



# Lacima Analytics

**Software dedicated to valuation, optimisation  
and risk management for global energy markets.**

Effective risk management and the ability to respond to valuation challenges and portfolio optimisation opportunities are pre-requisites for the profitability of organisations that deal in energy.

Whether you seek simple models to value, optimise and report risks for standard contracts, or require the most sophisticated models and techniques for complex asset types, Lacima Analytics is the solution for you.

**Lacima**   
Be Confident. Energy Analytics.

# Valuation & Optimisation Suite

Do you face any of these valuation and optimisation challenges?



▶ I do not have a single system that allows me to value the range of complex contracts and assets in my portfolio.

▶ I have contracts subject to volumetric flexibility; I cannot recognise their full value and profit potential.

▶ I trade complex structured deals that I cannot value in a timely manner.

The Valuation & Optimisation Suite provides solutions to accurately value a wide range of portfolios including swing, storage, pipeline and generation assets.

Benefit from the ability to take into account operational flexibility and wide-ranging constraints, as well as the ability to jointly optimise financial contracts and physical assets.

## Key solutions include:

### Swing

Structure, value, hedge and analyse the volumetric uncertainty presented by swing contracts with the ability to handle complex features such as indexation, depletion, carry-forward and make-up as well as to manage inter-year relationships.

### Storage

Structure, value, hedge and analyse the volumetric uncertainty presented by gas storage contracts and optimise the use of storage facilities for maximum profit. This solution provides the ability to report on intrinsic and extrinsic valuations of storage assets with key outputs that include distributions of values, injection/withdrawal levels and sensitivity analysis including deltas for hedging.

### Generation assets

Structure, value and hedge power plants and analyse power contracts linked to physical assets with the ability to capture a wide range of plant characteristics and constraints. Key outputs provided include distributions of revenues, costs, outages and emissions.

## Deal structuring

Create customised payoff functions for any complex derivative by applying mathematical functions to the underlying spot or forward curve of any number of available commodities. This enables even the most complex baskets, indexation contracts, or any structured deals to be analysed and priced.

## Derivative pricing

Calculate values and risk sensitivities for a range of commonly traded instruments, including a wide range of swap types, options, swaptions, Asians, caps, floors, collars and spread options, taking into account the unique features of energy prices.

# Risk Suite

## Do you face any of these risk management challenges?



- ▶ I have disparate systems to handle my multi-commodity/ geography portfolio; I need a single consolidated risk metric.
- ▶ My risk metric needs are more complex than what my existing systems provide; I need add-on functionality.
- ▶ I am looking for a single application to handle all my risk management needs.

**Why be satisfied with a risk metric that does not measure the risks accurately for the whole portfolio of assets and derivatives without gross oversimplification?**

**The Risk Suite provides a comprehensive range of portfolio risk metrics from the simplest to the most complex taking into consideration the unique behaviour of energy prices, the complexities of financial hedge contracts as well as the operational constraints of physical assets.**

### Key features include:

#### Risk metrics

Utilise stochastic single, multi factor and hybrid risk models to calculate and report all the relevant key market and credit-based risk metrics:

#### Value based metrics

- Mark-to-market
- Delta VaR
- Historic Simulation VaR
- Monte Carlo VaR
- Potential Future Exposure

#### Cash flow based metrics

- Revenue-at-risk
- Earnings-at-risk
- Cash Flow-at-risk

#### Single view

Achieve a single consolidated view of risk across multiple commodities and regions without the need to replace any energy trading and risk management (ETRM) systems.

#### Consistency

Ensure consistency of risk calculations across disparate ETRM systems through automatic data upload.

#### In-depth analysis

Conduct in-depth analysis with the ability to drill down and to splice and dice by region, book, commodity, counterparty or any other defined portfolio attribute.

#### Portfolio integration

Integrate financial contracts and physical assets into portfolios for joint risk analysis.

#### Hedge analysis

Perform hedge analysis to determine the best hedging strategies.

#### Sensitivity, stress tests and what-if

Apply sensitivity analysis, stress tests, what-if and scenario analysis across portfolios.

#### Flexibility and control

All the flexibility of a spreadsheet but within the controls and security required for good risk management practice to assist with compliance for regulatory requirements.



# Portfolio Management Suite

Do you face any of these portfolio management challenges?



The Portfolio Management Suite provides a set of solutions which enable complex portfolios of assets and financial contracts to be combined to enhance value and profit potential.

- ▶ My portfolio of assets is unique and I require a specific portfolio optimisation solution.
- ▶ I am not maximising my profit potential as I cannot take into account the full network of my assets and contracts.
- ▶ The models in my current application do not reflect the fundamental relationships that exist in the market.

## Key solutions include:

### Portfolio hedge optimisation

Determine the mix of hedge contracts to achieve an optimal risk/return outcome.

### Gas network optimisation

Financially optimise a portfolio of gas supply, retail demand, storage facilities and swing contracts in a connected multi-region gas network.

### Hydro dispatch

Optimise the dispatch of a network of cascading hydro reservoirs including stochastic inputs describing rainfall and snowmelt.

### Hybrid modelling

Link together any number of risk variables (such as temperature and load, load and price, snowmelt and river flow) to provide a model that realistically manages the resultant risk.

