

Tieto Energy Components

Hydrocarbon
management from
production to revenue



Why Energy Components?


Complete end-to-end hydrocarbon accounting solution following the hydrocarbons from production to transport, sales and revenue recognition

Energy Components Global Solutions is a product suite developed by Tieto for the oil and gas industry. It monitors business processes for the production, transport and sales of oil and gas, and facilitates collaboration between licence holders in oil fields around the world. Tieto also offers industry standard for oil companies' operations of personal transport, logistics and safety.

Globally market-leading hydrocarbon accounting software with functionality coverage exceeding other available solutions

The network management system provides support for the proper targeting and scheduling of network investments and maintenance operations, which are the key factors in the network company's efforts to attain better profitability.

Selected as the global standard and best practice by oil & gas super majors



"Energy Components is selected as the global standard and best practice solution by oil and gas super-majors all over the world".

SOX compliance thoroughly assessed and approved by global companies

The solutions allows you to manage your business in a controlled manner, according to industry best practices with full traceability, auditability and SOX404 compliance at all levels.

Modern, flexible and scalable technology platform

Component technology allows applications to be constructed from pre-built software components rather than having to develop the entire application each time from scratch.

The Energy Components portfolio of pre-built reusable software components allows solutions for the oil and gas industry to be assembled within a short timeframe. Only those components required for the target oil and gas operation are used and new components may easily be added to implement new requirements.

SOA-enabled and aligned with new industry initiatives like e.g. PRODML

The global E&P industry is highly collaborative and demands solutions and standards for efficient data sharing and reporting throughout the total life cycle of an oil/gas field. We provide software and solutions that support collaboration between operators, JV partners, regulators, and internal units. Our products are compliant with industry standards such as, for example, PRODML and WITSML.

Energy Components received the highest rating in “Fit to Market Needs”

IDC Energy Insights analysed the hydrocarbon accounting solutions available on the market for super majors, large independents, nationals, LNG, and pipeline companies.

The Tieto product Energy Components (EC) was found to best fit the market's needs. IDC Energy Insights found that EC is committed to a complete and integrated solution from reservoir to cash. It is a significant global solution capable of handling complex networks, production sharing contracts, LNG requirements, FPSO, and terminal system requirements. EC is configurable but comes with predefined configurations for the typical production and transport setup.

In their evaluation, IDC Energy Insights states that EC's field data capture functionality is highly flexible and configurable, allowing all relevant field data to be transferred.

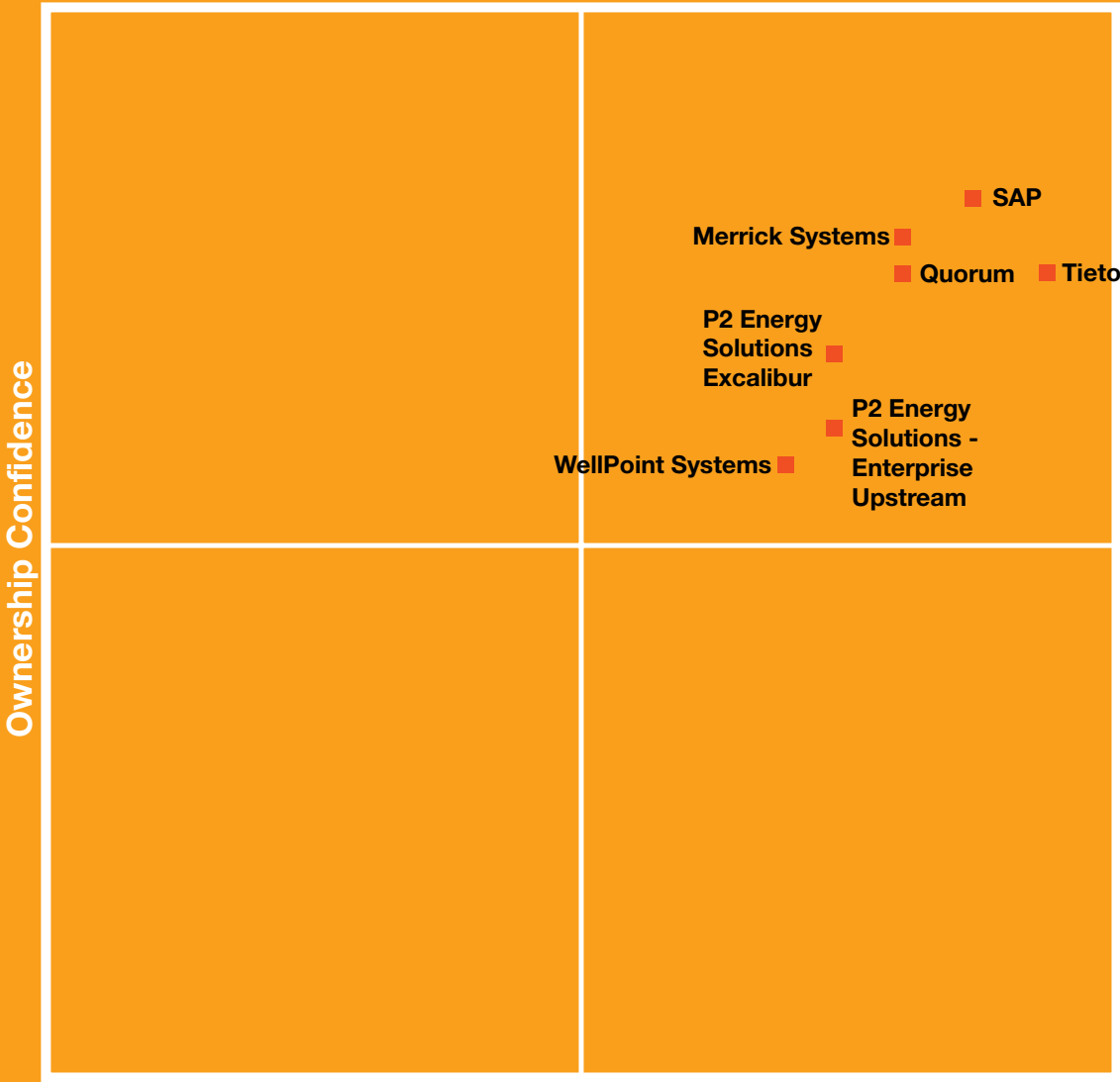
This is a major strength of EC, and some of the largest oil and gas companies in the world are using these capabilities for their most complex allocation requirements.



