

SourceBook

**CTRM Software Suppliers
and Products**

Version 073120

2020

**Commodity
Technology
Advisory**

CTRM Market Research, Analysis and Insights

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Introduction

The Commodity Technology Advisory LLC (ComTech) Sourcebook of CTRM Software is designed to be a useful and highly usable resource to provide a rich source of information to those seeking insights into the capabilities and coverage of products within the ETRM/CTRM software space. It is a starting point in the product selection process - a mid-level guide to allow the reader to develop a long list of vendors that have high potential capabilities in terms of functional and commodity coverage to meet the specific needs of individual commodity market participants.

This document is **not** intended to be a replacement for a formal selection process - CTRM software is simply too complex to be selected properly without utilizing a methodical selection process.

Rather, our intention in developing and publishing the CTRM Sourcebook is to inform the reader of the wide universe of vendors and products, and allow companies seeking a new system to compile a list of vendors that may include some that might not have otherwise been considered, or even some that they may not have previously been aware of.

About the CTRM Sourcebook

Each Vendor and Product listing is compiled with the same format for clarity and ease of use, and each is comprised of:

- The name of the vendor and contact information
- Company and product information including each vendors' submitted company and product description
- Total installed base by licensed customer companies
- A representative list of users of the product
- A graphic showing client distribution by common industry segment
- A graphic showing the distribution of current clients by geography
- A graphical matrix providing an overview of the product's capabilities, by function (horizontal axis), by commodity (vertical axis)
- Deployment methods of the highlighted product(s)
- Office locations and contact phone numbers

The product functionality and commodity coverage charts are easily readable and provide mid-level information about each vendor's product capabilities.

ComTech's methodology for constructing the Sourcebook was to distribute a spreadsheet and questionnaire for data collection. Most of the vendors in the space were invited to submit their information for publication. Those that chose to participate completed and returned the questionnaire, including identifying by commodity and function (or feature) whether their software:

- 1) has an indicated capability that is in use by a current user (indicated by a green checkmark)
- 2) has that capability available but is not currently used by a client (indicated by yellow circle), or

- 3) does not provide that capability (indicated by red “X”) for the indicated function/commodity combination.

Submitted information was reviewed and edited by ComTech to ensure all vendors conformed to the same standard, and adjustments were made to some vendor responses to ensure consistency among all respondents. The information submitted by the vendors was used to complete the vendor/product listing.

For information about other vendors that provide similar capabilities, at least in part, to those vendors included in this 2020 SourceBook, please visit <https://www.ctrmcenter.com/resources/>.

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Important Disclaimer

Please Note: Commodity Technology Advisory LLC cannot guarantee the accuracy of any of information within the Vendor listings. While we have attempted to match vendor claims against our knowledge of their market capabilities, given the dynamic nature of these markets and the ongoing development of new capabilities to address emerging needs, none of the vendor claims of any particular capability can be fully and accurately verified.

Additionally, given the complexity of the CTRM space generally, we cannot guarantee that the vendors have interpreted the terminology we used accurately in preparing their responses, nor that each vendor has applied the same approach and/or interpretation in answering our questions. As such, this material is presented on the basis that it is indicative of the broad capabilities of vendor's products at the time of publication.

ComTech Advisory strongly advises users of this document to verify all capabilities directly with the vendors and undertake requisite due diligence when selecting software.

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Summary of Commodity Specific Capabilities

The chart on the following page offers a summarized view of the functions/features offered by each vendor (and/or product) by commodity. *These values do not include non-commodity specific capabilities such as back office functions (accounting) or system-wide capabilities such as reporting or currency conversion.*

Using This Chart

Those seeking new CTRM capabilities may be able to quickly identify those vendors (and their products) that may meet their needs by simply reviewing the indicated breadth of capabilities for each vendor on the summary chart. However, it is important to note that should the reader wish to identify a specific capability (for example, the ability to capture options deals), they should carefully review each individual vendor's capabilities for that specific function.

This chart is intended to provide a summarized view of the relative focus of each vendor's functional coverage across the various commodities. Please keep in mind, **each vendor will have particular capabilities and strengths that may not be well-reflected in this type of summary view.** However, for those seeking broad physical commodity capabilities - such as tracking physical supplies from source to final market - this chart will provide an "at a glance" identification of potential vendors that may provide comprehensive physical commodity trading capabilities, and offer a starting point for additional research into those vendors.

Summary of Vendor Functional Coverage - Percentage by Commodity

The following chart is a summation of the individual functional matrixes submitted by each vendor. The percentage values shown for each vendor(product)/commodity combination are indexes determined by the following formula:

(1 point for capability available and deployed at customer + ½ point for capability available but not deployed + 0 points for functionality not available)/Total available points applicable to that commodity

Vendor (Product)	ENERGIES							AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Freight Rates
	Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concentrates	Precious	North America	Europe		
Agiboo	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%
Amphora	0%	74%	80%	83%	81%	80%	82%	81%	81%	81%	0%	81%	81%	81%	47%	44%	0%	85%
Beacon	55%	47%	43%	43%	43%	44%	45%	24%	40%	40%	40%	47%	47%	47%	69%	66%	24%	28%
Brady - Commodities	3%	30%	45%	54%	28%	51%	30%	34%	79%	78%	78%	81%	81%	74%	40%	40%	74%	69%
Brady - Energy	93%	83%	54%	2%	2%	53%	2%	1%	1%	1%	1%	2%	2%	2%	3%	79%	3%	3%
Contigo	67%	66%	46%	45%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	47%	0%	0%
CTRMCloud	71%	58%	51%	51%	44%	46%	51%	48%	48%	48%	48%	50%	45%	50%	61%	61%	51%	0%
CTRMCubed	53%	48%	44%	44%	43%	45%	47%	26%	26%	26%	26%	26%	26%	26%	31%	31%	28%	32%
Cubelogic	42%	37%	37%	37%	36%	38%	39%	40%	40%	40%	40%	40%	40%	40%	49%	49%	43%	50%
EGSSIS	37%	34%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Eka	97%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	97%	97%	98%	97%
EnergyOne	82%	78%	63%	38%	39%	64%	40%	0%	0%	0%	0%	0%	0%	0%	44%	44%	0%	0%
Enuit	89%	95%	92%	95%	93%	92%	94%	97%	83%	83%	83%	97%	97%	81%	81%	81%	96%	71%
ez-nergy	21%	14%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Fendahl	0%	77%	82%	83%	78%	83%	44%	44%	85%	85%	85%	85%	85%	85%	44%	44%	84%	72%
FIS - Aligne	97%	87%	76%	76%	74%	87%	45%	88%	43%	43%	43%	43%	43%	43%	94%	94%	0%	0%
FIS - KiodeX	50%	48%	49%	49%	48%	50%	50%	55%	59%	59%	59%	59%	31%	59%	56%	56%	61%	60%
FIS - XDM	83%	71%	15%	15%	15%	16%	16%	33%	0%	0%	0%	0%	0%	0%	40%	79%	0%	0%
G10	0%	49%	50%	49%	50%	50%	50%	50%	100%	100%	100%	100%	100%	100%	50%	50%	100%	100%
Hivedome	0%	0%	0%	0%	0%	84%	0%	88%	88%	91%	91%	88%	0%	0%	0%	0%	0%	0%
Igloo	53%	44%	33%	33%	32%	33%	34%	0%	0%	0%	0%	0%	0%	0%	40%	40%	0%	0%
Inatech	41%	42%	91%	91%	90%	91%	91%	91%	37%	37%	38%	37%	37%	37%	84%	84%	0%	0%
Instanext	51%	58%	52%	52%	51%	51%	53%	51%	51%	50%	50%	51%	50%	50%	61%	61%	54%	66%
Invensoft	0%	0%	0%	0%	0%	0%	0%	0%	48%	48%	81%	28%	28%	14%	0%	0%	0%	0%
ION - AgTech	0%	0%	0%	0%	0%	0%	0%	66%	66%	66%	66%	0%	0%	0%	0%	0%	0%	0%
ION - Allegro	93%	94%	93%	91%	91%	93%	97%	94%	79%	79%	49%	49%	49%	49%	90%	90%	88%	84%
ION - Aspect	0%	55%	85%	85%	61%	84%	62%	87%	85%	85%	79%	87%	85%	77%	12%	12%	29%	61%
ION - Commodities	96%	99%	98%	98%	98%	98%	95%	98%	98%	98%	95%	94%	93%	94%	97%	97%	95%	94%
ION - Endur	93%	97%	95%	93%	94%	93%	95%	92%	92%	92%	93%	86%	86%	86%	94%	94%	95%	94%
ION - RightAngle	0%	0%	94%	94%	92%	94%	0%	94%	87%	87%	87%	90%	84%	0%	0%	0%	88%	80%
Lacima	72%	67%	63%	63%	62%	64%	66%	67%	67%	67%	67%	67%	67%	67%	83%	83%	73%	82%
Molecule	54%	49%	47%	47%	45%	26%	26%	43%	27%	27%	27%	27%	27%	27%	51%	33%	53%	0%
OATI	97%	95%	67%	67%	66%	74%	68%	63%	63%	63%	63%	63%	63%	63%	77%	0%	0%	0%
Paragon/MCG	95%	91%	93%	93%	91%	93%	93%	41%	41%	41%	41%	41%	41%	41%	89%	54%	48%	35%
PCI	79%	64%	1%	47%	1%	61%	28%	0%	0%	0%	0%	0%	0%	0%	60%	39%	0%	0%
Pioneer	95%	95%	91%	89%	88%	62%	74%	86%	49%	49%	77%	72%	49%	0%	94%	94%	43%	49%
SAP	0%	71%	82%	82%	80%	80%	81%	80%	81%	80%	81%	81%	81%	81%	43%	43%	46%	44%
Trilogy	33%	72%	57%	52%	59%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
W Energy	0%	37%	39%	37%	40%	21%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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Detailed Product Listings

Agiboo

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Phone: 313 6521 3131

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Product:
Agiblocks

Agiblocks CTRM Software has been developed with the single goal of making the daily practices of commodity trading professionals more efficient.

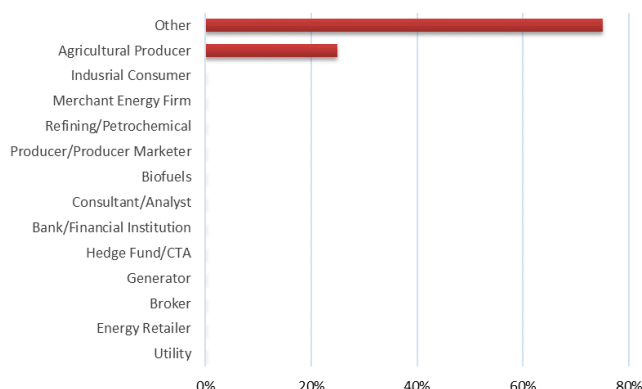
Its clean user interface is simple with fast access to key functions. For every task, from creating a contract to evaluating your risk, all required information is immediately available.

It is as powerful on smartphones and tablet computers as it is on the desktop. Agiblocks is specialized in the Agricultural and soft commodity industry.

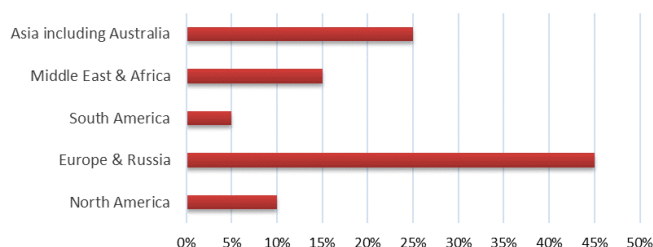
Number of Licensed Client Companies: 30

Representative Clients: Farmers Business Network; Golden Agri; Daarnhouwer

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ Traditional License
- ✓ SaaS: Multi-Tenanted
- ✓ Hosted in Private Cloud
- ✓ Hosted in Public Cloud
- ✓ License Rental

Office Locations and Phone:

- ✓ Chicago IL, USA +1 312 848 1602
- ✓ Singapore +65 94526915

Vendor: **Agiboo**Product Name: **Agiblocks**Version: **v.3.31.13**

<div>✔</div> Functionality is deployed and in production at a client site		<div>●</div> Not Deployed, but system is capable of providing functionality		<div>✖</div> System is not currently capable of providing that functionality		<div>-</div> Not Applicable - Functionality not applicable for Commodity													
Function / Feature		ENERGIES						AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Freight Rates	
		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concen-trates	Precious	North America			Europe
Production / Operations	Production Mgmt./Generation	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	-	-	-	-
	Volumetric Management	-	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	-	-	-	-
	Net Back Pricing	-	✖	✖	✖	✖	✖	✖	-	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✖	✖	-	✖	✖	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✖	-	-	✖	-	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✖	✖	-	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Quality / Sampling	-	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	-	-	-	-
Front Office / Trading	Contract Management	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Deal Origination	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Credit Tracking	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Curve Management	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Portfolio Optimization	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Supply-Demand Optimization	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Pre-Deal Analytics "what if"	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Trade Capture																		
	Physical	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Financial	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Exchange	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Deal Types																		
	Spot & Forwards	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Futures	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Swaps	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Options	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Swaptions	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
Transportation	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	
Storage/Inventory	-	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	-	
Complex Pricing	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	
Position Management																			
Physical	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	
Financial	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	
Risk Management and Analysis	Credit Risk	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Hedge Effectiveness	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Analytics																		
	Mark-to-Market	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	VaR - Monte Carlo	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	VaR - Other	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Greeks	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	PaR/EaR	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	CVaR	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Portfolio Sensitivity Analysis	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Stress Testing	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Simulations	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Fair Value Disclosure	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
Vessel Freight Risk	-	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	
Insurance	-	-	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	
Middle Office	Inventory Management	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Scheduling and Logistics																		
	Power Transmission	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✖	✖	✖	✖	✖	-	-	-	-	-	-	-	-	-	-	-	-
	Barge	-	-	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	-	-	✖	-
	Rail	-	-	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	-	-	✖	-
	Truck	-	-	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	-	-	✖	-
Vessel	-	-	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	-	-	✖	-	
Supply Chain Mgmt./Traceability	✖	-	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	-	-	✖	-	
Back Office	Regulatory Reporting	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Settlement																		
	Actualization	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Invoicing	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Settlements/Reconciliation	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
Taxation	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✖
AR/AP/Ledger (Gen. or Sub)	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✖
System Wide	Currency Conversion	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Unit Conversion	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Document Management	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Workflow Management	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Reporting / Business Intelligence																		
	Canned Reports	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
	Ad hoc Reporting	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖
Executive Dashboard	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	
BI tools	✖	✖	✖	✖	✖	✖	✖	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	

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Amphora

London Bridge, The News Building
3 London Bridge Street
London UK SE 95G
Phone: +44 (20) 3878 4187

www.agiboo.com



Product:
Symphony

Founded in 1997, Amphora provides enterprise software solutions designed and developed for companies in the commodities market. Our team includes some of the most experienced software designers, developers, and business analysts in the industry today. Since our inception, our main goal has been to provide the trading community with the most robust, user-friendly, enterprise-wide software package available. Amphora continues to launch new products that address customers' needs and adjust to dynamic market demands.

GLOBAL PRESENCE

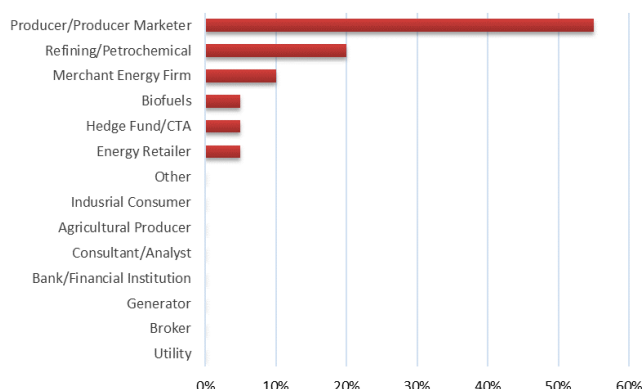
- 3000 users and 100+ employees with direct hands-on experience with commodity trading systems
- Development Centers in London, Hyderabad, Zug
- Service Centers in London, Houston, Zug, Rome, Hyderabad and Singapore

Amphora provides robust and highly scalable multi-commodity trading, risk management, accounting and shipping solutions to support rapidly growing business demands and empowers clients to streamline operations, reduce transaction costs and manage their physical business in a single platform.

