
<b>Blocks</b>	<ul style="list-style-type: none"><li>- Status</li><li>- Farm-out Details</li><li>- Elevation Rights</li><li>- Area Split</li><li>- Coordinates and Datum</li></ul>
<b>Farm-in Opportunities</b>	<ul style="list-style-type: none"><li>- Assignor</li><li>- Percentage Offered</li><li>- Start and End Date</li><li>- Remark</li><li>- Contact Information</li></ul>
<b>Open Areas</b>	<ul style="list-style-type: none"><li>- Block Name</li><li>- Availability (Validity)</li><li>- Coordinates and Datum</li><li>- Basins and Political Provinces</li></ul>
<b>Bidding Blocks</b>	<ul style="list-style-type: none"><li>- Block Name</li><li>- Bidding Round Name</li><li>- Start and End Date</li><li>- Availability (Validity)</li><li>- Coordinates and Datum</li></ul>
<b>Companies</b>	<ul style="list-style-type: none"><li>- Company Name</li><li>- Country</li><li>- Type</li><li>- Activity</li><li>- Detailed Ownership</li><li>- Parent/Child Relationship</li><li>- History (merger, acquisition, name change)</li><li>- Validity</li></ul>
<b>Participants</b>	<ul style="list-style-type: none"><li>- Group Name</li><li>- Country</li><li>- Start and End Date</li><li>- Participating Companies and Percentage</li><li>- Operator</li></ul>



## Wells – Key Data Attributes

<b>General Well Information</b>	<ul style="list-style-type: none"><li>– Names and Location details</li><li>– Ground Elevation/Water Depth</li><li>– Discovery Indicator</li><li>– Field</li><li>– Remarks</li></ul>
<b>Operations</b>	<ul style="list-style-type: none"><li>– Dates</li><li>– Classification (Initial and Final)</li><li>– Technical and Content Status</li><li>– Planned operations including Geological Objective</li><li>– History of Operations</li><li>– Total Depth and True Vertical Depth</li></ul>
<b>Contracts and Operator/ Partners</b>	<ul style="list-style-type: none"><li>– E/P Contract (licence and block)</li><li>– Participants – with interest breakdown</li></ul>
<b>Drilling details and Equipment</b>	<ul style="list-style-type: none"><li>– Casings</li><li>– Rig Details</li><li>– Depth Reference Elevation</li><li>– Bottom Hole Location</li><li>– Costs Data</li></ul>
<b>Stratigraphy</b>	<ul style="list-style-type: none"><li>– Tops</li><li>– BH Formation</li></ul>
<b>Tests and Sampling</b>	<ul style="list-style-type: none"><li>– Test Details and Tested Intervals</li><li>– API, Flow Rates, Pressure, Temp</li><li>– HC Characteristics and Composition, Fluid Recovery</li></ul>

## Fields – Key Data Attributes

<b>General Field Data</b>	<ul style="list-style-type: none"><li>- Field Location</li><li>- Dimension</li><li>- Production Status</li><li>- Field HC Type</li><li>- Conventional / Unconventional Indicator</li><li>- Unconventional Type 1 &amp; 2</li></ul>
<b>Contract and Ownership Information</b>	<ul style="list-style-type: none"><li>- Current Contract (licence and block)</li><li>- Participants (company or group of companies)</li><li>- Historic details (original and previous participants)</li></ul>
<b>Development History</b>	<ul style="list-style-type: none"><li>- No. of Wells Drilled and Active (producing)</li><li>- General Development Remark</li><li>- Costs Data and Remarks</li><li>- Field Event History</li><li>- Offshore Development Technique</li></ul>
<b>Production and Reserves</b>	<ul style="list-style-type: none"><li>- Cumulative and Annual Production volumes (historic and current)</li><li>- Field Monthly Production Details (historic and latest)</li><li>- Country Total Production History (onshore/offshore split)</li><li>- IOR/EOR Secondary method information</li><li>- Field Reserves figures (historical reserves systematically stored since 1999)</li><li>- Reservoir Reserves figures (historical reserves systematically stored since 1999)</li></ul>
<b>Fluid and Gas Characteristics and Composition</b>	<ul style="list-style-type: none"><li>- API Gravity</li><li>- GOR</li><li>- Gas Type and Gas Gravity</li><li>- Viscosity</li><li>- Liquid / Gas Ratio</li><li>- Chemical Composition.</li></ul>
<b>Hydrocarbon Data by Field and Reservoir</b>	<ul style="list-style-type: none"><li>- HC Column</li><li>- HC/Water Contacts</li><li>- Fluid System</li><li>- PVT Characteristic</li></ul>
<b>Reservoirs</b>	<ul style="list-style-type: none"><li>- Geological Parameters - trap details, closure, source rocks, seal rocks, plays</li><li>- Reservoir Geological details.</li><li>- Production and reserves figures of individual reservoirs stored when available</li></ul>
<b>Geological Information by Field and Reservoir</b>	<ul style="list-style-type: none"><li>- Lithostratographic unit names</li><li>- Age</li><li>- Lithology</li><li>- Poro-perm and fluid saturation characteristics</li><li>- Thickness</li><li>- Depositional environment</li></ul>
<b>Field Outline, Images and Bibliography</b>	<ul style="list-style-type: none"><li>- Field Outline</li><li>- Scanned Images</li><li>- Bibliographic References Database</li></ul>
<b>General Installation Data</b>	<ul style="list-style-type: none"><li>- Name</li><li>- Location Details (country, coordinates, water depth)</li><li>- Participants</li></ul>
<b>Installation Operational Details</b>	<ul style="list-style-type: none"><li>- Type and Status</li><li>- Function (Production, Processing, Drilling)</li><li>- Manned Indicator</li><li>- Characteristics (legs, slots, piles)</li><li>- Dates (installed, removed)</li><li>- Fields links</li><li>- Wells links</li></ul>

