Economics and Reserves

OVERVIEW
Exploration and production companies expect a fast, flexible economic evaluation tool to justify projects and plan budgets, assess the impacts of price or ownership changes, and calculate and roll up the results in any arrangement. ARIES™ Asset Economics provides solutions to meet these requirements for operations, engineering, and business teams by enabling efficient evaluation of new projects, producing assets, potential acquisitions, and reserves at any level of detail in an integrated environment.

ARIES software can form the foundation for all evaluation needs by providing comprehensive property and data management, interactive production and reserve forecasting using decline curves or other methods, and proven economic evaluations. Core data and results are all stored in a shared database, which seamlessly integrates with the associated reserves management system application or other company applications.

In the end, ARIES Asset Economics gives users the confidence of knowing that their reserves and business decisions are based on an established, proven, and trusted technology that are not likely to ever outgrow. While the basics of economic decisions are universal, every company requires its own special calculations or reporting. ARIES software fulfills these needs through its unparalleled adaptability and flexibility.

BENEFITS
Increased Confidence and Transparency
ARIES software eliminates data redundancy, error-prone manual data entry, and un-auditable mixtures of spreadsheets through its structured data and property management capabilities. Everyone can work simultaneously from the same data and shared results.
**Higher Productivity and Efficiency**
Unparalleled speed, combined with rich features including automation, means that a company’s technical resources can accomplish more in less time. Property acquisition data is often based on ARIES databases, so using them directly eliminates wasting time re-entering or converting data.

"Easily view production and economic forecasts in various styles of graphs or hard-copy plots."

**Simpler Software Management**
Regardless of a company’s size, the ARIES system is the foundation for a single, consistent evaluation solution across the whole enterprise. This includes economics, reserves, and international fiscal modeling. Program releases and updates are available for electronic download via the Landmark web portal."
**Works Like You Do**
ARIES Asset Economics easily adapts to a company’s business processes. Additionally, it provides the flexibility to tailor and analyze data from multiple data sources, using various approaches to conform to operators’ unique challenges and goals.

**Investigate More Possibilities**
The ease and speed of creating, updating and re-running economic evaluations means users have time to examine all the contingencies around a decision or to evaluate an entire company’s assets under various scenarios. This allows looking at more opportunities with more detail in less time.

**FEATURES**

**Data Compatibility**
ARIES software uses a customizable, open data model. Whether a user’s needs are confined to economics and reserves determination or require a more sophisticated, enterprise-wide approach to mesh with a company’s business systems, ARIES software is flexible to meet specific requirements.

**Open Database System**
Operates on industry-standard relational database systems:

- Microsoft® Access (ARIES Classic Data Model)
- MS SQL Server, SQL Server Express, and Oracle® databases for multi-user client/server environments
- Wide area networks can be custom implemented

Users versus tables can be tailored to fit a company’s business and to access the contents with internal applications

**High Performance**
The multi-threading and efficient design of ARIES software enables extremely rapid calculations, so users can evaluate and consolidate thousands of properties in just a few minutes.
**Advanced Data and Project Management**

Users can edit the data and properties, and organize them into analysis and reporting hierarchies, using an advanced selection and sorting system that builds SQL queries automatically. Other data and project management functionality allow users to:

- Arrange lists of wells, leases or groups, based on any criteria selected from a database
- Automatically create multiple-level totaling points
- Manually create or refine the properties and totaling points
- Load data from most commercial vendors, ASCII files or other systems into the database
- Connect directly to an existing company database
- Efficiently quality control the data

Easily organize properties and manage data.
**Interactive Graphical Forecasting**

The decline curve feature reads monthly and daily production volumes and test data directly from the database and displays them optimally for analysis. Users define the graph types, appearance and behavior, and can graph up to eight curves on each based on any data items from the database.

- Rate-time, rate-cum, and P/Z analyses are linked to reduce effort and to check for consistency.
- Multi-well normalized Trend analysis combines and adjusts data from up to 500 wells for forecasting.
- Best-fit forecasts are provided for Cartesian, exponential, harmonic, and hyperbolic, using linear and nonlinear regression. Stretched exponential decline is provided for unconventional resources.
- Automated decline curve forecasting and updating makes acquisition evaluations faster.
- Interactive curve adjustments, or direct parameter entry to create up to nine segments for each forecast.
- Advanced auto scaling, zooming, data point culling and curve shifting features simplify the analysis. The IntelliFilter automatic point culling feature can speed analyses.
- Store an unlimited number of named forecasts directly to the economic data table (or to a spreadsheet).
- Create an aggregate forecast for a well group or a field, or display the sum of the individual well forecasts.
- Presentation-quality hard copy plots are provided for individual properties or for the entire company, including calculated net historical and forecast values, and totals.

*Update production forecasts using the comprehensive interactive decline curves, multi-well trends, and other types of engineering analyses.*
Economic Data
The ARIES system accommodates both simple and complex evaluation needs, and provides many efficient data entry features.

• Input editors for both occasional and power users: an intelligent, wizard-based fill-in-the-blank version, and the comprehensive editor that shows all input at a glance and provides column headings and pop-up prompts for values.

• Models 15 phases and their associated price, cost, ownership, and revenue values.

• The scenario hierarchy feature controls which sets of case data are used for a run and how the stored results are to be labeled.

• Users can load production, cost or price data directly from a spreadsheet or a database table at run time.

• The development drilling wizard lets users easily replicate and time shift multiple instances of a case.

• The global data editor finds and replaces specific data in an entire project; plus, users can copy and paste data.

• Comprehensive sets of corporate settings data, specialized common data, and lookup tables ensure corporate consistency.

• Flexible date shifting and linking of properties enables complex modeling.
Economic Calculations

The flexibility and speed of updating and running calculations enables quick evaluation turnarounds.

- Run one case at a time or thousands, including subtotals.
- Cash flows are calculated monthly, then aggregated into user-defined reporting periods.
- Summaries can be either recomputed or added.
- Built-in risking for capital and well performance turns probability of success into expected values. The module of the ARIES Modeler provides extensive stochastic analysis capabilities including aggregation.
- Economic Group entities simplify platform- or other aggregate-type calculations for multiple-well economic life or ownership reversions.
- Built-in sensitivity analysis and tornado diagrams.
- U.S. and Canadian taxation is built in and other fiscal modeling is provided through the module of the ARIES Modeler technology.

Results and Presentation

Many standard engineering and financial report styles are provided, including one-line totals and time-period details, plus production ledgers.

- The user-defined columnar- or row-based economic reports include the input data page, and up to six additional section pages of detail.
- On-screen previews are available in spreadsheet or report style formats.
- Values can be stored in the sharable database tables for reporting later, as intermediate data for the module of the ARIES Reserves Management System, and for in-house use.
- Database reports show production, forecasts, economics, and other types of information.
- Users can modify these using the report writer provided, or create their own using Crystal Reports™, MS Access™ or MS Excel™.
- User-constructed plots display history, forecasts, reserves, and economics values, including net values and summaries.
“I can evaluate and manage all my assets effectively, including all the new wells and acquisitions. Plus, we can properly roll up these results with the rest of the company to better manage our portfolio.”

BUSINESS UNIT MANAGER

Landmark offers solutions to help you deliver on your business strategies. For questions or to contact your Landmark representative, visit us at landmarksoftware.com.