### Cargo shipping

Ensure that cargo is optimally dispatched in accordance with the time it takes to deliver commodities to different locations globally.



Lacima Analytics comprises three functionality suites; the Valuation & Optimisation Suite, Risk Suite and Portfolio Management Suite, and two supporting suites; the Productivity Suite and the Core Suite.

Lacima Analytics has been designed to address the needs of clients who are interested in only a small subset of functionality such as gas storage valuation through to a full risk application capable of interfacing with multiple ETRM systems.

Select an individual solution, a full suite or any combination, all within a single, consistent environment.

The open framework architecture can also be used to support your existing skilled in-house teams, enabling you to incorporate your own internally developed intellectual property.

## Why Lacima Analytics?

Whether you require a specific valuation solution or seek a comprehensive risk application, Lacima Analytics can meet your needs.

### Comprehensive functionality

A full range of valuation, optimisation and risk management capabilities across portfolios of financial contracts and physical assets in a single consistent environment.

### Flexibility and control

Ability to change the input data and hence results quickly through a database structure that is fully version manageable and auditable.

### Scalability

Ease of transition from a single desktop to company-wide server based deployment, and simple to add/upgrade functionality to meet evolving business needs.

### Cost-effective implementation

Designed to work seamlessly with other systems resulting in quick implementations without the need to replace any existing systems.

### Expert personalised service

Developed and implemented by a peer recognised team of energy risk and valuation specialists who offer an unparalleled level of personalised support.

### Transparency

Lacima provides full transparency of its risk models, algorithms and valuation methodologies.

### Open framework

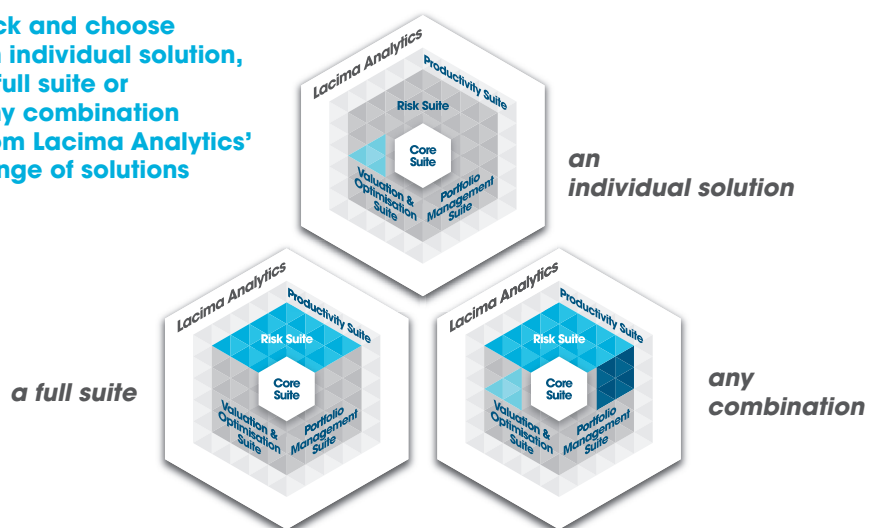
Option to embed in-house developed analytics to capitalise on your internally developed intellectual property.

## Who can benefit?

Organisations that deal in energy related contracts or assets of any size and portfolio scope can all benefit from Lacima Analytics.

Lacima Analytics is ideal for structuring, valuation and risk teams in vertically integrated energy companies, energy retailers, financial institutions, and large energy consumers globally.

Pick and choose an individual solution, a full suite or any combination from Lacima Analytics' range of solutions





## Productivity Suite

The Productivity Suite provides the ability to implement additional features to help users get the most out of Lacima Analytics.

### Key features include:

#### Reporting

Create reports on any combination of data available within Lacima Analytics in multiple formats with the ability to drill down or view data in aggregation.

#### Data management

Connect to external data efficiently by using simple automated methods to upload data into the system.

#### Results management

All simulations can be retrieved at any time with the ability to analyse to the hourly and half-hourly level.

#### Security

Implement additional security to restrict and control user access to different parts of the system.

#### Distributed processing

Conduct faster calculations to solve the most complex problems through the distribution of processes. Standard calculations can be performed in real-time.

#### Batch processing

Consolidate numerous runs and schedule them accordingly.



## Core Suite

The Core Suite provides the infrastructure and “building blocks” for Lacima Analytics and is provided with all Lacima Analytics solutions.

The Core Suite provides a set of functionalities that allows users to attain benefits normally associated

with implementing a much larger, more complex application including:

- Contract management
- Automated data entry
- Comprehensive reporting and data management into a centralised database
- Parameter estimation and calibration
- Build and manage forward and forecast curves

## About Lacima

Lacima is a specialist provider of software and advisory services dedicated to valuation, optimisation and risk management for global energy and commodities markets.

We help you to maximise your profit potential and make better informed decisions by providing tools that yield more accurate valuations, hedging analysis and risk exposure analysis of portfolios of financial contracts and physical assets.

For further information, visit [www.lacimagroup.com](http://www.lacimagroup.com) or email [info@lacimagroup.com](mailto:info@lacimagroup.com)