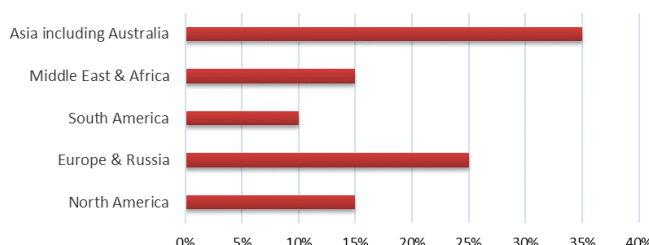
Number of Licensed Client Companies: 23

Representative Clients: Mercuria; Gail; BB Energy; Petredec; Pemex; Circle K

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ Traditional License
- ✓ Hosted in Private Cloud
- ✓ Hosted in Public Cloud

Office Locations and Phone:

- ✓ Dubai, UAE
- ✓ Zug, Switzerland
- ✓ New York City, United States
- ✓ Hyderabad, India
- ✓ Beijing, China

Vendor: **Amphora**Product Name: **Symphony**Version: **3.5**

		✓ Functionality is deployed and in production at a client site	● Not Deployed, but system is capable of providing functionality	✗ System is not currently capable of providing that functionality	- Not Applicable - Functionality not applicable for Commodity													
		ENERGIES						AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Freight Rates
Function / Feature		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concentrates	Precious	North America	Europe	
Production / Operations	Production Mgmt./Generation	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	-	-	-
	Volumetric Management	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	-	-	-
	Net Back Pricing	-	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✗	✗	-	✗	✗	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✗	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✗	✗	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-
	Quality / Sampling	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	-	-	-
Front Office / Trading	Contract Management	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Deal Origination	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Credit Tracking	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Curve Management	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Portfolio Optimization	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	●	●	✗
	Supply-Demand Optimization	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	●	●	✗
	Pre-Deal Analytics "what if"	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Trade Capture																	
	Physical	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Financial	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Exchange	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Deal Types																	
	Spot & Forwards	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Futures	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Swaps	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Options	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Swaptions	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Transportation	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Storage/Inventory	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Complex Pricing	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
Risk Management and Analysis	Position Management																	
	Physical	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Financial	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Credit Risk	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Hedge Effectiveness	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Analytics																	
	Mark-to-Market	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	VaR - Monte Carlo	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	VaR - Other	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Greeks	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	PaR/EaR	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	CVaR	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Portfolio Sensitivity Analysis	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Stress Testing	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	✗	✗
Middle Office	Simulations	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	✗	✗
	Fair Value Disclosure	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Vessel Freight Risk	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓
	Insurance	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓
	Inventory Management	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓
	Scheduling and Logistics																	
	Power Transmission	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-
Back Office	Barge	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	-	-	✗
	Rail	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	-	-	✗
	Truck	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	-	-	✗
	Vessel	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	-	-	✗
	Supply Chain Mgmt./Traceability	✗	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Regulatory Reporting	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Settlement																	
	Actualization	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Invoicing	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Settlements/Reconciliation	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
System Wide	Taxation	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	AR/AP/Ledger (Gen. or Sub)	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Currency Conversion	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Unit Conversion	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Document Management	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Workflow Management	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Reporting / Business Intelligence																	
	Canned Reports	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Ad hoc Reporting	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	Executive Dashboard	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗
	BI tools	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	●	●	✗

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Beacon Platform, Inc

5 Hanover Square, 20th Floor
Suite 2001
New York, NY 10004
Phone: 1 800 893 9826

www.beacon.io



Product:
Beacon Platform

The Beacon Platform is the only commodity and energy platform to provide access to all source code within an integrated development environment, together with front-to-back trading and risk management applications. Beacon was built by the team that created lasting trading and risk technologies at some of the world's largest banks. Their technology platforms have stood the test of time at the world's premier financial institutions. Beacon makes the same level of technology available to everyone. Beacon brings together two of the lead engineers and co-founders, Kirat Singh and Mark Higgins, who are responsible for the three premier enterprise innovation platforms in the industry. The Beacon technology builds on nearly 30 years of innovation, refinements, and lessons learned at Goldman Sachs, JPMorgan, and Bank of America and Merrill Lynch.

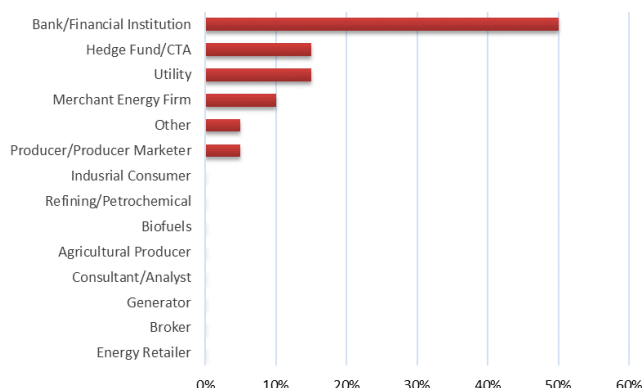
Beacon's transparent source gives developers access to the entire Beacon platform which enables the client — not the vendor — to own the full technology stack. It's designed to be extended, not replaced. Beacon's flexibility makes commodity firms more nimble. Beacon's development environment enables firms to centralize all their technology and development on one platform; develop, deploy and use new strategies and applications quickly; and adapt to regulations faster than before. This transparency and flexibility empower clients to securely build, iteratively test, tweak and integrate proprietary models and analytics, and to extend end-user applications easily. Beacon takes away the shared pain of implementing new technology and lets firms focus on their own core activities. The future of commodity trading is being built, hosted, and distributed on the cloud. Beacon delivers the benefits of cloud technology to clients, including cybersecurity, flexibility, and scale.

Beacon helps to solve the build vs. buy challenge. Clients can manage technology infrastructure as well as build their own solutions in one secure environment.

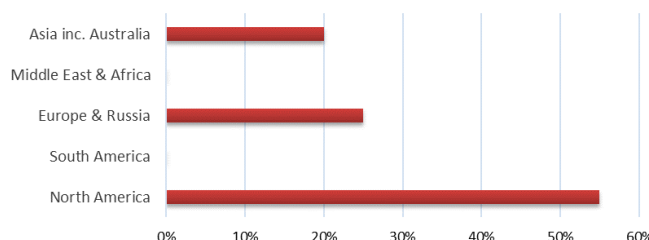
Number of Licensed Client Companies: 25

Representative Clients: EnBW; Statkraft AG; Shell New Energies; Axpo US; Javelin Commodities; Quantix Commodities

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ Deployed in Client's Cloud Account (i.e. AWS or Azure)

Office Locations and Phone:

- ✓ New York, USA +1 646 609 9329
- ✓ London, UK +44 20 361 712 99
- ✓ Tokyo, Japan +81 (0) 70 3884 4310

Vendor: **BEACON PLATFORM, INCORPORATED**Product Name: **Beacon Platform**Version: **Continuous Daily Upgrade**

✔ Functionality is deployed and in production at a client site			● Not Deployed, but system is capable of providing functionality			✖ System is not currently capable of providing that functionality			- Not Applicable - Functionality not applicable for Commodity										
Function / Feature		ENERGIES						AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Freight Rates	
		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concentrates	Precious	North America			Europe
Production / Operations	Production Mgmt./Generation	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	-	-	-	-
	Volumetric Management	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	-	-	-	-
	Net Back Pricing	-	✖	✖	✖	✖	✖	✖	-	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✖	✖	-	✖	✖	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✖	-	-	✖	-	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✖	✖	-	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Quality / Sampling	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	-	-	-	-	
Front Office / Trading	Contract Management	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Deal Origination	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Credit Tracking	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Curve Management	✔	✔	✔	✔	✔	✔	✔	●	●	●	●	✔	✔	✔	✔	✔	✔	✔
	Portfolio Optimization	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Supply-Demand Optimization	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Pre-Deal Analytics "what if"	✔	✔	✔	✔	✔	✔	✔	●	●	●	●	✔	✔	✔	✔	✔	✖	✖
	Trade Capture																		
	Physical	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	●	✖	✖
	Financial	✔	✔	✔	✔	✔	✔	✔	●	●	●	●	✔	✔	✔	✔	✔	●	●
	Exchange	✔	✔	✔	✔	✔	✔	✔	●	●	●	●	✔	✔	✔	✔	✔	●	●
	Deal Types																		
	Spot & Forwards	✔	✔	✔	✔	✔	✔	✔	●	●	●	●	✔	✔	✔	✔	✔	●	●
	Futures	✔	✔	✔	✔	✔	✔	✔	●	✔	✔	✔	✔	✔	✔	✔	✔	●	●
	Swaps	✔	✔	✔	✔	✔	✔	✔	●	✔	✔	✔	✔	✔	✔	✔	✔	●	●
	Options	✔	✔	✔	✔	✔	✔	✔	●	✔	✔	✔	✔	✔	✔	✔	✔	●	●
	Swaptions	✔	✔	✔	✔	✔	✔	✔	●	✔	✔	✔	✔	✔	✔	✔	✔	●	●
	Transportation	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Storage/Inventory	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✔	✖	-
	Complex Pricing	✔	✔	✔	✔	✔	✔	✔	●	●	●	●	✔	✔	✔	✔	✔	●	●
Position Management																			
Physical	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖	
Financial	✔	✔	✔	✔	✔	✔	✔	●	✔	✔	✔	✔	✔	✔	✔	✔	●	●	
Risk Management and Analysis	Credit Risk	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Hedge Effectiveness	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Analytics																		
	Mark-to-Market	✔	✔	✔	✔	✔	✔	✔	●	✔	✔	✔	✔	✔	✔	✔	✔	●	●
	VaR - Monte Carlo	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	VaR - Other	✔	✔	✔	✔	✔	✔	✔	●	✔	✔	✔	✔	✔	✔	✔	✔	●	●
	Greeks	✔	✔	✔	✔	✔	✔	✔	●	✔	✔	✔	✔	✔	✔	✔	✔	●	●
	PaR/EaR	✔	✔	✔	✔	✔	✔	✔	●	✔	✔	✔	✔	✔	✔	✔	✔	●	●
	CVaR	✔	✔	✔	✔	✔	✔	✔	●	✔	✔	✔	✔	✔	✔	✔	✔	●	●
	Portfolio Sensitivity Analysis	✔	✔	✔	✔	✔	✔	✔	●	✔	✔	✔	✔	✔	✔	✔	✔	●	●
	Stress Testing	✔	✔	✔	✔	✔	✔	✔	●	✔	✔	✔	✔	✔	✔	✔	✔	●	●
	Simulations	✔	✔	✔	✔	✔	✔	✔	●	✔	✔	✔	✔	✔	✔	✔	✔	●	●
	Fair Value Disclosure	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Vessel Freight Risk	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	
Insurance	-	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	
Middle Office	Inventory Management	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	●	✖	✖
	Scheduling and Logistics																		
	Power Transmission	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✖	✖	✖	✖	-	-	-	-	-	-	-	-	-	-	-	-	-
	Barge	-	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	-	-	✖	-
	Rail	-	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	-	-	✖	-
	Truck	-	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	-	-	✖	-
Vessel	-	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	-	-	✖	-	
Supply Chain Mgmt./Traceability	✖	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	-	-	✖	-	
Back Office	Regulatory Reporting	✔	✔	●	●	●	●	●	●	●	●	●	●	●	●	✔	●	●	●
	Settlement																		
	Actualization	✔	✔	●	●	●	●	●	●	●	●	●	●	●	●	✔	✔	●	●
	Invoicing	✔	✔	●	●	●	●	●	●	●	●	●	●	●	●	✔	✔	●	●
	Settlements/Reconciliation	✔	✔	●	●	●	●	●	●	●	●	●	●	●	●	✔	✔	●	●
	Taxation	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
System Wide	AR/AP/Ledger (Gen. or Sub)	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Currency Conversion	✔	✔	✔	✔	✔	✔	✔	●	✔	✔	✔	✔	✔	✔	✔	✔	●	●
	Unit Conversion	✔	✔	✔	✔	✔	✔	✔	●	✔	✔	✔	✔	✔	✔	✔	✔	●	●
	Document Management	✔	✔	●	●	●	●	●	●	●	●	●	●	●	●	✔	●	●	●
	Workflow Management	✔	✔	●	●	●	●	●	●	●	●	●	●	●	●	✔	●	●	●
	Reporting / Business Intelligence																		
	Canned Reports	✔	✔	✔	✔	✔	✔	✔	●	✔	✔	✔	✔	✔	✔	✔	✔	●	●
	Ad hoc Reporting	✔	✔	✔	✔	✔	✔	✔	●	✔	✔	✔	✔	✔	✔	✔	✔	●	●
	Executive Dashboard	✔	✔	✔	✔	✔	✔	✔	●	✔	✔	✔	✔	✔	✔	✔	✔	●	●
BI tools	✔	✔	✔	✔	✔	✔	✔	●	✔	✔	✔	✔	✔	✔	✔	✔	●	●	

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Beacon Platform: The Future of Commodities and Energy on the Cloud

The Beacon Platform is the only **commodity and energy platform** to provide access to all source code within an integrated development environment, together with front-to-back trading and risk management applications. This transparency and flexibility empower clients to securely build, iteratively test, tweak and integrate proprietary models and analytics, and to extend end-user applications easily.

Beacon's open architecture model provides **access to all source code**, which enables the client -- not the vendor -- to own the full stack in a modern, cloud-based platform with automated elastic compute services. Beacon removes the pain of designing

new applications and strategies by **streamlining the development and deployment process**, enabling teams to rapidly experiment with new solutions and business models, all on the cloud.

Unlike black-box solutions, Beacon gives commodity and energy companies and their developers the flexibility and scale they need to gain a competitive edge. This approach **empowers clients** to make the most out of Beacon and create their own enterprise intellectual property. This makes the Beacon Platform the only "Buy and Build on Top" **commodity and energy enterprise innovative platform solution** in the industry.

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Brady

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100 Lower Thames Street
London UK EC3R 6DL
Phone: 44 (0) 20 3301 1200

www.bradyplc.com



Product:
Brady Commodities

Brady provides trading, risk and logistics management software solutions to global commodities markets. Brady customers include start-ups to leading multinationals trading in metals and agricultural commodities.

Brady is an agile, independent company, with over 30 years' experience in the commodities industry.

Brady's financial trading solution specialises in hedging and risk management, supporting standard financial contracts including forwards, futures, options and averages to complex derivative instruments. Benefits:

- Gain real-time visibility of mark-to-market, positions and P&L metrics
- Analyse optionality in financial contracts, optimise trading decisions
- Measure and report on risk metrics to comply with your organisation's risk policy
- Apply stress testing, understand the impact of shocks in price, volatility, foreign exchange and interest rates to the P&L
- Perform VaR simulations, ascertain the maximum potential loss on a portfolio over a specific time period for a certain confidence level
- Report the impact of trade events or market data changes to the overall trading P&L
- Perform detailed P&L analysis to assess whether profits are as expected or to explain fluctuations
- Automate commission and brokerage calculations for different types of commodities, exchanges and brokers to reduce risk of error in charges
- Manage initial and variation margin requirements more accurately to avoid unnecessary funds being paid to counterparties
- Brokers can manage generation and distribution of client communications efficiently to focus time on revenue prospecting activities

Brady's physical trading solution specialises in physical trading, managing the logistics complexities of land, maritime and multimodal shipment flows. Benefits:

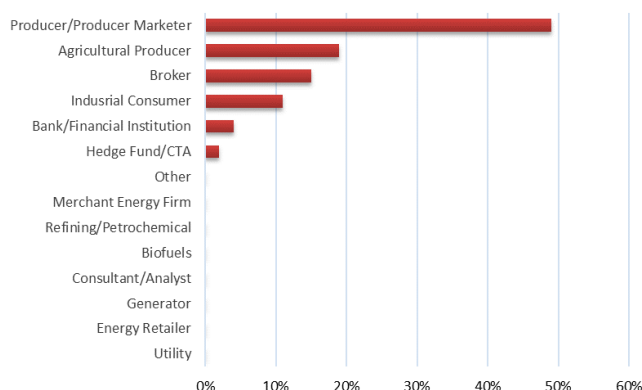
- Determine most profitable trades as prices change with smart hedging tools
- Visualise risks enabling you to plan and react promptly including the application of limits
- Capture nuances of physical deals in metals, such as those involving concentrates; incorporate multiple contents into a contract
- Capture nuances of physical deals in agricultural commodities; incorporate multiple qualities into a contract
- Conduct P&L analysis across multiple legal entities or trading books to explain fluctuations
- Ensure inventory committed in the contract is no longer made available for other sales
- Manage inventory and documentation efficiently between suppliers, depots, silos and customers across borders
- Track shipments with associated transport and voyages by linking them to underlying physical contracts, avoid risk of settlement delays and payment issues
- Manage logistics related costs including inspection of inventory, transport, import and excise duties and taxes from one place
- View different commodity types, statuses and balances of inventory across different locations, whether in transit or in storage, to help decide the optimal, least expensive locations to transport from

Brady's credit risk solution helps to mitigate counterparty risk, prevent loss and manage liquidity. It offers pioneering decision support by intelligently monitoring market conditions. You can analyse the impact of potential adverse scenarios, estimate the risk velocity and comply with robust risk policies. Key functionality includes support for pre-deal checking, exposure management, collateral management and real-time alerting of critical data, whereby users across the organisation can be alerted on scenarios tailored to their business needs.