World-wide installations ~~over 290~~ close to 500

Energy Components has ~~over 290~~ installations around the world, each installation covering between 5 and 40 000 wells. It has become an industry standard as a commercial off the shelf (COTS) product.

Industry Short List for Hydrocarbon Accounting: Vendor Comparison



Note: Those IT suppliers that are best positioned are in the upper-right-hand quadrant, which represents a high fit to market needs and a high likelihood of a positive ownership experience.

Source: IDC Energy Insights, Doc #EI222017 / Mar 2010

From production to revenue with Hydrocarbon Management Software

Energy Components accurately calculates the value of the oil and gas

Energy Components help you monitor business processes for production, transport, sales, and revenue of oil and gas. By monitoring every hydrocarbon produced, transported or sold, the value of the oil and gas from different sources can be determined. With complex contractual agreements to observe, it is commercially critical to have a system which accurately allocates and calculates these values.

Our hydrocarbon management and accounting software solution provide unprecedented support for your upstream oil and gas business. It consists of four fully integrated solutions sharing the same underlying database:

- EC Production covers functionality required by upstream organizations for production allocation and reporting.
- EC Transport covers functionality employed when transporting hydrocarbons either through pipeline systems or by vessels.
- EC Sales covers functionality to support the sales organization selling / trading hydrocarbons including managing complex gas sales contracts.
- EC Revenue covers the invoicing/billing and control of any data relevant for revenue recognition, forecasting/budgeting, and includes a two-way interface with financial accounting systems.

PRODUCTION

Production
Downtime

Production
Operations

Well Testing

Well &
Reservoir

Gas
Stream



Oil
Stream



TRANSPORT

Gas Delivery

Gas
Dispatching

Oil Delivery

Cargo Admin



SALES

Gas Delivery

Gas Sales

Oil Sales

Other
Company



REVENUE

Sales &
Purchases

Inventories

Tarrifs

Volumes

EC Production

Energy Components is the most comprehensive and functional-rich production management solution available

While hydrocarbon accounting is a fundamental offering in all Energy Components solutions, EC also offers extensive support for all aspects of production management, including forecast and target setting, tracking actual performance versus targets, identifying bottlenecks, and successfully realising the full production potential of customers and participants assets.

The EC Production product has been developed to take into account specific requirements from e.g. oil fields with associated gas, gas/condensate fields, coal-bed methane fields, heavy oil, and bitumen production; subsea deepwater developments with FPSOs, offshore platforms, shallow water, and swamp installations, onshore pumped wells without any automation, tank farms, gathering systems, etc.

Consequently, EC today offers a complete set of functionality to cope with all types of production requirements.

Energy Components is by far the most comprehensive and function-rich production management solution available. It has been successfully adopted in all major oil and gas regions.

