

Kostro&Friedel

Company Profile

Brochure

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This document provides information about the following topics:

- The company Kostro&Friedel Pte. Ltd.,
- K&F's propriety software solutions for asset evaluations,
- K&F team and organization.

The intention of this document is to introduce K&F for potential future cooperation on different oil and gas assets screenings or evaluations.

K&F's goal is to provide the customer with a technical analysis on the field (based on CnG and engineering work), an economic analysis (based on economical assessment).

1 The Company

K&F is a private limited company, registered in Singapore. The founding partners reside in Hamburg and Kuala Lumpur, with main geographical focus on the Eastern Hemisphere, including Europe and Asia.

K&F 's specialists are seasoned experts, who cover all E&P technical disciplines and have wide geographic exposure. Our service offering is relevant for E&P companies, host authorities and financial institutions.

1.1 Our Services

K&F is specialized in providing techno-commercial services to the oil and gas upstream business. With our asset (e)valuation service we provide independent guidance regarding the current and the potential future value of oil and gas properties and production strategies that maximize recovery profits and minimize development and production costs.

Having a strong background in the consulting business, K&F 's offering combines latest proprietary technologies with substantial in-house expertise. This allows us to offer our clients accurate techno-commercial consultancy services including:

- Due diligence for acquisitions, divestments and mergers or financing,
- Initial Public Offering (IPO),
- Asset and corporate valuations,
- Data-room and bid preparation evaluation,
- Technical and financial risk analysis,
- Financial negotiation support,
- Decision and risk analysis on field, block or portfolio level,
- Independent cost estimates and verifications,
- Assurance assessments and Competent Person Reports (CPR), and
- Portfolio optimization and management.

1.2 Our Products

K&F delivers detailed reports on the studied assets, presenting the results of a fully probabilistic workflow which covers all uncertainties and risks. This documentation can be used for the acquisition or divestment of assets, or for project finance. Our due diligence is based on a multi-disciplinary concept that offers a wide scope: from simple pre-data room analysis using public domain information with the targeted use of a data room to focus on key elements of assets to the full technical and commercial due diligence. Latter includes the full range of potential project risk and uncertainties, originating from reservoir, development and commercially related aspects. K&F 's technical review and techno-commercial offering comprises various products as summarized in Figure 1.