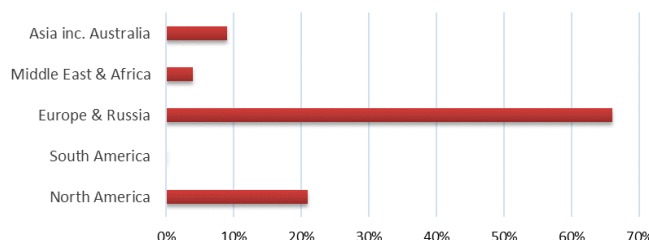
Number of Licensed Client Companies: *Information not provided*

Representative Clients: *Information not provided*

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ Traditional License
- ✓ Hosted in Private Cloud

Office Locations and Phone:

- ✓ Geneva, Switzerland +41 (0) 22 5607 410
- ✓ London, UK +44 (0) 20 3301 1200
- ✓ Cambridge, UK +44 (0) 12 2347 9479
- ✓ Edinburgh, UK +44 (0) 13 1526 3950
- ✓ Bangalore, India +91 80 4445 1057

Vendor: **Brady**Product Name: **Brady Commodities**Version: **2020.2**

✓	Functionality is deployed and in production at a client site	●	Not Deployed, but system is capable of providing functionality						✗	System is not currently capable of providing that functionality				-	Not Applicable - Functionality not applicable for Commodity				
Function / Feature		ENERGIES							AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Freight Rates
		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concentrates	Precious	North America	Europe		
Production / Operations	Production Mgmt./Generation	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-	-
	Volumetric Management	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-	-
	Net Back Pricing	-	●	●	●	●	●	●	-	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✗	✗	-	✗	✗	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✗	-	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg. Quality / Sampling	✗	✗	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Front Office / Trading		-	✗	●	●	✗	●	✗	●	✓	●	●	✓	✓	●	-	-	-	-
	Contract Management	✗	✗	●	●	✗	●	✗	✗	✓	✓	✓	✓	✓	✓	✗	✗	✓	✓
	Deal Origination	✗	✗	●	●	✗	●	✗	✗	✓	✓	✓	✓	✓	✓	✗	✗	✓	✓
	Credit Tracking	✗	✗	●	●	✗	●	✗	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Curve Management	✗	✗	●	●	✗	●	✗	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Portfolio Optimization	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Supply-Demand Optimization	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Pre-Deal Analytics "what if"	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	●	●
	Trade Capture																		
	Physical	✗	●	●	✓	●	✓	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Financial	✗	●	●	✓	●	✓	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Exchange	✗	●	●	✓	●	✓	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Deal Types																		
	Spot & Forwards	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Futures	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Swaps	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Options	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Swaptions	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Transportation	✗	✗	●	●	✗	●	✗	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Storage/Inventory	-	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	-
	Complex Pricing	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Position Management																		
	Physical	✗	●	●	✓	●	✓	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Financial	✗	●	●	✓	●	✓	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
Risk Management and Analysis	Credit Risk	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Hedge Effectiveness	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Analytics																		
	Mark-to-Market	✗	●	●	✓	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	VaR - Monte Carlo	✗	●	●	●	●	●	●	●	●	●	●	✓	✓	✓	●	●	●	●
	VaR - Other	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Greeks	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	PaR/EaR	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	CVaR	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Portfolio Sensitivity Analysis	✗	●	✓	✓	●	✓	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Stress Testing	✗	●	✓	✓	●	✓	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Simulations	✗	●	✓	✓	●	✓	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Fair Value Disclosure	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Vessel Freight Risk	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Insurance	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	
Middle Office	Inventory Management	✗	●	●	✓	●	✓	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Scheduling and Logistics																		
	Power Transmission	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✗	●	●	✗	-	-	-	-	-	-	-	-	-	-	-	-	-
	Barge	-	-	●	✓	✗	●	✗	✗	✓	✓	✓	✓	✓	●	-	-	✓	-
	Rail	-	-	●	●	✗	✓	✗	✗	✓	✓	✓	✓	✓	●	-	-	✓	-
	Truck	-	-	●	✓	✗	✓	✗	✗	✓	✓	✓	✓	✓	●	-	-	✓	-
	Vessel	-	-	●	✓	✗	●	✗	✗	✓	✓	✓	✓	✓	●	-	-	✓	-
Supply Chain Mgmt./Traceability	✗	-	●	●	✗	●	✗	✗	✓	✓	✓	✓	✓	✓	-	-	✓	-	
Back Office	Regulatory Reporting	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Settlement																		
	Actualization	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	✗	✗	✓	✓
	Invoicing	✗	●	●	✓	●	✓	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Settlements/Reconciliation	✗	●	●	✓	●	✓	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Taxation	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
System Wide	AR/AP/Ledger (Gen. or Sub)	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Currency Conversion	✗	●	●	✓	●	✓	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Unit Conversion	✗	●	●	✓	●	✓	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Document Management	✗	●	●	✓	●	✓	●	●	✓	✓	✓	✓	✓	✓	✗	✗	✓	✓
	Workflow Management	✗	●	●	✓	●	✓	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Reporting / Business Intelligence																		
	Canned Reports	✗	●	●	✓	●	✓	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Ad hoc Reporting	✗	●	●	✓	●	✓	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
	Executive Dashboard	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓
BI tools	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓	✓	

Brady

Centennium House
100 Lower Thames Street
London UK EC3R 6DL
Phone: 44 (0) 20 3301 1200



www.bradyplc.com

Product:
Brady Energy

Brady provides trading, risk and logistics management software solutions to European energy markets, to empower you to trade confidently, profitably and sustainably today and in the future. Its customers include start-ups to leading multinational utilities trading in power, gas and renewables, who own assets or trade on behalf of others.

Front, mid and back office teams can better understand costs throughout the financial and physical trading life cycle, assess market and credit risks in real-time and efficiently manage the logistics involved in the timely delivery of power.

Brady is an independent company, agile in the way it conducts business and how it provides customer service. The company has over 30 years' experience in the energy trading sector and has been at the forefront of exchange market design, helping to develop the operations for the first power exchange in Europe. Its software continues to be shaped by developments across the most liquid energy markets in Europe, to meet the highest standards for power trading.

The company's short-term/intraday power trading solutions address the following key areas:

- Power generation planning and order preparation
- Day-ahead trading on EPEX and Nord Pool power exchanges
- Intraday power trading on EPEX's Intraday Continuous Market
- Delivery of power through the majority of transmission systems operators (TSOs) across Europe; automated bidding and results processing in ancillary and balancing markets
- High volume trade data processing in near real-time for customised aggregation and analysis
- Scheduling (nominations) to meet power TSO communications protocol and deadlines
- Bidding in Balancing Markets directly with TSOs
- Meter data management for more accurate customer billing
- Settlement and invoicing processes of complex contracts (such as Power Purchase Agreements and Tolling Contracts)

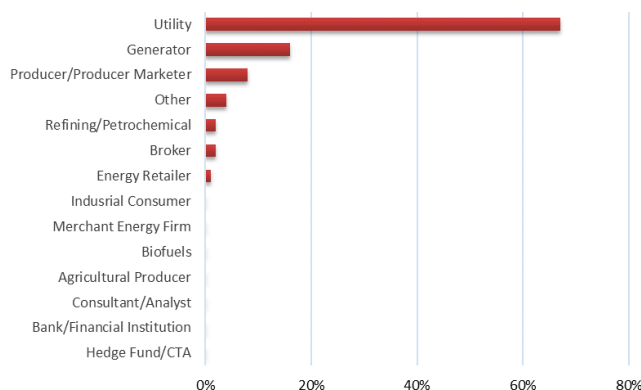
Brady's energy trading and risk management solution specialises in long-term financial and physical trading in electricity, gas, oil, emissions, EI certificates, coal, renewables and currency across European markets. It facilitates business decision-making with the ability to assess market risk factors and their impact on trading strategies in real-time, and helps to meet reporting requirements for key regulations such as MiFID, EMIR and REMIT. Delivered as a packaged solution, with the option for pre-configured delivery to a wide range of markets and contracts, business benefits can be realised quickly, in a compliant manner.

Brady's credit risk solution helps to mitigate counterparty risk, prevent loss and manage liquidity. It offers pioneering decision support by intelligently monitoring market conditions. You can analyse the impact of potential adverse scenarios, estimate the risk velocity and comply with robust risk policies. Key functionality includes support for pre-deal checking, exposure management, collateral management and real-time alerting of critical data, whereby users across the organisation can be alerted on scenarios tailored to their business needs.

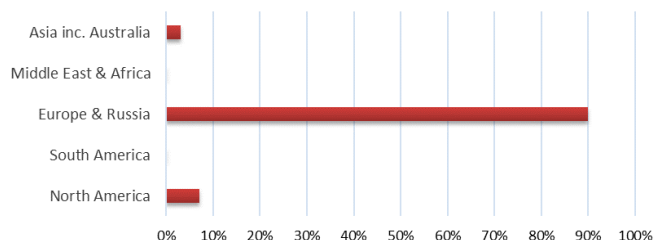
Number of Licensed Client Companies: *Information not provided*

Representative Clients: *Information not provided*

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ Traditional License
- ✓ Hosted in Private Cloud

Office Locations and Phone:

- ✓ London, UK +44 (0) 20 3301 1200
- ✓ Bergen, Norway +47 99 09 99 98
- ✓ Edinburgh, UK +44 (0) 13 1526 3950
- ✓ Zug, Switzerland +41 41 728 72 42
- ✓ Halden, Norway +47 99 09 99 98

Vendor: **Brady**Product Name: **Brady Energy**Version: **2020.2**

✔ Functionality is deployed and in production at a client site			🟡 Not Deployed, but system is capable of providing functionality			✖ System is not currently capable of providing that functionality			- Not Applicable - Functionality not applicable for Commodity										
Function / Feature		ENERGIES							AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Freight Rates
		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concentrates	Precious	North America	Europe		
Production / Operations	Production Mgmt./Generation	✔	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	-	-	-	-
	Volumetric Management	-	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	-	-	-	-
	Net Back Pricing	-	🟡	✖	✖	✖	✖	✖	-	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✔	✖	-	✖	✖	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✖	-	-	✖	-	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✔	🟡	-	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Quality / Sampling	-	🟡	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	-	-	-	-	
Front Office / Trading	Contract Management	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
	Deal Origination	✔	🟡	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	🟡	✖	✖
	Credit Tracking	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
	Curve Management	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
	Portfolio Optimization	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
	Supply-Demand Optimization	✔	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	🟡	✖	✖
	Pre-Deal Analytics "what if"	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
	Trade Capture																		
	Physical	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
	Financial	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
	Exchange	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
	Deal Types																		
	Spot & Forwards	✔	✔	✖	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖
	Futures	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
	Swaps	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖
	Options	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
	Swaptions	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
Transportation	✔	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	
Storage/Inventory	-	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	
Complex Pricing	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖	
Position Management																			
Physical	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
Financial	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
Risk Management and Analysis	Credit Risk	✔	✔	✔	✔	✔	✔	✔	🟡	🟡	🟡	🟡	✔	✔	✔	✔	✔	✔	✔
	Hedge Effectiveness	🟡	🟡	🟡	✖	✖	🟡	✖	✖	✖	✖	✖	✖	✖	✖	✖	🟡	✖	✖
	Analytics																		
	Mark-to-Market	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
	VaR - Monte Carlo	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
	VaR - Other	🟡	🟡	🟡	✖	✖	🟡	✖	✖	✖	✖	✖	✖	✖	✖	✖	🟡	✖	✖
	Greeks	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
	PaR/EaR	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
	CVaR	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
	Portfolio Sensitivity Analysis	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
	Stress Testing	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
	Simulations	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
	Fair Value Disclosure	🟡	🟡	🟡	✖	✖	🟡	✖	✖	✖	✖	✖	✖	✖	✖	✖	🟡	✖	✖
Vessel Freight Risk	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	
Insurance	-	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	
Middle Office	Inventory Management	✔	✔	🟡	✖	✖	🟡	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
	Scheduling and Logistics																		
	Power Transmission	✔	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✔	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✔	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✔	✖	✖	✖	-	-	-	-	-	-	-	-	-	-	-	-	-
	Barge	-	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	-	-	✖	-
	Rail	-	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	-	-	✖	-
	Truck	-	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	-	-	✖	-
Vessel	-	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	-	-	✖	-	
Supply Chain Mgmt./Traceability	✖	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	-	-	✖	-	
Back Office	Regulatory Reporting	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
	Settlement																		
	Actualization	✔	🟡	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Invoicing	✔	🟡	🟡	✖	✖	🟡	✖	✖	✖	✖	✖	✖	✖	✖	✖	🟡	✖	✖
	Settlements/Reconciliation	✔	🟡	🟡	✖	✖	🟡	✖	✖	✖	✖	✖	✖	✖	✖	✖	🟡	✖	✖
	Taxation	🟡	🟡	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	🟡	✖	✖
AR/AP/Ledger (Gen. or Sub)	✔	🟡	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	🟡	✖	✖	
System Wide	Currency Conversion	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
	Unit Conversion	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	🟡	✖	✖
	Document Management	✔	✔	🟡	✖	✖	🟡	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
	Workflow Management	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
	Reporting / Business Intelligence																		
	Canned Reports	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
	Ad hoc Reporting	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
	Executive Dashboard	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖
BI tools	✔	✔	✔	✖	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✖	✖	

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www.contigosoftware.com



Product:
enTrader

Contigo provides an award-winning browser based ETRM system offered in the cloud or deployed. The system manages gas, power, carbon emissions and financial oil positions.

Contigo has a modular product suite which provides sophisticated solutions, managing the full trade lifecycle, portfolio management, P&L, risk analytics, regulatory reporting, VaR and settlement. In addition, the system manages energy notifications, nominations and scheduling through our sister company, eZ-nergy. Trades executed on venues and OTCs are straight through processed. Trades are managed natively down to low-level granularity with near real-time reporting capabilities supporting critical decision making and intraday trading. The system accurately provides open and closed positions on demand and offers flexible reporting via an ODATA connector to plug in a Power BI dashboard.

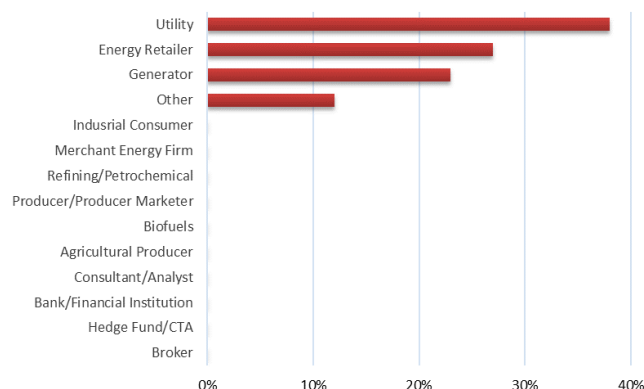
The system is pre-configured, providing 'out-of-the-box' functionality, allowing rapid implementation times.