By combining EC Production with the world-leading EC Revenue product, a fully integrated solution managing all data from production to revenue accounting is gained.





EC Transport

Energy Components ensure continuous delivery and integrity of the gas transport system

Gas transport is a major area covered by the Energy Components product suite. In fact, some of the largest gas transporters in the world use Energy Components on a continuous basis.

The gas transport operators normally do not own any of the gas themselves but offer a gas transport service to 3rd parties. In order to ensure continuous delivery and integrity of the gas transport system, balancing services are also offered, either by the gas transporters or by 3rd parties. The main principle is that each shipper must ensure that it injects the same quantity/energy of gas into the

system as it takes out on any given time period, (typically hourly or daily balancing). The users of these services, the “shippers”, will pay a fee for this service, and additional penalties will typically apply if unable to be in balance, “shortfall”, or unable to deliver the gas at agreed quality, “off-spec”.

EC also offers support for the gas storage providers whereby gas can be injected into the underground storage systems and withdrawn at a later time.





EC Sales

Energy Components manages the full value chain from seller to buyer

The gas sales business varies quite significantly depending on how close the gas is to viable and mature gas markets. In markets with few buyers, the gas is typically sold on long-term take-or-pay contracts which could run for the full lifetime of the field. The gas in such areas is often used for power generation and/or large industrial consumption. The purpose of these contracts is to give the gas owners necessary fundament for funding and development of the resources, while the buyers get secured long-term supply, combined with reasonable off-take flexibility. In more viable markets, gas is sold on shorter terms and according to more fixed arrangements in terms of quantity and price. However, even in quite viable markets, gas sellers will often hold a portfolio of both long-term agreements with off-take flexibility, and short-term, fixed contracts.

Energy Components has developed dedicated support for the gas sellers, whether handling long-term take-or-pay or short-term contracts. EC manages the full value chain from seller to buyer including the communication with gas transporters.

Energy Components offers support for the complete gas value chain with strong support for the various types of GSPA contracts, the gas dispatching, required to deliver gas according to contractual obligations, as well as the full sales accounting, invoicing and revenue handling.





EC Revenue

Energy Components addresses the complete value chain from reservoir to revenue

Revenue accounting refers to the process of evaluating sales and purchases of hydrocarbons, submitting invoices, allocating revenue and costs back to source, and distribute the proceeds to all entitled parties. Each company needs to book revenue and value of inventory positions. As all companies need to perform such revenue accounting, both for operated and non-operated assets, this forms an essential part of the oil and gas value chain.

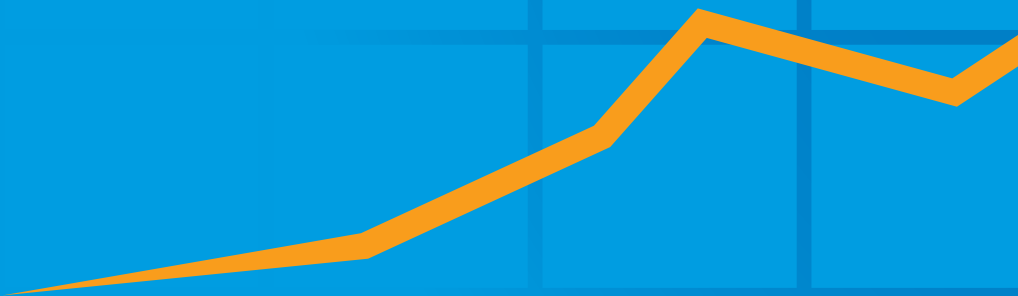
Energy Components has comprehensive functionality for revenue accounting supporting the needs and requirements found in all major oil and gas regions.

Energy Components is the only solution that addresses the complete value chain from reservoir to revenue. Specifically built for the upstream industry, EC handles some the most complex

revenue arrangement including lifting agreements between JV parties, royalty/PSA agreements, multi-product, and multi-currency invoicing.

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This is Tieto

tieto.com

Tieto is an IT service company providing IT, R&D and consulting services. With approximately 17 000 experts, we are among the leading IT service companies in Northern Europe, and the global leader in selected segments.

We specialize in areas where we have the deepest understanding of our customers' businesses and needs. Our superior customer centricity and expertise in digital services set us apart from our competitors.

We focus on serving large and medium-sized organizations in our main markets – Northern Europe, Germany and Russia. In telecom, forest, oil and gas, as well as digital services, we serve our customers globally. We work hand in hand with many of the world's leading companies and organizations, and grow in step with them.

The company's shares are listed on NASDAQ OMX in Helsinki and Stockholm

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