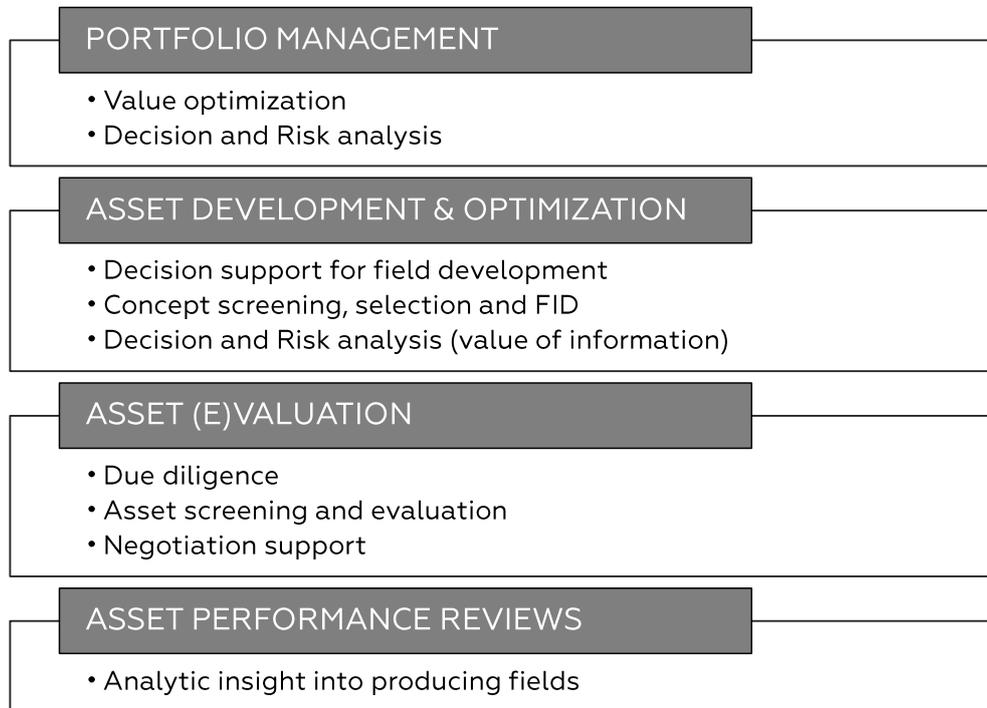


Figure 1: Technology enabled products

Asset Performance Review®. This product offers a deeply analytic fast track performance review of oil and gas assets. The deliverable and report are particularly useful in providing an overview in non-operated ventures or for host authorities. It is essential for screening of portfolios, audits and data rooms for merger and acquisition (M&A) activities where efficiency and fast turn around times are of paramount importance.

Asset (E)valuation. This due diligence product comprises the full techno-commercial evaluation to determine the value and potential of an oil and gas asset. This is the perfect tool to advise on farm-in, farm-out or acquisition activities, from screening to the negotiation stage. Clients can achieve short turnaround times for valuations using, for example, 'real-time' modeling capabilities and live asset models.

Asset Development & Optimization. This product supports concept selection and optimization. The results are suitable for field development planning and decision making and the support of final investment decisions (FID).

Portfolio Management. This product combines K&F's technology on a portfolio level. It supports analyzing and improving the value of a portfolio. It is particularly suitable for M&A activities covering farm-in, farm-out or divestiture of portfolios.

2 Technology

2.1 Asset Evaluation Workflow

K&F approaches every evaluation strongly analytically by applying extensive knowledge of fluid flow physics, combined with significant practical field development and commercial experience in the E&P business. Figure 2 summarizes K&F 's due diligence workflow for asset evaluation.

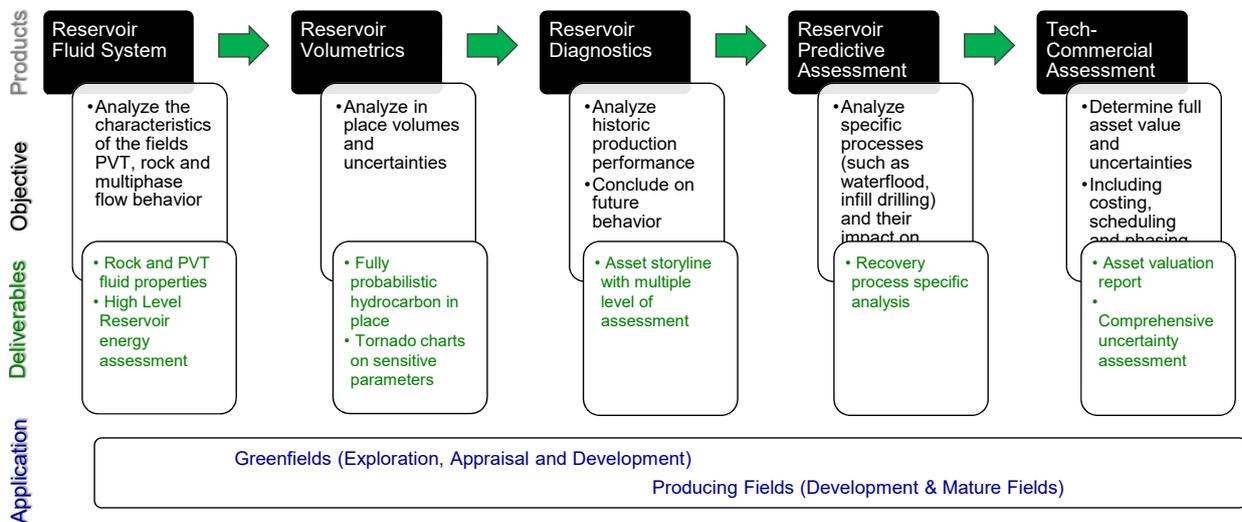


Figure 2: K&F asset evaluation and due diligence workflow

2.2 Proprietary Software Solutions

The workflow is supported by in-house software for every step of the analysis. The software is highly tuned towards maximum efficiency but also ensures a high degree of transparency, auditability and repeatability.

Reservoir Fluid System identifies the main characteristics of the reservoir fluid system. Technology: Extensive library of state of the art correlations that is constantly updated and customized. It requires a minimum of known data from data room input). Measured data and offset data can be implemented when available for calibration and quality control.