Contigo products support SOAP and REST APIs and can be integrated into in-house or third-party systems.

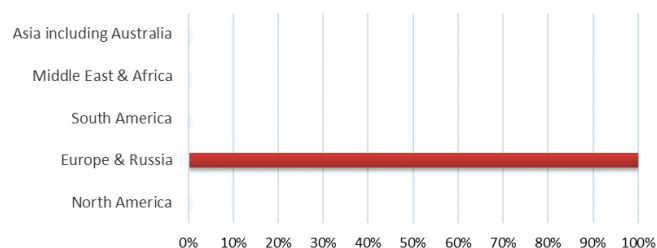
Number of Licensed Client Companies: 33

Representative Clients: Eniig; InterGen; SSE; Ecotricity; Good Energy; HOFOR

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ Traditional License
- ✓ Hosted in Private Cloud

Office Locations and Phone:

- ✓ Solihull, UK +44 (0) 845 838 6848

Vendor: **Contigo Software Limited**Product Name: **enTrader**Version: **8.3**

		✓ Functionality is deployed and in production at a client site	● Not Deployed, but system is capable of providing functionality	✗ System is not currently capable of providing that functionality	- Not Applicable - Functionality not applicable for Commodity													
		ENERGIES						AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Freight Rates
Function / Feature		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concentrates	Precious	North America	Europe	
Production / Operations	Production Mgmt./Generation	✗	✓	●	●	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Volumetric Management	-	✓	●	●	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Net Back Pricing	-	✓	●	●	✗	✓	✗	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✓	●	-	✗	●	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✗	-	-	✗	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✓	✓	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-
	Quality / Sampling	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
Front Office / Trading	Contract Management	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
	Deal Origination	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
	Credit Tracking	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
	Curve Management	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
	Portfolio Optimization	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Supply-Demand Optimization	✓	✓	●	●	✗	●	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Pre-Deal Analytics "what if"	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
	Trade Capture																	
	Physical	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
	Financial	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
	Exchange	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
	Deal Types																	
	Spot & Forwards	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
	Futures	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
	Swaps	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	●	✗
	Options	✓	✓	●	●	✗	●	✗	✗	✗	✗	✗	✗	✗	✗	✗	●	✗
	Swaptions	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Transportation	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Storage/Inventory	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-
	Complex Pricing	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	●	✗
Risk Management and Analysis	Position Management																	
	Physical	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
	Financial	✓	✓	●	●	✗	●	✗	✗	✗	✗	✗	✗	✗	✗	✗	●	✗
	Credit Risk	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	●	✗
	Hedge Effectiveness	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	●	✗
	Analytics																	
	Mark-to-Market	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
	VaR - Monte Carlo	●	●	●	●	✗	●	✗	✗	✗	✗	✗	✗	✗	✗	✗	●	✗
	VaR - Other	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
	Greeks	✓	✓	●	●	✗	●	✗	✗	✗	✗	✗	✗	✗	✗	✗	●	✗
	PaR/EaR	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	CVaR	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Portfolio Sensitivity Analysis	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Stress Testing	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Middle Office	Simulations	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Fair Value Disclosure	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
	Vessel Freight Risk	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Insurance	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Inventory Management	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Scheduling and Logistics																	
	Power Transmission	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✗	✗	✗	✗	-	-	-	-	-	-	-	-	-	-	-	-
Back Office	Barge	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Rail	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Truck	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Vessel	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Supply Chain Mgmt./Traceability	✗	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Regulatory Reporting	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
	Settlement																	
	Actualization	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
	Invoicing	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
	Settlements/Reconciliation	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
System Wide	Taxation	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
	AR/AP/Ledger (Gen. or Sub)	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
	Currency Conversion	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
	Unit Conversion	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
	Document Management	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
	Workflow Management	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
Reporting / Business Intelligence	Reporting / Business Intelligence																	
	Canned Reports	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Ad hoc Reporting	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
	Executive Dashboard	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
BI tools	BI tools	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗

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simpler

Energy Trading and
Operations Automation

European Energy Trading and
Risk Management Software

Integrated ECVN, EDT
and EDL communication tool

enFlow **enTrader[®]** **enVoy**

CTRM Cloud

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Suite 2430
San Francisco, CA 94105
Phone: 628 888 2508

www.ctrmcloud.com



Product:
CTRM Cloud

CTRM Cloud is an award-winning trading and risk management platform for commodity/energy markets. It offers “CTRM as a service” to help organizations across the commodity value-chain with real time decision support & reporting. The company was started in 2016 with the vision of building a comprehensive, scalable, sophisticated, yet easy to use solution.

CTRM Cloud delivers the benefits of a modern, cloud-native solution including rapid implementations, continuous product enhancements, high performance, scalability, better user experience – all at a significantly lower TCO. CTRM Cloud solution comes preloaded with a comprehensive set of reference and market data, as well as pre-built connections to multiple exchanges, trading venues, and market data providers.

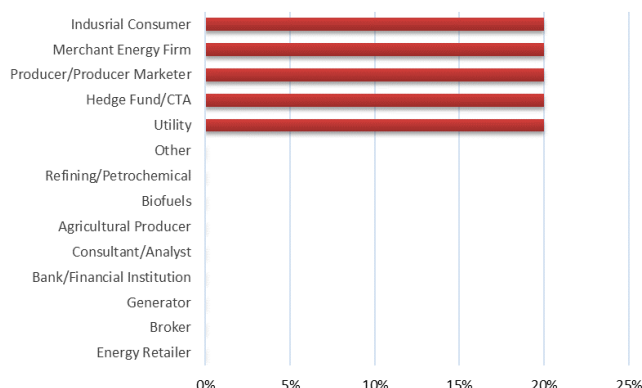
The platform utilizes a microservices based architecture to enable modular deployment for point solutions, ready to scale with your business requirements. At the same time, it has the breadth and depth of the functionality and the robustness required to serve as an enterprise-wide, end-to-end CTRM solution for large, global companies with complex business problems.

The highly experienced CTRM Cloud team serves customers in various commodity/energy sectors around the globe, who rely on the platform to make timely and well-informed decisions for all of their physical and financial trading.

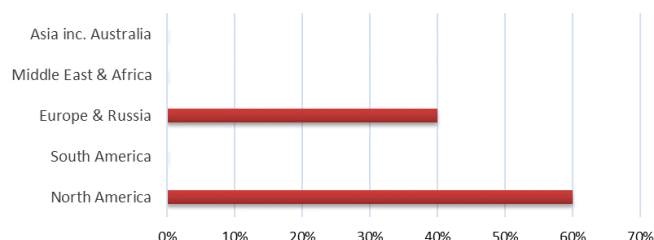
Number of Licensed Client Companies: *Information not provided*

Representative Clients: *Information not provided*

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ SaaS: Multi-Tenanted

Office Locations and Phone:

- ✓ San Francisco CA USA
- ✓ Chicago IL USA
- ✓ Stamford CT USA

Vendor: **CTRM Cloud**Product Name: **CTRM Cloud**Version: **0**

		✓ Functionality is deployed and in production at a client site	● Not Deployed, but system is capable of providing functionality	✗ System is not currently capable of providing that functionality	- Not Applicable - Functionality not applicable for Commodity													
		ENERGIES						AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Frieght Rates
Function / Feature		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concen-trates	Precious	North America	Europe	
Production / Operations	Production Mgmt./Generation	✓	✓	✓	✓	●	●	●	●	●	●	●	✗	✗	✗	-	-	-
	Volumetric Management	-	✓	✓	✓	●	●	●	●	●	●	●	✗	✗	✗	-	-	-
	Net Back Pricing	-	✗	✗	✗	✗	✗	✗	-	-	-	-	✗	✗	✗	-	-	-
	DOI/Owner Balancing	-	✗	✗	-	✗	✗	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✗	-	-	✗	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✗	✗	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-
Front Office / Trading	Quality / Sampling	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Contract Management	✓	✓	✓	✓	●	●	✓	●	●	●	●	✓	●	✓	✓	✓	✗
	Deal Origination	✓	✓	✓	✓	●	●	✓	●	●	●	●	✓	●	✓	✓	✓	✗
	Credit Tracking	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	✗
	Curve Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Portfolio Optimization	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Supply-Demand Optimization	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Pre-Deal Analytics "what if"	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Trade Capture																	
	Physical	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Financial	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Exchange	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Deal Types																	
	Spot & Forwards	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Futures	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Swaps	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Options	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Swaptions	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Transportation	●	●	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Storage/Inventory	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-
	Complex Pricing	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	✗
	Position Management																	
	Physical	✓	✓	✓	✓	●	●	✓	●	●	●	●	✓	●	✓	✓	✓	✗
	Financial	✓	✓	✓	✓	●	●	✓	●	●	●	●	✓	●	✓	✓	✓	✗
Risk Management and Analysis	Credit Risk	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	✗
	Hedge Effectiveness	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Analytics																	
	Mark-to-Market	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	VaR - Monte Carlo	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	VaR - Other	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Greeks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	PaR/EaR	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	CVaR	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Portfolio Sensitivity Analysis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Stress Testing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Simulations	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Fair Value Disclosure	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Middle Office	Vessel Frieght Risk	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Insurance	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Inventory Management	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Scheduling and Logistics																	
	Power Transmission	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✗	✗	✗	✗	-	-	-	-	-	-	-	-	-	-	-	-
	Barge	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
Back Office	Rail	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Truck	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Vessel	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Supply Chain Mgmt./Traceability	✗	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Regulatory Reporting	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Settlement																	
System Wide	Actualization	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Invoicing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Settlements/Reconciliation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Taxation	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	AR/AP/Ledger (Gen. or Sub)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Currency Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Unit Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Document Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Workflow Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
System Wide	Reporting / Business Intelligence																	
	Canned Reports	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Ad hoc Reporting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Executive Dashboard	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
System Wide	BI tools	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗

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CTRM Cubed

Lake View House
Wilton Drive
Warwick UK

www.tradecube.io



Product:
TradeCube

TradeCube from CTRM[®] is an innovative CTRM platform that combines Trading and Risk Management with Data Analytics, into an always-on SaaS service, delivered on a cost-effective pay-as-use basis.

The self-service platform is cloud deployed and designed to reduce the setup and implementation time from months down to minutes. Aimed at businesses of all sizes that need an easy-to-use CTRM, TradeCube delivers without the stress, hassle, time, and cost of a major project implementation.

TradeCube comes pre-configured with a range of useful standing data, such as counterparties, exchanges and products to make getting started even quicker. The service includes support for a full spectrum of commodities.

The Data Analytics component adds flexible cube analysis and reporting, enabling big data analysis of portfolio metrics without the need for separate reporting tools or analysis products. Drill up and down key metrics including Profit and Loss, Mark-to-Market and Value-at-Risk over any portfolio or timescale with the built-in CubeViewer component.

Metrics are collated into a KPI dashboard customisable by each user, to present key charts and trends and the main page, providing an instant overview of the trading and portfolio.

Admin users can clone, backup, restore and configure environments with a single click; perfect for setting up training or testing environments. Specialist IT staff are not needed as the infrastructure, servers, databases, and installation are all included in the service. Auto-updates keep the system updated and upgraded periodically and are also included at no extra cost.

Best of all TradeCube, comes with no commercial risk. The service allows an instant environment setup with a 30-day free trial, no long-term commitments, or complex contracts.

Transparent pricing means clients only pay for what is needed through a low per-user per-month service fee, alongside straightforward SaaS terms. Uptime is guaranteed through service charge rebates for any month not meeting the uptime SLA.

The self-service concept is enhanced by a secure REST API which enables straightforward integration to cloud, intranet and other microservices. The platform includes a Web Services component allowing data to be selected and passed to external systems (for example for custom reporting). Event driven Webhooks allow actions to be run automatically when data is updated. Sample open source code examples for both Web Services and Webhooks are available to clone or fork on GitHub.

Extensibility is provided through the online store providing additional plug-ins, components, modules, data services, and third-party services.

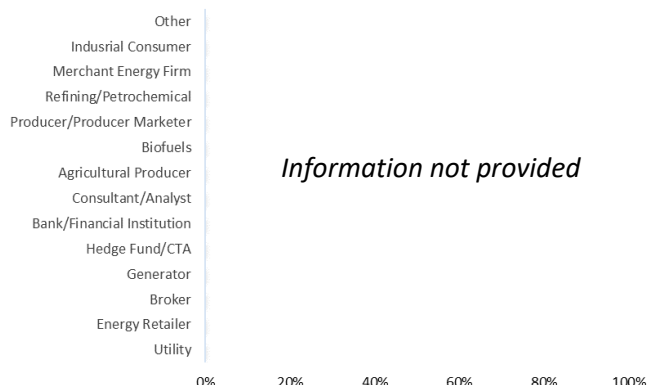
Built on reliable and scalable container infrastructure, TradeCube brings all the benefits of a modern SaaS CTRM, at a fraction of the cost of a legacy monolith system.

Sign up for a free 30 day no commitment trial at <https://tradecube.io>

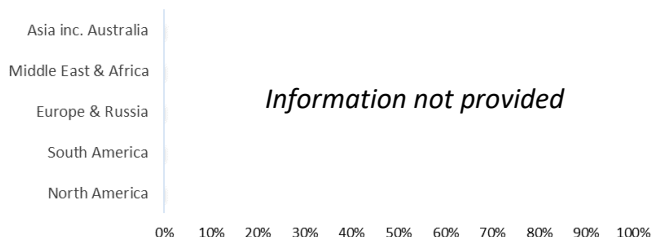
Number of Licensed Client Companies: *Information not provided*

Representative Clients: *Information not provided*

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ SaaS: Multi-Tenanted

Office Locations and Phone:

- ✓ Warwick, UK

Vendor: **CTRM Cubed**Product Name: **TradeCube**Version: **2020**

		✓ Functionality is deployed and in production at a client site	● Not Deployed, but system is capable of providing functionality	✗ System is not currently capable of providing that functionality	- Not Applicable - Functionality not applicable for Commodity													
		ENERGIES						AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Frieght Rates
Function / Feature		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concen-trates	Precious	North America	Europe	
Production / Operations	Production Mgmt./Generation	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Volumetric Management	-	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Net Back Pricing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✗	✗	-	✗	✗	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✗	-	-	✗	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✗	✗	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-
Front Office / Trading	Quality / Sampling	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Contract Management	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Deal Origination	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Credit Tracking	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Curve Management	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Portfolio Optimization	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Supply-Demand Optimization	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Pre-Deal Analytics "what if"	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Trade Capture																	
	Physical	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Financial	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Exchange	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Deal Types																	
	Spot & Forwards	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Futures	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Swaps	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Options	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Swaptions	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Transportation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Storage/Inventory	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-
	Complex Pricing	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Position Management																	
Risk Management and Analysis	Physical	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Financial	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Credit Risk	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Hedge Effectiveness	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Analytics																	
	Mark-to-Market	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	VaR - Monte Carlo	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	VaR - Other	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Greeks	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	PaR/EaR	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	CVaR	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Portfolio Sensitivity Analysis	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Stress Testing	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Simulations	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Fair Value Disclosure	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Middle Office	Vessel Frieght Risk	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Insurance	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Inventory Management	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Scheduling and Logistics																	
	Power Transmission	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
Back Office	Barge	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Rail	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Truck	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Vessel	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Supply Chain Mgmt./Traceability	✗	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Regulatory Reporting	●	●	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
System Wide	Settlement																	
	Actualization	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Invoicing	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Settlements/Reconciliation	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Taxation	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	AR/AP/Ledger (Gen. or Sub)	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Currency Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Unit Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Document Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Workflow Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Reporting / Business Intelligence	Reporting / Business Intelligence																	
	Canned Reports	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Ad hoc Reporting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Executive Dashboard	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BI tools	BI tools	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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CubeLogic

1200 Smith Street
Suite 1600
Houston, TX 77002
Phone: 832-498-6374

www.cubelogic.com



Product:
RiskCubed

CubeLogic provides SaaS and on-premise, BI-enabled risk management and compliance solutions for the Energy, Commodities, and Financial Services sectors.

The CubeLogic product range uses advanced Business Intelligence (BI) technologies on a Microsoft platform to address the needs of Risk Managers and Compliance Officers in the following categories:

- Credit Risk,
- Market Risk,
- Liquidity Risk, and
- Regulatory Risk.