## Surveys – Key Data Attributes

<b>General Survey Data</b>	<ul style="list-style-type: none"><li>- Name, Method, Seismic Type</li><li>- Start, End Dates, Status, Party Days</li><li>- Area covered, Km, CDP km, Sq Km</li><li>- Stations, Energy Source, CDP Fold</li><li>- Crew and Ship Names</li><li>- Remarks</li><li>- Operator and Contractor Names</li></ul>
<b>Spatial Data</b>	<ul style="list-style-type: none"><li>- Centre Coordinates</li><li>- Country, Basin, Political Province</li><li>- Contract and Field Name</li></ul>
<b>Survey Operational Plan</b>	<ul style="list-style-type: none"><li>- Survey Method</li><li>- Seismic Planned</li><li>- Seismic Intended Start and End Dates</li></ul>
<b>General Survey Data</b>	<ul style="list-style-type: none"><li>- Name, Purpose (exclusive, ML, spec), Seismic Type</li><li>- Start and End Dates, Vintage</li><li>- Area covered, km, sq km</li><li>- Ship Name</li><li>- Operator and Contractor Names</li></ul>
<b>Spatial Data</b>	<ul style="list-style-type: none"><li>- 3D Polygon, 2D lines</li><li>- Country, Basin</li><li>- Field Names</li></ul>



## Prospects – Key Data Attributes

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### **General Prospect & Lead Data**

- Prospect Location
  - Prospect or Lead status
  - Dimension
  - Prognosed HC Type
  - Planned drill date
  - Drilled successful/unsuccessful indicators
  - Conventional / Unconventional Indicator
- 

### **Contract and Ownership Information**

- Current Contract (licence and block)
  - Participants (company or group of companies)
- 

### **Prospective Resources**

- Prospective Resources figures
- 

### **Objective Reservoirs**

- Petroleum system elements - trap details, closure, source rocks, seal rocks, plays
  - Reservoir Geological details - lithostratigraphic unit, lithology, depositional environment, age
  - Thickness
- 

### **Prospect Outline, Images and Bibliography**

- Prospect Outline
  - Associated images such as cross sections and stratigraphic charts
  - Bibliographic References Database
  - Fields links
  - Wells links
-

## Cultural – Key Data Attributes

### 1:1 million

#### Geography:

- Bathymetry Contours
- City Points / Polygons
- Coastlines-Islands Lines/Polygons
- River-Lakes Lines / Polygons
- Ocean Polygons (International Hydrographic Organization Subdivisions)
- Offshore Country Polygons
- Onshore Country Polygons
- Onshore / Shelf / Deepwater Polygons (terrain)
- Onshore / Shelf / Deepwater Country Polygons (country terrain)

#### Political Borders and Limits:

- Onshore and Offshore Boundaries Lines (official, disputed and claimed borders)
- Offshore Limit Lines (baselines, 12nm, 24nm, 200nm)
- Joint Development Zone Lines
- Administrative Subdivisions Lines/Polygons
- Petroleum Licensing Grids Subdivisions Polygons (quads, blocks)

#### Transportation:

- Rail Lines
- Road Lines

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### 1:150 million

- Onshore Country Polygons
  - Offshore Country Polygons
  - Onshore / Shelf / Deepwater Polygons (terrain)
  - Onshore / Shelf / Deepwater Country Polygons (country terrain)
-

## 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.

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