Reservoir Volumetrics assesses and validates hydrocarbon volumes in place. Technology: Monte-Carlo based efficient single tank volumetric model in which 25 different distributions are implemented where modelling of correlated parameters is possible.

Reservoir Diagnostic analyzes past and future asset performance. Technology: Evaluation of large production data sets by connecting various key analysis techniques: statistical analysis

for spatial and temporal data assessment (mapping, correlations), empirical methods (DCA), physics (material balance) and state of the art visualization.

Reservoir Predictive Toolbox supports production forecasting.

Technology: Empirical methods such as decline curves, material balance models and linking to dynamic simulation models, such as Schlumberger's ECLIPSE.

Techno-Commercial-Simulator enables commercial assessment of oil and gas assets for M&A, FID or asset and portfolio management.

Technology: Fully probabilistic asset (e)valuation framework with a high performance computing engine and sophisticated post-processing capabilities (see below).

K&F's fully probabilistic asset valuation framework is strongly top-down, delivering fast results with a focus on integration. At the core of the framework is a state of the art techno-commercial simulator to model assets. The K&F techno-commercial simulator covers all aspects, i.e., scheduling, production, expenditure load and economics. It is capable of modelling a wide range of fiscal arrangements (PSC, R/T, RSC or service contracts).

3 Project References

A summary of relevant field experience where K&F's technology and workflows had been implemented can be provided on request.

4 K&F 's Partners

K&F 's core team of seasoned experts covers all E&P relevant disciplines (GnG, engineers to commercial experts). Detailed CVs of associates and partners are available upon request. The founders of K&F are:

Dr. Torsten Friedel (K&F Partner, Principal Consultant) is a petroleum engineer. He worked as a reservoir consultant and research assistant developing a specialized reservoir engineering simulation tool, from which he subsequently obtained his Doctorate in Reservoir Engineering and which he later commercialized. Mr. Friedel worked as reservoir engineer, subsurface manager and project manager, managing multi-disciplinary project teams of up to 35 geoscientists, engineers, and support staff conducting integrated full field reviews or field development planning. He was in charge of value assurance, due diligence activities and techno-commercial assessment for Schlumberger's new ventures production business in Asia Pacific and prior to that managed Schlumberger's regional subsurface consulting group in Asia Pacific with more than 100 consultants and offices in Beijing, Jakarta, Perth and Kuala Lumpur. He is author and co-author of about 40 scientific papers on various upstream oil and gas topics, and acts as peer reviewer for various industry journals.

Klaas Kostro (K&F Partner, Principal Consultant) is reservoir engineer and has over 15 years of work experience in the core competences of uncertainty analysis and probabilistic simulation using ECLIPSE®. Mr. Kostro has conducted several due diligence projects on oil and gas assets, particularly in North Sea and North Africa. In his position as Reservoir Engineer,

he has been responsible for production optimization and probabilistic simulation workflows, history matching and uncertainty workflows, oil and gas field operations like well testing and fracking, PVT studies and well test analysis. Mr. Kostro has worked for EON E&P, Wintershall and Schlumberger not only in field development planning but also in oil and gas field operations, especially in Libya, Algeria and Germany. He is also a lecturer at the Technical University in Freiberg, Germany.

5 Summary

K&F has a strong background in the consultancy business and works with a team of seasoned experts covering all E&P relevant disciplines (from GnG and engineers to commercial experts). All our associates have deep technical knowledge and wide range of work experience, and some of them work closely with universities or have published important papers or books in their areas. This enables us to offer an one-stop-shop of all disciplines to evaluate any oil and gas asset worldwide.

Based on our long consultancy experience, we have created new products to (e)valuate assets using our propriety software and developed a new system that presents results completely attuned to the needs of our customers. K&F approaches every evaluation strongly analytical by applying extensive knowledge of fluid flow physics combined with significant practical field development and commercial experience in the E&P business. During the project, we offer 24/7 technical assistance to our clients.

K&F deliverables are based on a fully probabilistic technical workflow (any large datasets), covering all uncertainties and risks. For this purpose we also analyze and optimize client's KPIs (Key-Performance-Indicators), delivering asset evaluation in standardized and customizable reports, the perfect tool for decision making and strategic planning.

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