Historically, Risk Managers had to rely on batch-based reporting systems and Excel spreadsheets to perform their job. CubeLogic has combined Cube (OLAP) technology, BI self-service reporting tools, and advanced workflow capabilities to deliver a unique value proposition to compliance and Risk Managers

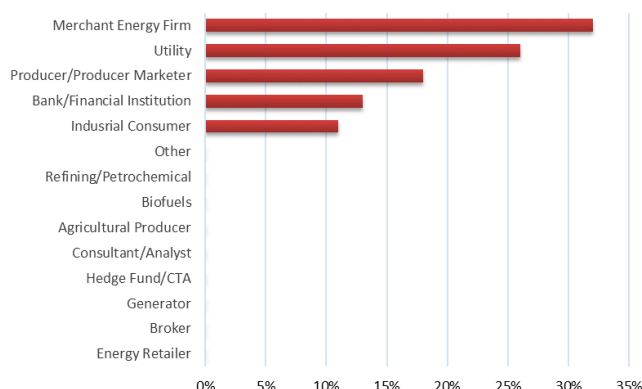
Features include:

- Automated on-boarding of new customers including KYC and financial checks
- Automated limit setting and monitoring
- Full collateral management and settlement capabilities
- Real-time monitoring of Credit Risk, Market Risk and Liquidity
- Compliance with various Trade Surveillance regulatory monitoring and reporting needs
- Natural Language-based analysis of social media sentiment
- On-the-fly self-service reporting and analysis
- Advanced analytics

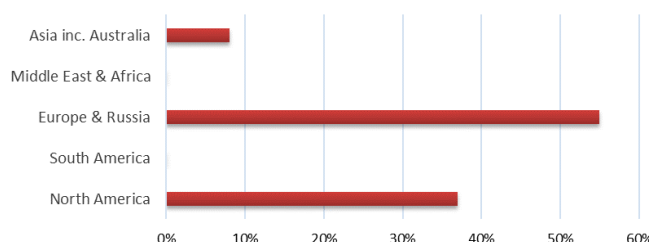
Number of Licensed Client Companies: 41

Representative Clients: Suncor Energy; Greensill Capital; Exelon/Constellation; Direct Energy; Flow Traders; Chevron

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ Traditional License
- ✓ SaaS: Single Tenant

Office Locations and Phone:

- ✓ London, UK +44 (0) 2038701495
- ✓ Berlin, Germany +49 30 772 20 700
- ✓ Bangalore, India +91 (0) 80 48530829
- ✓ Singapore +65 6809 5034

Vendor: **CubeLogic**Product Name: **RiskCubed**Version: **7.2**

		✓ Functionality is deployed and in production at a client site	● Not Deployed, but system is capable of providing functionality	✗ System is not currently capable of providing that functionality	- Not Applicable - Functionality not applicable for Commodity													
		ENERGIES						AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Frieght Rates
Function / Feature		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concentrates	Precious	North America	Europe	
Production / Operations	Production Mgmt./Generation	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Volumetric Management	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Net Back Pricing	-	✗	✗	✗	✗	✗	✗	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✗	✗	-	✗	✗	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✗	-	-	✗	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✗	✗	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-
Front Office / Trading	Quality / Sampling	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Contract Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Deal Origination	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Credit Tracking	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Curve Management	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Portfolio Optimization	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Supply-Demand Optimization	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Pre-Deal Analytics "what if"	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Trade Capture																	
	Physical	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Financial	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Exchange	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Deal Types																	
	Spot & Forwards	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Futures	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Swaps	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Options	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Swaptions	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Transportation	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Storage/Inventory	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-
	Complex Pricing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Position Management																	
	Physical	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Financial	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Risk Management and Analysis	Credit Risk	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Hedge Effectiveness	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Analytics																	
	Mark-to-Market	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	VaR - Monte Carlo	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	VaR - Other	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Greeks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	PaR/EaR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CVaR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Portfolio Sensitivity Analysis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Stress Testing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Simulations	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Fair Value Disclosure	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Middle Office	Vessel Frieght Risk	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Insurance	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Inventory Management	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Scheduling and Logistics																	
	Power Transmission	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
Back Office	Barge	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Rail	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Truck	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Vessel	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Supply Chain Mgmt./Traceability	✗	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	AR/AP/Ledger (Gen. or Sub)	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
System Wide	Regulatory Reporting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Settlement																	
	Actualization	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Invoicing	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Settlements/Reconciliation	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Taxation	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	AR/AP/Ledger (Gen. or Sub)	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Currency Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
System Wide	Unit Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Document Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Workflow Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Reporting / Business Intelligence																	
	Canned Reports	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
System Wide	Ad hoc Reporting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Executive Dashboard	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	BI tools	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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EGSSIS – Butlers & Whizzkids

Korte Keppestraat 7
Bus 32a
9320 Ereembodegem, Belgium
Phone: 0032 24 56 17 10

www.egssis.com



Product:
egssPort Gas & Power

EGSSIS NV is a Belgian service provider in the gas and power markets. Since 2008 they offer SaaS solutions for market access & communications, gas and power operations, complemented by a dedicated 24/7 dispatching desk. EGSSIS relies on 20+ years of operational expertise across the industry to bring its customers Peace of Mind.

Many companies in the market face a make-or-buy decision, with EGSSIS offering a future-proof software-as-a-service alternative. Add the possibility of (partially) outsourced operations and EGSSIS ensures that their customers can focus on the core business of trading and/or shipping.

55+ companies already adopted EGSSIS' software solutions across 18 countries for gas, and 7 for power. The software modules are:

- Cosmos (<https://www.egssis.com/software/cosmos/>): automated market communications across the gas and power markets, with every counterpart and market participant, in any format and protocol used
- egssPort Gas (<https://www.egssis.com/software/egssport-gas/>): Gas balancing and nomination software
- egssPort Power (<https://www.egssis.com/software/egssport-power/>): Power scheduling software
- EGSSIS Invoic & EGSSIS Switching: custom built for some customers to do invoicing and switching of gas customers (at the moment used only in Belgium and Netherlands)

The technology powering EGSSIS' platform is based on a modern and open IT infrastructure, allowing for interconnectivity via APIs and webhooks with various solutions such as: ETRM, back-office, optimization & forecasting tools, TSO/SSO platforms, etc.

Most companies also use EGSSIS' dispatching services, either 24/7, out-of-hours, or custom timing. The dispatching desk is staffed with 2 people per shift, who work relentlessly to execute the tasks defined by the customers' scope and merit orders.

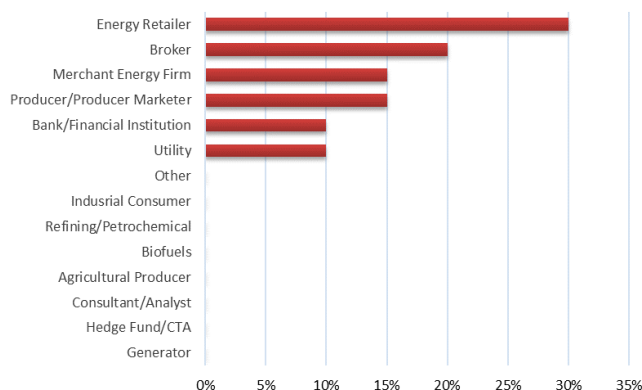
EGSSIS keeps it simple: they want to serve you with solutions that will keep your business running any time of day or night. Their butlers & whizzkids are available 24/7 to help you across any bump in the road.

EGSSIS looks forward to helping your business thrive in the European energy markets.

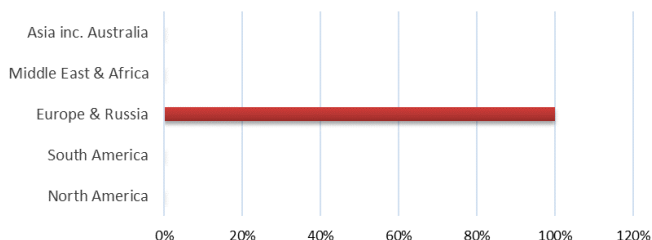
Number of Licensed Client Companies: 50

Representative Clients: Orsted; Alperg; Enovos; Gasum; PST – PGNiG Supply & Trading; Innogy

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ Hosted in Private Cloud

Office Locations and Phone:

- ✓ Paris, France 0033 186 26 73 12
- ✓ Kassel, Germany 0049 561 94 039 006

Vendor: **EGSSIS - Butlers & Whizzkids**Product Name: **eggsPort Gas & Power**Version: **4.9.1**

✔ Functionality is deployed and in production at a client site			● Not Deployed, but system is capable of providing functionality						✘ System is not currently capable of providing that functionality				- Not Applicable - Functionality not applicable for Commodity						
Function / Feature		ENERGIES							AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Frieght Rates
		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concen- trates	Precious	North America	Europe		
Production / Operations	Production Mgmt./Generation	●	✔	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	-	-	-	-
	Volumetric Management	-	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	-	-	-	-
	Net Back Pricing	-	✘	✘	✘	✘	✘	✘	-	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✘	✘	-	✘	✘	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✘	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✘	-	-	✘	-	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✔	✔	-	✘	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Quality / Sampling	-	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	-	-	-	-
Front Office / Trading	Contract Management	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Deal Origination	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Credit Tracking	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Curve Management	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Portfolio Optimization	✔	✔	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Supply-Demand Optimization	✔	✔	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Pre-Deal Analytics "what if"	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Trade Capture																		
	Physical	●	●	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Financial	●	●	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Exchange	●	●	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Deal Types																		
	Spot & Forwards	●	●	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Futures	●	●	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Swaps	●	●	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Options	●	●	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Swaptions	●	●	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Transportation	✔	✔	✘	✘	✘	✘	✔	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Storage/Inventory	-	✔	✘	✘	✘	✘	✔	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	-
	Complex Pricing	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
Position Management																			
Physical	✔	✔	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	
Financial	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	
Risk Management and Analysis	Credit Risk	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Hedge Effectiveness	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Analytics																		
	Mark-to-Market	●	●	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	VaR - Monte Carlo	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	VaR - Other	●	●	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Greeks	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	PaR/EaR	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	CVaR	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Portfolio Sensitivity Analysis	●	●	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Stress Testing	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Simulations	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Fair Value Disclosure	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Vessel Frieght Risk	-	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
Insurance	-	-	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	
Middle Office	Inventory Management	✔	✔	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Scheduling and Logistics																		
	Power Transmission	✔	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✘	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✔	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✔	✘	✘	✘	-	-	-	-	-	-	-	-	-	-	-	-	-
	Barge	-	-	✘	✘	✘	✘	●	✘	✘	✘	✘	✘	✘	✘	-	-	✘	-
	Rail	-	-	✘	✘	✘	✘	●	✘	✘	✘	✘	✘	✘	✘	-	-	✘	-
	Truck	-	-	✘	✘	✘	✘	●	✘	✘	✘	✘	✘	✘	✘	-	-	✘	-
Vessel	-	-	✘	✘	✘	✘	●	✘	✘	✘	✘	✘	✘	✘	-	-	✘	-	
Supply Chain Mgmt./Traceability	✘	-	✘	✘	✘	✘	●	✘	✘	✘	✘	✘	✘	✘	-	-	✘	-	
Back Office	Regulatory Reporting	✔	✔	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Settlement																		
	Actualization	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Invoicing	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Settlements/Reconciliation	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Taxation	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
AR/AP/Ledger (Gen. or Sub)	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	
System Wide	Currency Conversion	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Unit Conversion	✔	✔	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Document Management	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Workflow Management	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Reporting / Business Intelligence																		
	Canned Reports	✔	✔	✘	✘	✘	✘	●	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Ad hoc Reporting	✔	✔	✘	✘	✘	✘	●	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
	Executive Dashboard	✔	✔	✘	✘	✘	✘	●	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
BI tools	✔	✔	✘	✘	✘	✘	●	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	

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Eka Software

101 Merritt 7
Suite 300
Norwalk, CT 06810
Phone: 203 810 4250

www.ekaplus.com



Product:
Eka CTRM

With its visionary approach to the challenges faced by commodity businesses, Eka Software Solutions is now the world leader in cloud platform solutions for commodity management. The company's forward-thinking approach has been proven to help companies efficiently and profitably meet the challenges of complex and volatile markets with faster, data-powered decision making and highly capable risk management.

Driven by Cloud, Blockchain, Artificial Intelligence, Machine Learning and advanced Analytics, Eka provides the only multi-asset, cloud-native Platform that is driven by new-age architecture. The Platform hosts 50+ powerful and scalable apps for trading, risk, supply chain and financial management that serve entire value chains for agriculture, energy, metals and mining, CPG, manufacturing and financial markets. Over 20 advanced analytical algorithms ensure customers are empowered with prescriptive, descriptive and predictive analytics to help them make smarter, more timely decisions.

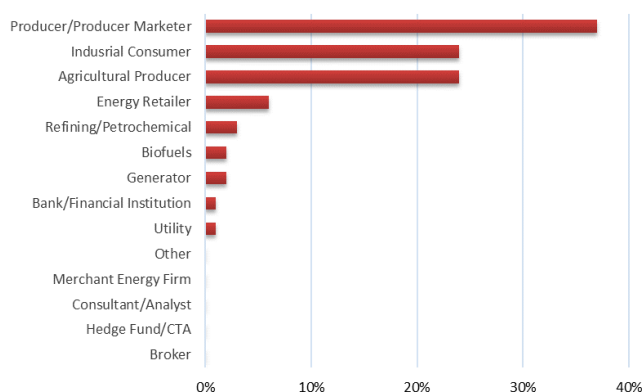
Eka's Business Collaboration application digitally connects production, supply chain and customers, uniting people, information, applications, and processes across the extended commodity value chain. Commodity trading companies can quickly and easily onboard new trading partners, negotiate prices and sign contracts digitally and in real time.

Eka's cloud platform is a unique solution that frees commodity businesses to be more dynamic and efficient. It provides them with the flexibility to meet specific business needs and adapt to new challenges as they arise. The cloud platform is designed to maximize return on investment, as customers can select only the applications required for their specific business needs. The implementation time also sets new benchmarks in the industry – taking just weeks instead of months or years to be fully operational. Furthermore, Eka's platform can be easily expanded with additional applications as required, meaning it can grow with the business and always be in line with changing strategies or new innovations.

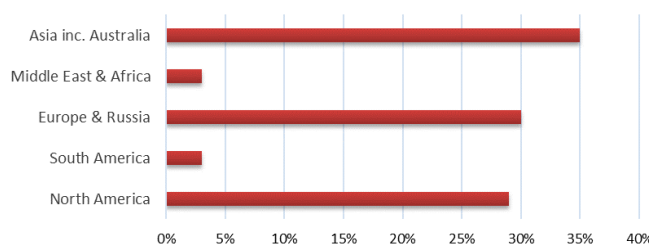
Number of Licensed Client Companies: 105

Representative Clients: Cargill; Rio Tinto; Enmax; Renewable Energy Group; Foremost Farms

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ SaaS: Multi-Tenanted
- ✓ Hosted in Private Cloud
- ✓ Hosted in Public Cloud

Office Locations and Phone:

- ✓ Calgary, Canada 403 237 7740
- ✓ Bangalore, India 91 80 4081 9200
- ✓ Richmond, UK 44 1372 824776
- ✓ Singapore 65 9069 1552
- ✓ Adelaide, Australia 618 8444 5900

Vendor: **Eka Software**Product Name: **Eka CTRM**Version: **10**

		✓ Functionality is deployed and in production at a client site	○ Not Deployed, but system is capable of providing functionality	✗ System is not currently capable of providing that functionality	- Not Applicable - Functionality not applicable for Commodity													
		ENERGIES						AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Frieght Rates
Function / Feature		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concen-trates	Precious	North America	Europe	
Production / Operations	Production Mgmt./Generation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-
	Volumetric Management	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-
	Net Back Pricing	-	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✓	✓	-	✓	✓	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✓	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✓	✓	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-
Front Office / Trading	Quality / Sampling	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-
	Contract Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Deal Origination	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Credit Tracking	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Curve Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Portfolio Optimization	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Supply-Demand Optimization	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Pre-Deal Analytics "what if"	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Trade Capture	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Physical	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Financial	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Exchange	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Deal Types	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Spot & Forwards	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Futures	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Swaps	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Options	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Swaptions	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Transportation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Storage/Inventory	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
Risk Management and Analysis	Complex Pricing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Position Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Physical	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Financial	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Credit Risk	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Hedge Effectiveness	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Analytics	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Mark-to-Market	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	VaR - Monte Carlo	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	VaR - Other	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Greeks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	PaR/EaR	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	CVaR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Portfolio Sensitivity Analysis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Middle Office	Stress Testing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Simulations	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Fair Value Disclosure	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Vessel Frieght Risk	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Insurance	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Inventory Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Scheduling and Logistics	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Power Transmission	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Back Office	Pipeline	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Barge	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Rail	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Truck	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Vessel	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Supply Chain Mgmt./Traceability	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Regulatory Reporting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
System Wide	Settlement	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Actualization	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Invoicing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Settlements/Reconciliation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Taxation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	AR/AP/Ledger (Gen. or Sub)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Currency Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Unit Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Document Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
System Wide	Workflow Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Reporting / Business Intelligence	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Canned Reports	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Ad hoc Reporting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
System Wide	Executive Dashboard	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	BI tools	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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Energy One Limited

L13, 77 Pacific Highway
North Sydney
NSW 2060 Australia
Phone: 61 2 8916 2200

www.energyone.com



Product:
**Energy One
Wholesale Suite**

Energy One Limited is a supplier of software products and services to wholesale energy, environmental and carbon trading markets.

Listed on the Australian Stock Exchange since 2007, but with more than 15 years of market experience, the Energy One Group of Companies has a track record of providing practical solutions to Australasian and European companies operating in the wholesale energy marketplace.

The Australasian business (trading as Energy One Limited) provides a product suite and services for the trading and facilitation of wholesale energy (such as gas and electricity), energy commodities and energy derivatives. This includes functionality for market analytics, the capture and settlement contracts for hedging, trading and risk management purposes as well as a large array of wholesale operations needs such as scheduling, balancing, trading and nominations of electricity (power), gas, pipeline logistics and environmental compliance management.

The Company's suite of solutions is made available via SaaS and private cloud and the technology is utilised to trade approximately 50% of Australia's national energy market by energy generators, retailers, producers, shippers, large scale users and traders to manage their entire wholesale trading portfolio, across multiple markets and geographies.

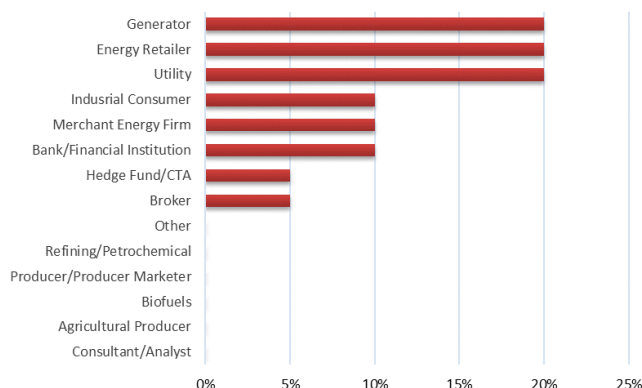
The Energy One group also incorporates Contigo Software Limited; a leading, UK-based ETRM (energy trading and risk management) software provider to UK and EU energy companies. In 2020 the Group was joined by eZ-nergy, a leading supplier of trading and scheduling capability to the European market.

The Energy One Group now has more than 200+ customer installations in 15 countries and is a leading independent global supplier of wholesale energy trading software solutions.

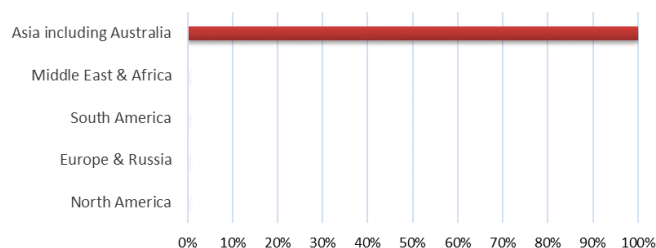
Number of Licensed Client Companies: 70

Representative Clients: AGL; EnergyAustralia; Alinta

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ SaaS: Multi-Tenanted
- ✓ Hosted in Private Cloud
- ✓ On-premises

Office Locations and Phone:

- ✓ Melbourne, Australia 61 2 8916 2200
- ✓ Adelaide, Australia 61 2 8916 2200
- ✓ Brisbane, Australia 61 2 8916 2200

Vendor: **Energy One Limited**Product Name: **Energy One Wholesale Suite**Version: **0**

✔ Functionality is deployed and in production at a client site		🟡 Not Deployed, but system is capable of providing functionality							❌ System is not currently capable of providing that functionality				- Not Applicable - Functionality not applicable for Commodity						
Function / Feature		ENERGIES							AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Freight Rates
		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concen-trates	Precious	North America	Europe		
Production / Operations	Production Mgmt./Generation	❌	🟡	🟡	🟡	🟡	🟡	🟡	❌	❌	❌	❌	❌	❌	❌	-	-	-	-
	Volumetric Management	-	🟡	🟡	🟡	🟡	🟡	🟡	❌	❌	❌	❌	❌	❌	❌	-	-	-	-
	Net Back Pricing	-	🟡	🟡	🟡	🟡	🟡	🟡	-	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	🟡	🟡	-	🟡	🟡	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	🟡	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	🟡	-	-	🟡	-	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	❌	❌	-	❌	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Quality / Sampling	-	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	-	-	-	-
Front Office / Trading	Contract Management	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Deal Origination	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Credit Tracking	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Curve Management	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Portfolio Optimization	🟡	✔	🟡	🟡	🟡	🟡	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Supply-Demand Optimization	✔	🟡	🟡	🟡	🟡	🟡	🟡	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌
	Pre-Deal Analytics "what if"	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Trade Capture																		
	Physical	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Financial	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Exchange	✔	✔	🟡	🟡	🟡	🟡	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Deal Types																		
	Spot & Forwards	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Futures	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Swaps	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Options	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Swaptions	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Transportation	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Storage/Inventory	-	✔	🟡	🟡	🟡	🟡	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	-
	Complex Pricing	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
Position Management																			
Physical	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌	
Financial	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌	
Risk Management and Analysis	Credit Risk	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Hedge Effectiveness	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌
	Analytics																		
	Mark-to-Market	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	VaR - Monte Carlo	✔	🟡	🟡	🟡	🟡	🟡	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	VaR - Other	✔	🟡	🟡	🟡	🟡	🟡	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Greeks	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	PaR/EaR	✔	✔	🟡	🟡	🟡	🟡	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	CVaR	✔	✔	🟡	🟡	🟡	🟡	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Portfolio Sensitivity Analysis	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Stress Testing	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Simulations	✔	✔	🟡	🟡	🟡	🟡	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Fair Value Disclosure	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
Vessel Freight Risk	-	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	
Insurance	-	-	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	
Middle Office	Inventory Management	🟡	🟡	🟡	🟡	🟡	🟡	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Scheduling and Logistics																		
	Power Transmission	✔	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	❌	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	❌	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	🟡	❌	❌	❌	❌	❌	-	-	-	-	-	-	-	-	-	-	-
	Barge	-	-	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	-	-	❌	-
	Rail	-	-	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	-	-	❌	-
	Truck	-	-	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	-	-	❌	-
Vessel	-	-	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	-	-	❌	-	
Supply Chain Mgmt./Traceability	❌	-	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	-	-	❌	-	
Back Office	Regulatory Reporting	🟡	🟡	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Settlement																		
	Actualization	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Invoicing	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Settlements/Reconciliation	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Taxation	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
AR/AP/Ledger (Gen. or Sub)	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌	
System Wide	Currency Conversion	🟡	🟡	✔	🟡	🟡	🟡	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Unit Conversion	🟡	🟡	🟡	🟡	🟡	🟡	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Document Management	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Workflow Management	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Reporting / Business Intelligence																		
	Canned Reports	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Ad hoc Reporting	✔	✔	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
	Executive Dashboard	🟡	🟡	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌
BI tools	🟡	🟡	✔	🟡	🟡	✔	🟡	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	❌	❌	

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Product:
Entrade®

In 2019 ENUIT® was selected as the CTRM vendor of choice for a multi-national, cross commodities trading company. During the planning and implementation phase the client commissioned ENUIT® to build into the core ENTRADE® system the functionality to support their entire business from Front to Back including all aspects related to their Enterprise Resource Planning.

This led to the creation of ENTRADE® Unite, one of the few solutions to incorporate all the aspects of a Commodity Trading Risk Management system and all the aspects of an Enterprise Resource Planning solution directly in its core, in a single platform without cumbersome modules to enable integration and mapping from one system to another.

ENTRADE® Unite has the potential to deliver significant benefits in the form of enhanced visibility, analysis, insights, and decision making for any market participant.

What are the main benefits to users of ENTRADE® Unite?

ENTRADE® CTRM, has already been widely accepted as a leading solution in this space, specifically because it is one of the few systems that has the proven ability to support every commodity, every feature, and every user in one place on one platform.

For the Front office, Deal and trade types can be quickly configured to handle complicated commodity trading transactions whilst automatically decomposing risk according to each deal type's risk profile. Each transaction type is automatically integrated into every part of ENTRADE® – no coding required. Transactions can be immediately valued, settled, scheduled, invoiced, confirmed, taxed, hedged and analyzed.

For the Middle Office, ENTRADE® makes it possible to track everything from inventory volumes, aggregation of costs, value at risk, ancillary costs, the quality of product, and then tie that data to respective counterparties, contracts, and portfolios.

And for the Back Office, ENTRADE® generates invoices and remittance statements including all associated fees and costs. It stores general ledger codes and can generate and post journal entries directly to your General Ledger system.

ENTRADE® Unite creates an integrated solution that can support the supply chain needs of trading organizations, giving companies the opportunity to integrate trading and risk data with supply chain functions.

Functions include:

Capturing and recording deals; Scheduling physical commodity movements; Tracking primary and secondary costs; Monitoring inventory levels and costs; Actualizing deal volumes; Valuating deals; Calculating settlement amounts; Generating invoices; Monitoring business and market risks; Processing management and Providing useful reports and a data warehouse for all aspects of the business

With unparalleled reporting capabilities including:

Volumetric positions; PNL attribution; Inventories; Storage, in-transit, exchanges, processing; estimated and actual volumes and costs; Movement documents; Deal confirmation letters and Contracts; Payables and receivables; Market risk exposure; Mark-to-Market calculations; Option pricing model 'Greeks' and Value at Risk

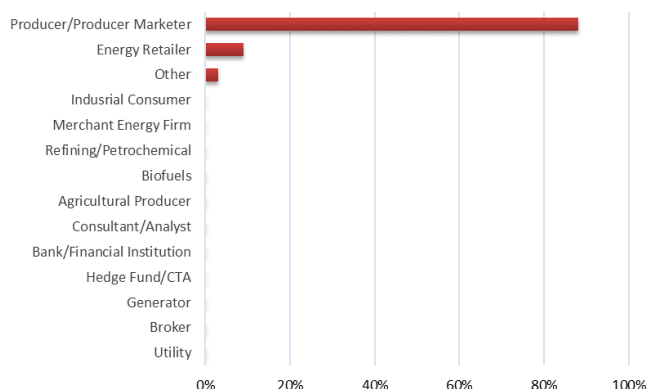
ENTRADE® Unite gives complete end-to-end visibility of the entire value chain:

- Transparency of inventories and their associated costs, market risks and opportunities created by an organization's network of assets
- The ability to drill into data from enterprise commodity transactions, enabling high-quality in-depth analysis and insights
- A unified data source uniting data traditionally found in CTRM systems with data commonly found in ERP solutions.

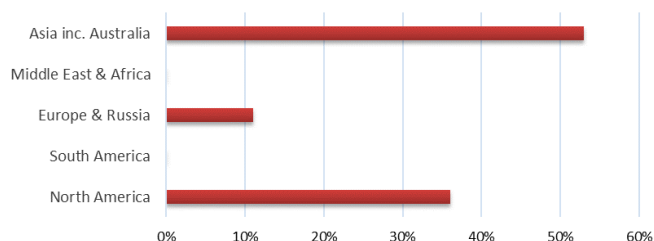
Number of Licensed Client Companies: 33

Representative Clients: Mitsubishi; Mitsui; CNOOC; UET; Texla; Biourja

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ Traditional License
- ✓ SaaS: Multi-Tenanted
- ✓ Hosted in Private Cloud
- ✓ Hosted in Public Cloud

Office Locations and Phone:

- | | |
|------------------|----------------------|
| ✓ London, UK | +44 (0) 7870 264 876 |
| ✓ Beijing, China | +86 189 1020 3018 |
| ✓ Singapore | +65 6970 9635 |
| ✓ Tokyo, Japan | +81 3 5533 8682 |

Vendor: **ENUIT LLC**Product Name: **ENTRADE®**Version: **6**

✔ Functionality is deployed and in production at a client site		🟡 Not Deployed, but system is capable of providing functionality						❌ System is not currently capable of providing that functionality				- Not Applicable - Functionality not applicable for Commodity							
Function / Feature		ENERGIES							AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Freight Rates
		Power	Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concen-trates	Precious	North America	Europe		
Production / Operations	Production Mgmt./Generation	✔	✔	✔	✔	✔	✔	✔	🟡	🟡	🟡	🟡	✔	✔	🟡	-	-	-	-
	Volumetric Management	-	✔	✔	✔	✔	✔	✔	✔	🟡	🟡	🟡	✔	✔	🟡	-	-	-	-
	Net Back Pricing	-	✔	🟡	🟡	🟡	🟡	🟡	-	-	-	-	-	✔	-	-	-	-	-
	DOI/Owner Balancing	-	❌	❌	-	❌	❌	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✔	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✔	-	-	✔	-	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✔	✔	-	✔	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Quality / Sampling	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	🟡	-	-	-	-
Front Office / Trading	Contract Management	✔	✔	✔	✔	✔	✔	✔	✔	🟡	🟡	🟡	✔	✔	🟡	🟡	🟡	✔	🟡
	Deal Origination	✔	✔	✔	✔	✔	✔	✔	✔	🟡	🟡	🟡	✔	✔	🟡	🟡	🟡	✔	🟡
	Credit Tracking	✔	✔	✔	✔	✔	✔	✔	✔	🟡	🟡	🟡	✔	✔	🟡	🟡	🟡	✔	🟡
	Curve Management	✔	✔	✔	✔	✔	✔	✔	✔	🟡	🟡	🟡	✔	✔	🟡	🟡	🟡	✔	🟡
	Portfolio Optimization	✔	✔	✔	✔	✔	✔	✔	✔	🟡	🟡	🟡	✔	✔	🟡	🟡	🟡	✔	🟡
	Supply-Demand Optimization	✔	✔	✔	✔	✔	✔	✔	✔	🟡	🟡	🟡	✔	✔	🟡	🟡	🟡	✔	🟡
	Pre-Deal Analytics "what if"	✔	✔	✔	✔	✔	✔	✔	✔	🟡	🟡	🟡	✔	✔	🟡	🟡	🟡	✔	🟡
	Trade Capture																		
	Physical	✔	✔	✔	✔	✔	✔	✔	✔	🟡	🟡	🟡	✔	✔	🟡	🟡	🟡	✔	🟡
	Financial	✔	✔	✔	✔	✔	✔	✔	✔	🟡	🟡	🟡	✔	✔	🟡	🟡	🟡	✔	🟡
	Exchange	✔	✔	✔	✔	✔	✔	✔	✔	🟡	🟡	🟡	✔	✔	🟡	🟡	🟡	✔	🟡
	Deal Types																		
	Spot & Forwards	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	🟡
	Futures	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	🟡
	Swaps	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	🟡
	Options	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	🟡
	Swaptions	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	🟡
	Transportation	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	🟡
	Storage/Inventory	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
		Complex Pricing	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Position Management																		
	Physical	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Financial	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Risk Management and Analysis	Credit Risk	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Hedge Effectiveness	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Analytics																		
	Mark-to-Market	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	VaR - Monte Carlo	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	VaR - Other	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Greeks	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	PaR/EaR	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡
	CVaR	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌
	Portfolio Sensitivity Analysis	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Stress Testing	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Simulations	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Fair Value Disclosure	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Vessel Freight Risk	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Insurance	-	-	🟡	🟡	🟡	🟡	🟡	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Middle Office	Inventory Management	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Scheduling and Logistics																		
	Power Transmission	🟡	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	🟡	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	🟡	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✔	✔	✔	✔	✔	✔	-	-	-	-	-	-	-	-	-	-	-
	Barge	-	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	-	✔	-
	Rail	-	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	-	✔	-
	Truck	-	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	-	✔	-
	Vessel	-	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	-	✔	-	
	Supply Chain Mgmt./Traceability	❌	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	-	✔	-	
Back Office	Regulatory Reporting	❌	✔	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌
	Settlement																		
	Actualization	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Invoicing	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Settlements/Reconciliation	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Taxation	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	AR/AP/Ledger (Gen. or Sub)	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	
System Wide	Currency Conversion	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Unit Conversion	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Document Management	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Workflow Management	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Reporting / Business Intelligence																		
	Canned Reports	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Ad hoc Reporting	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Executive Dashboard	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	BI tools	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	

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eZ-nergy

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75020 Paris
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Phone: 00331 84 17 85 49

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Product:
eZ-Ops

eZ-nergy offers solutions to make energy trading easy. European energy markets participants use eZ-Ops solution and our 24/7 service layer to handle fully automated day-ahead and intraday operations. eZ-nergy is now part of Energy One Ltd group with its sister company Contigo Software.

eZ-Ops

eZ-Ops is a web solution offered as a service (SAAS). No hardware required.

Key functionalities are:

- physical position management
- nomination and scheduling for power and gas European operators (TSOs, VTPs, SSOs)
- day-ahead automated trading (EPEXSpot, NordPool)
- algorithmic intraday trading (EPEXSpot, NordPool)
- power production assets scheduling
- REMIT reporting (via eZ-nergy RRM entity)

Hosting and maintenance are provided by eZ-nergy. Every modification implemented by operators (TSOs, VTPs, SSOs, Exchanges) are handled by eZ-nergy. Market participants focus on their strategy, not on the communications or IT tools.

eZ-nergy also offers a full REST API that enables straightforward and full integration of position management, nomination and scheduling, automated and algorithmic trading with any third-party tools.

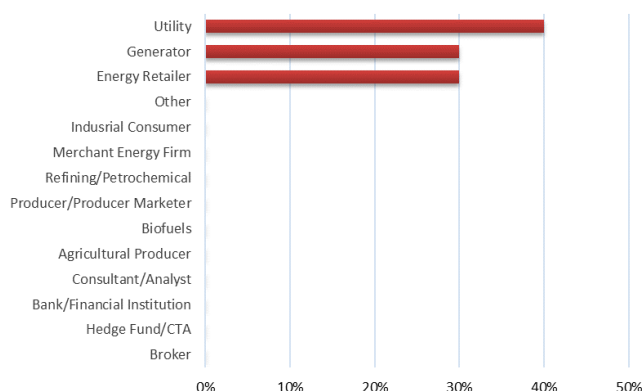
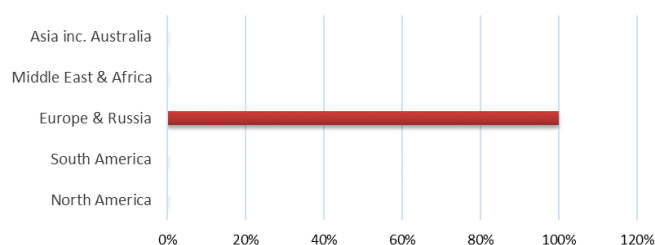
eZ-Ops offers high availability, redundant and secured infrastructure

24/7 energy trading service

As additional service, eZ-nergy trading and scheduling team acts 24/7 on behalf of customers as a neutral and independent entity. Operation periods are flexible (24/7, out of office hours, weekends...). eZ-nergy team balances portfolios on energy markets (OTC, exchanges), handles nomination and matching processes and dispatches power production and demand responses assets on behalf of customers.

Number of Licensed Client Companies: 40

Representative Clients: Total Gas & Power; MFT Energy; Enercity AG; Statkraft Energy Markets; In Commodities; ENI Gas & Power

Customer Distribution by Type**Customer Distribution by Geography****Delivery Methods:**

- ✓ SaaS: Multi-Tenanted

Office Locations and Phone:

- ✓ Paris, France 00331 84 17 85 49

Vendor: **eZ-nergy**Product Name: **eZ-Ops**Version: **2**

		✓ Functionality is deployed and in production at a client site	● Not Deployed, but system is capable of providing functionality	✗ System is not currently capable of providing that functionality	- Not Applicable - Functionality not applicable for Commodity													
		ENERGIES						AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Frieght Rates
Function / Feature		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concen-trates	Precious	North America	Europe	
Production / Operations	Production Mgmt./Generation	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Volumetric Management	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Net Back Pricing	-	✗	✗	✗	✗	✗	✗	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✗	✗	-	✗	✗	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✗	-	-	✗	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✗	✗	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-
	Quality / Sampling	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
Front Office / Trading	Contract Management	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Deal Origination	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Credit Tracking	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Curve Management	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Portfolio Optimization	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Supply-Demand Optimization	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Pre-Deal Analytics "what if"	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Trade Capture																	
	Physical	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Financial	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Exchange	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Deal Types																	
	Spot & Forwards	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Futures	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Swaps	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Options	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Swaptions	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Transportation	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Storage/Inventory	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-
	Complex Pricing	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Position Management																	
Risk Management and Analysis	Physical	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Financial	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Credit Risk	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Hedge Effectiveness	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Analytics																	
	Mark-to-Market	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	VaR - Monte Carlo	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	VaR - Other	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Greeks	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	PaR/EaR	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	CVaR	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Portfolio Sensitivity Analysis	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Stress Testing	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Simulations	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Fair Value Disclosure	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Middle Office	Vessel Frieght Risk	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Insurance	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Inventory Management	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Scheduling and Logistics																	
	Power Transmission	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
Back Office	Barge	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Rail	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Truck	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Vessel	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Supply Chain Mgmt./Traceability	✗	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Regulatory Reporting	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Settlement																	
System Wide	Actualization	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Invoicing	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Settlements/Reconciliation	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Taxation	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	AR/AP/Ledger (Gen. or Sub)	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Currency Conversion	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Unit Conversion	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Document Management	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Workflow Management	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Reporting / Business Intelligence																	
	Canned Reports	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Ad hoc Reporting	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Executive Dashboard	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	BI tools	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗

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Product:
Fusion CTRM

Fendahl is a specialist provider CTRM (commodity trading & risk management) software solutions to commodity trading organizations. A rapidly growing global software company we have a dedicated team of over 130 staff with offices in the Americas, Asia, and EMEA, serving an ever-growing global client base across multiple commodity segments. Fendahl offices are located in the London, UK; Houston, USA; Dubai, UAE and Nagpur, India.

Fendahl's Fusion CTRM solution is leading the next generation of CTRM solutions, setting new standards for; ease of use, flexible functionality, end user performance, scalability, reliability, and provides the lowest cost of ownership in the industry.

The Fusion solution is designed to be an enterprise solution covering needs of front, middle, and back office. Fusion supports the entire lifecycle of a financial or physical commodity transaction, from deal execution through to cash settlement.

Fusion is the only CTRM solution that delivers; CTRM functionality, market data management, and advanced business intelligence functionality within a single integrated modular software platform. Fusion's advanced workflow manager, document controller, risk management tools, credit controller and reporting tools all combine to allow you to automate more business processes, keep an eye on secondary costs, see P&L in real time and much more.

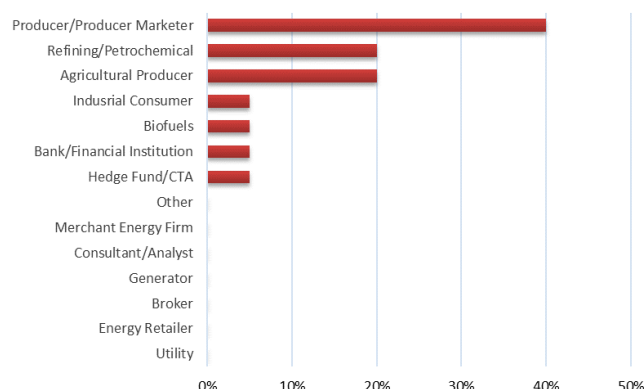
Fendahl offers customers flexible deployment and licencing options. Fusion CTRM can be deployed on the cloud, as a hosted solution or as a traditional in house solution. Fusion's flexible design and modern build techniques allows for rapid deployment and single roll-out upgrades. Fendahl offers two licencing models perpetual licencing and SaaS licencing depending on the customers requirements.

Our customers produce, refine, market, ship and trade globally. They rely on Fendahl's expertise in these key physical and financial markets: Oil, Gas, Petrochemicals, Metals and Mining, Coal, Road & Marine Fuels, Biofuels, and Agriculture/Softs..

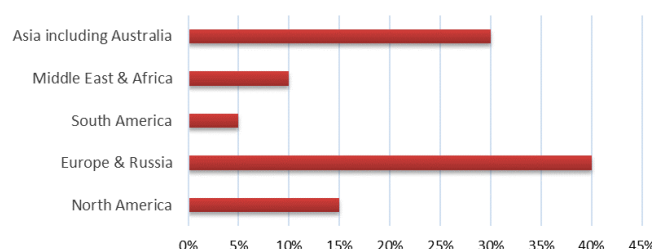
Number of Licensed Client Companies: 43

Representative Clients: Seaboard Corporation; IKON Petroleum; Bluequest Resources; South 32; BW LPG; Largo Resources

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ Traditional License
- ✓ SaaS: Multi-Tenanted
- ✓ Hosted in Private Cloud
- ✓ Hosted in Public Cloud

Office Locations and Phone:

- ✓ United Kingdom +44 (0) 203 503 0580
- ✓ United States
- ✓ Dubai, Headquarters

Vendor: **Fendahl**Product Name: **Fusion CTRM**Version: **N/A**

✔ Functionality is deployed and in production at a client site			🟡 Not Deployed, but system is capable of providing functionality					✖ System is not currently capable of providing that functionality				- Not Applicable - Functionality not applicable for Commodity							
Function / Feature		ENERGIES						AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Freight Rates	
		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concen- trates	Precious	North America			Europe
Production / Operations	Production Mgmt./Generation	✖	✖	🟡	🟡	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	-	-	-	-
	Volumetric Management	-	🟡	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	-	-	-	-
	Net Back Pricing	-	🟡	✔	✔	🟡	✔	🟡	-	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	🟡	✖	-	✖	✔	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	🟡	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	🟡	-	-	✖	-	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✖	🟡	-	🟡	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Quality / Sampling	-	✖	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	-	-	-	-	
Front Office / Trading	Contract Management	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	✔
	Deal Origination	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	✖
	Credit Tracking	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	✔
	Curve Management	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	✔
	Portfolio Optimization	✖	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Supply-Demand Optimization	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Pre-Deal Analytics "what if"	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	✔
	Trade Capture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Physical	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	✔
	Financial	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	✔
	Exchange	✖	🟡	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	✔
	Deal Types	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Spot & Forwards	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	✔
	Futures	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	✔
	Swaps	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	✔
	Options	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	✔
	Swaptions	✖	✖	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡
	Transportation	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	✔
	Storage/Inventory	-	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	-
	Complex Pricing	✖	🟡	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	✔
Position Management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Physical	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	
Financial	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	
Risk Management and Analysis	Credit Risk	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	✔
	Hedge Effectiveness	✖	✔	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡
	Analytics	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Mark-to-Market	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	✔
	VaR - Monte Carlo	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	✔
	VaR - Other	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	✔
	Greeks	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	✔
	PaR/EaR	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	CVaR	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Portfolio Sensitivity Analysis	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	🟡
	Stress Testing	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	🟡
	Simulations	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	🟡
	Fair Value Disclosure	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	🟡
	Vessel Freight Risk	-	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	✔
Insurance	-	-	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	
Middle Office	Inventory Management	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	✔
	Scheduling and Logistics	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Power Transmission	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✔	🟡	🟡	🟡	-	-	-	-	-	-	-	-	-	-	-	-	-
	Barge	-	-	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	-	-	✔	-
	Rail	-	-	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	✔	✔	✔	✔	-	-	✔	-
	Truck	-	-	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	-	-	✔	-
	Vessel	-	-	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	-	-	✔	-
Supply Chain Mgmt./Traceability	✖	-	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	✔	✔	✔	✔	-	-	✔	-	
Back Office	Regulatory Reporting	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	🟡
	Settlement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Actualization	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	🟡
	Invoicing	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	🟡
	Settlements/Reconciliation	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	🟡
	Taxation	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	🟡
System Wide	AR/AP/Ledger (Gen. or Sub)	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	🟡
	Currency Conversion	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	🟡
	Unit Conversion	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	🟡
	Document Management	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	🟡
	Workflow Management	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	🟡
	Reporting / Business Intelligence	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Canned Reports	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	✔
	Ad hoc Reporting	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	✔
	Executive Dashboard	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	✔
BI tools	✖	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	✔	✔	✔	✔	🟡	🟡	✔	✔	

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FUSION

THE NEXT GENERATION
OF CTRM SOFTWARE





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 Fendahl Technology

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Product:
Aligne

FIS is a global leader in technology, solutions and services for merchants, banks and capital markets that helps businesses and communities thrive by advancing commerce and the financial world. For over 50 years, FIS has continued to drive growth for clients around the world by creating tomorrow's technology, solutions and services to modernize today's businesses and customer experiences. By connecting merchants, banks and capital markets, energy and commodity markets we use our scale, apply our deep expertise and data-driven insights, innovate with purpose to solve for our clients' future, and deliver experiences that are more simple, seamless and secure to advance the way the world pays, banks, trade and invests.

Key areas of growth include digital, data analytics, and cybersecurity, modernization, and innovation strategy.

FIS strategy is guided by modern design principles of client-centric, platform-oriented, and continuous improvement drive the way we develop solutions, enable, and deploy technology, and ultimately, support our clients. Creating open APIs and component-based solutions allows FIS to build capabilities once and leverage across many solutions – including both FIS and third-party technology – which drives speed-to-market for clients and allows them to take advantage of the most modern solutions and tools at any time. FIS is focused on delivering cloud-native solutions, that are secure, scalable, and available on-demand and driving rapid and seamless integration across solutions, unifying user interfaces and client experiences, deepening end-to-end processing and modernizing client support.

FIS' growth strategy for the Energy & Commodities solutions include 3 main parts. (I) Solution vs. product approach: FIS tailors solutions, depending on the segment and the relevant business processes of the client, with a set of best-in-class FIS products. (II) FIS is covering every need around energy and commodities trading: we support an extended deal lifecycle starting from market data and pre-trade analytics to the entire trading value chain (front-to-back) up to the logistics management for various commodities, as well as integrating and providing financial systems such as treasury among others and (III) FIS provides offerings tailored to client size, business model and organizational structure: various licensing models (e.g. upfront, term, subscriber, SaaS) as well as different deployment options (e.g. on-premise, public and private cloud). We also offer BPO/BPaaS to optimize the TCO for our clients.

Aligne is a highly configurable, flexible and modular multi-commodity solution that integrates physical and financial trading, risk and operational control with credit, fuels procurement, power and gas logistics, emissions, back office, treasury and finance and advanced analytics. Aligne is the flagship product for Energy businesses.

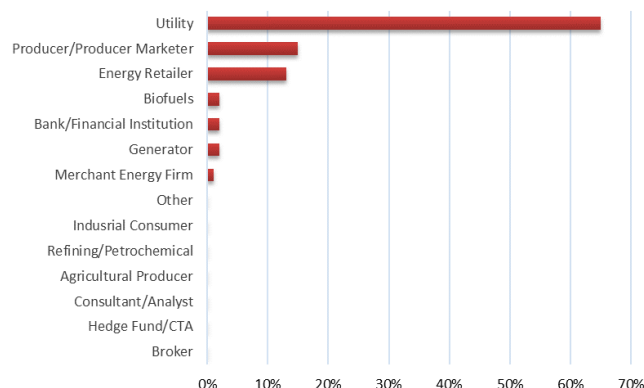
Key Features:

- Enable trading for energy commodities, weather, emissions, heat, freight, metals, FX and derivatives
- Meet current and future regulatory requirements, such as those imposed by Dodd-Frank and related European* actions (requires an ad-on XDM module)
- Perform straight-through processing from deal capture to risk management and back office
- Manage A/R, A/P and all economic aspects of a deal including brokerage/third-party fees
- Support power, gas and coal logistics

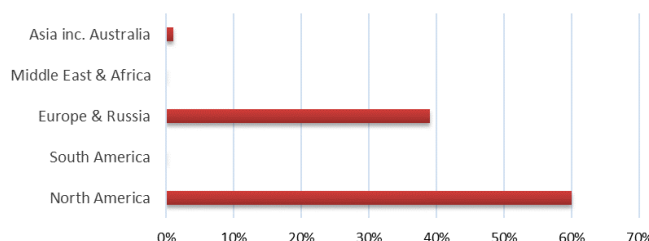
Number of Licensed Client Companies: 75

Representative Clients: Avangrid Renewables; Eneco; EDF, UK; EDF Lumius; MVV

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ Traditional License
- ✓ Hosted in Private Cloud
- ✓ Hosted in Public Cloud
- ✓ Hybrid Cloud (Public cloud w/ FIS security & automation layer)

Office Locations and Phone:

- ✓ Houston TX, USA
- ✓ Pune, India
- ✓ Belgrade, Serbia
- ✓ Frankfurt, Germany
- ✓ London, UK

Vendor: **FIS**Product Name: **Aligne**Version: **2020.1**

✔ Functionality is deployed and in production at a client site		🟡 Not Deployed, but system is capable of providing functionality						❌ System is not currently capable of providing that functionality				- Not Applicable - Functionality not applicable for Commodity							
Function / Feature		ENERGIES							AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Freight Rates
		Power	Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concen-trates	Precious	North America	Europe		
Production / Operations	Production Mgmt./Generation	✔	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	-	-	-	-
	Volumetric Management	-	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	-	-	-	-
	Net Back Pricing	-	🟡	❌	❌	❌	❌	🟡	-	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	❌	❌	-	❌	❌	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✔	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	❌	-	-	❌	-	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✔	✔	-	❌	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Quality / Sampling	-	✔	🟡	🟡	🟡	✔	🟡	✔	❌	❌	❌	❌	❌	❌	-	-	-	-
Front Office / Trading	Contract Management	✔	✔	✔	✔	✔	✔	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	❌	❌
	Deal Origination	✔	✔	✔	✔	✔	✔	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	❌	❌
	Credit Tracking	✔	✔	✔	✔	✔	✔	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	❌	❌
	Curve Management	✔	✔	✔	✔	✔	✔	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	❌	❌
	Portfolio Optimization	✔	✔	✔	✔	✔	✔	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	❌	❌
	Supply-Demand Optimization	✔	✔	✔	✔	✔	✔	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	❌	❌
	Pre-Deal Analytics "what if"	✔	✔	✔	✔	✔	✔	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	❌	❌
	Trade Capture																		
	Physical	✔	✔	✔	✔	✔	✔	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	❌	❌
	Financial	✔	✔	✔	✔	✔	✔	🟡	✔	✔	✔	✔	✔	✔	✔	✔	✔	❌	❌
	Exchange	✔	✔	✔	✔	✔	✔	🟡	✔	✔	✔	✔	✔	✔	✔	✔	✔	❌	❌
	Deal Types																		
	Spot & Forwards	✔	✔	✔	✔	✔	✔	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	❌	❌
	Futures	✔	✔	✔	✔	✔	✔	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	❌	❌
	Swaps	✔	✔	✔	✔	✔	✔	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	❌	❌
	Options	✔	✔	✔	✔	✔	✔	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	❌	❌
	Swaptions	✔	✔	✔	✔	✔	✔	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	❌	❌
	Transportation	✔	✔	✔	✔	✔	✔	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	❌	❌
	Storage/Inventory	-	✔	✔	✔	✔	✔	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	❌	-
	Complex Pricing	✔	✔	✔	✔	✔	✔	🟡	✔	✔	✔	✔	✔	✔	✔	✔	✔	❌	❌
Position Management																			
Physical	✔	✔	✔	✔	✔	✔	🟡	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	❌	❌
Financial	✔	✔	✔	✔	✔	✔	🟡	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	❌	❌
Risk Management and Analysis	Credit Risk	✔	✔	✔	✔	✔	✔	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	❌	❌
	Hedge Effectiveness	✔	✔	✔	✔	✔	✔	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	❌	❌
	Analytics																		
	Mark-to-Market	✔	✔	✔	✔	✔	✔	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	❌	❌
	VaR - Monte Carlo	✔	✔	✔	✔	✔	✔	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	❌	❌
	VaR - Other	✔	✔	✔	✔	✔	✔	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	❌	❌
	Greeks	✔	✔	✔	✔	✔	✔	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	❌	❌
	PaR/EaR	✔	✔	✔	✔	✔	✔	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	❌	❌
	CVaR	✔	✔	✔	✔	✔	✔	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	❌	❌
	Portfolio Sensitivity Analysis	✔	✔	✔	✔	✔	✔	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	❌	❌
	Stress Testing	✔	✔	✔	✔	✔	✔	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	❌	❌
	Simulations	✔	✔	✔	✔	✔	✔	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	❌	❌
	Fair Value Disclosure	🟡	✔	✔	✔	✔	✔	🟡	✔	🟡	🟡	🟡	🟡	🟡	🟡	✔	✔	❌	❌
Vessel Freight Risk	-	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	
Insurance	-	-	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	
Middle Office	Inventory Management	🟡	✔	❌	❌	❌	✔	🟡	❌	❌	❌	❌	❌	❌	❌	✔	✔	❌	❌
	Scheduling and Logistics																		
	Power Transmission	✔	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✔	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✔																	
	Pipeline	-	✔	❌	❌	❌	-	-	-	-	-	-	-	-	-	-	-	-	-
	Barge	-	-	🟡	🟡	🟡	✔	🟡	✔	❌	❌	❌	❌	❌	❌	-	-	❌	-
	Rail	-	-	🟡	🟡	🟡	✔	🟡	✔	❌	❌	❌	❌	❌	❌	-	-	❌	-
	Truck	-	-	🟡	🟡	🟡	✔	🟡	✔	❌	❌	❌	❌	❌	❌	-	-	❌	-
Vessel	-	-	🟡	🟡	🟡	✔	🟡	✔	❌	❌	❌	❌	❌	❌	-	-	❌	-	
Supply Chain Mgmt./Traceability	✔	-	🟡	🟡	🟡	✔	🟡	✔	❌	❌	❌	❌	❌	❌	-	-	❌	-	
Back Office	Regulatory Reporting	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Settlement																		
	Actualization	✔	✔	🟡	🟡	🟡	✔	✔	✔	❌	❌	❌	❌	❌	❌	✔	✔	❌	❌
	Invoicing	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	❌	❌
	Settlements/Reconciliation	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	❌	❌
	Taxation	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	❌	❌
AR/AP/Ledger (Gen. or Sub)	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	❌	❌	
System Wide	Currency Conversion	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Unit Conversion	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Document Management	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Workflow Management	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Reporting / Business Intelligence																		
	Canned Reports	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Ad hoc Reporting	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Executive Dashboard	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
BI tools	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	

FIS

1 New York Plaza
New York City, NY

Phone: 1 646 445 1000

www.fisglobal.com



Product:
**Kiodex Risk Workbench,
Kiodex Real Time**

FIS is a global leader in technology, solutions and services for merchants, banks and capital markets that helps businesses and communities thrive by advancing commerce and the financial world. For over 50 years, FIS has continued to drive growth for clients around the world by creating tomorrow's technology, solutions and services to modernize today's businesses and customer experiences. By connecting merchants, banks and capital markets, energy and commodity markets we use our scale, apply our deep expertise and data-driven insights, innovate with purpose to solve for our clients' future, and deliver experiences that are more simple, seamless and secure to advance the way the world pays, banks, trade and invests.

Key areas of growth include digital, data analytics, and cybersecurity, modernization, and innovation strategy.

FIS strategy is guided by modern design principles of client-centric, platform-oriented, and continuous improvement drive the way we develop solutions, enable, and deploy technology, and ultimately, support our clients. Creating open APIs and component-based solutions allows FIS to build capabilities once and leverage across many solutions – including both FIS and third-party technology – which drives speed-to-market for clients and allows them to take advantage of the most modern solutions and tools at any time. FIS is focused on delivering cloud-native solutions, that are secure, scalable, and available on-demand and driving rapid and seamless integration across solutions, unifying user interfaces and client experiences, deepening end-to-end processing and modernizing client support.

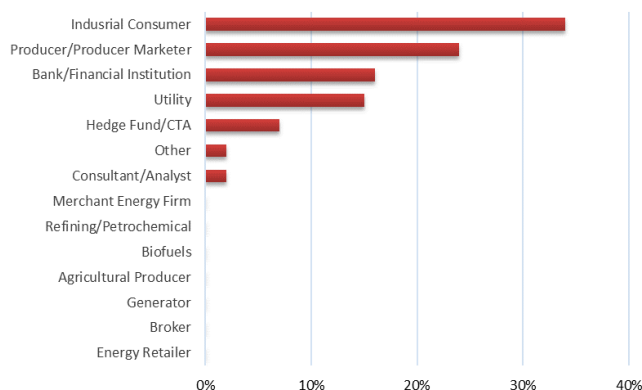
FIS' growth strategy for the Energy & Commodities solutions include 3 main parts. (I) Solution vs. product approach: FIS tailors solutions, depending on the segment and the relevant business processes of the client, with a set of best-in-class FIS products, (II) FIS is covering every need around energy and commodities trading: we support an extended deal lifecycle starting from market data and pre-trade analytics to the entire trading value chain (front-to-back) up to the logistics management for various commodities, as well as integrating and providing financial systems such as treasury among others and (III) FIS provides offerings tailored to client size, business model and organizational structure: various licensing models (e.g. upfront, term, subscriber, SaaS) as well as different deployment options (e.g. on-premise, public and private cloud). We also offer BPO/BPaaS to optimize the TCO for our clients.

Kiodex is a multi-commodity, multi-currency trading, risk management and compliance management system deployed as a multi-tenant, SaaS depolyed solution. It is a complete solution that provides real time trade capture; fully integrated market data; fully configurable suite of reports; fully integrated, commodity specific pricing models; and fully integrated hedge accounting functionality. In addition, the solution offers real time position keeping, account valuation, P&L, and initial margin calculations, and provides compliance based alerts on those metrics, such as exchange or MIFID position limits. Institutions are using Kiodex in use cases including, but not limited to: Tracking hedge coverage of forecast consumption of physical raw materials, and hedge performance; monitoring trading desk P&L, and counterparty credit exposure; and ensuring firms remain compliant with commodity trading regulations.

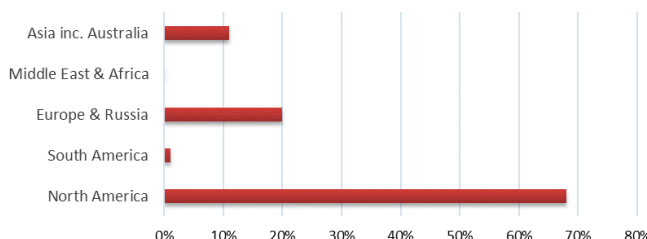
Number of Licensed Client Companies: 95

Representative Clients: *Information not provided*

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ SaaS: Multi-Tenanted

Office Locations and Phone:

- ✓ London, UK +44 (0) 208 081 2000
- ✓ Singapore +65 6308 8000
- ✓ Houston, TX

Vendor: **FIS**Product Name: **Kiodex Risk Workbench, Kiodex Real Time**Version: **2020 Q2-1**

		Functionality is deployed and in production at a client site						Not Deployed, but system is capable of providing functionality				System is not currently capable of providing that functionality				Not Applicable - Functionality not applicable for Commodity			
Function / Feature		ENERGIES							AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Freight Rates
		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concentrates	Precious	North America	Europe		
Production / Operations	Production Mgmt./Generation	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-	-
	Volumetric Management	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-	-
	Net Back Pricing	-	✗	✗	✗	✗	✗	✗	-	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✗	✗	-	✗	✗	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✗	-	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✗	✗	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Front Office / Trading	Quality / Sampling	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-	-
	Contract Management	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Deal Origination	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Credit Tracking	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Curve Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Portfolio Optimization	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Supply-Demand Optimization	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Pre-Deal Analytics "what if"	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓
	Trade Capture																		
	Physical	✗	✗	●	●	●	●	●	●	✓	✓	✓	✓	●	✓	✗	✗	✓	✗
	Financial	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓
	Exchange	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓
	Deal Types																		
	Spot & Forwards	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓
	Futures	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓
	Swaps	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓
	Options	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓	●	✓	●	●	✓	✓
	Swaptions	●	●	●	●	●	●	●	●	●	●	●	●	●	●	✗	✗	●	●
	Transportation	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Storage/Inventory	-	✗	✗	✗	✗	✗	✗	●	✓	✓	✓	✓	✓	✓	✗	✗	●	-
	Complex Pricing	✗	✗	●	●	●	●	●	●	✓	✓	✓	✓	●	✓	✗	✗	●	✗
	Position Management																		
	Physical	✗	✗	●	●	●	●	●	✓	✓	✓	✓	✓	●	✓	✗	✗	✓	✗
	Financial	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓
Risk Management and Analysis	Credit Risk	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓
	Hedge Effectiveness	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓
	Analytics																		
	Mark-to-Market	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓
	VaR - Monte Carlo	●	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓
	VaR - Other	●	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓
	Greeks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	PaR/EaR	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	CVaR	●	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓
	Portfolio Sensitivity Analysis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓
	Stress Testing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓
	Simulations	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓
	Fair Value Disclosure	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓
	Vessel Freight Risk	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Middle Office	Insurance	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Inventory Management	✗	✗	●	●	●	●	●	●	✓	✓	✓	✓	●	✓	✗	✗	✓	✗
	Scheduling and Logistics																		
	Power Transmission	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗	-
	Barge	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗	-
	Rail	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗	-
Back Office	Truck	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗	-
	Vessel	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗	-
	Supply Chain Mgmt./Traceability	✗	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗	-
	Regulatory Reporting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓
	Settlement																		
	Actualization	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓
	Invoicing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓
System Wide	Settlements/Reconciliation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓
	Taxation	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	AR/AP/Ledger (Gen. or Sub)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓
	Currency Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓
	Unit Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓
	Document Management	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Workflow Management	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Reporting / Business Intelligence	Reporting / Business Intelligence																		
	Canned Reports	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓
	Ad hoc Reporting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓
	Executive Dashboard	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
BI tools	BI tools	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗

FIS

Headquarters -
Jacksonville, Florida
USA
Phone: 1 877 776 3706

www.fisglobal.com



Product:
XDM

FIS is a global leader in technology, solutions and services for merchants, banks and capital markets that helps businesses and communities thrive by advancing commerce and the financial world. For over 50 years, FIS has continued to drive growth for clients around the world by creating tomorrow's technology, solutions and services to modernize today's businesses and customer experiences. By connecting merchants, banks and capital markets, energy and commodity markets we use our scale, apply our deep expertise and data-driven insights, innovate with purpose to solve for our clients' future, and deliver experiences that are more simple, seamless and secure to advance the way the world pays, banks, trade and invests.

Key areas of growth include digital, data analytics, and cybersecurity, modernization and innovation strategy.

FIS strategy is guided by modern design principles of client-centric, platform-oriented, and continuous improvement drive the way we develop solutions, enable, and deploy technology, and ultimately, support our clients. Creating open APIs and component-based solutions allows FIS to build capabilities once and leverage across many solutions – including both FIS and third-party technology – which drives speed-to-market for clients and allows them to take advantage of the most modern solutions and tools at any time. FIS is focused on delivering cloud-native solutions, that are secure, scalable, and available on-demand and driving rapid and seamless integration across solutions, unifying user interfaces and client experiences, deepening end-to-end processing and modernizing client support.

FIS' growth strategy for the Energy & Commodities solutions include 3 main parts. (I) Solution vs. product approach: FIS tailors solutions, depending on the segment and the relevant business processes of the client, with a set of best-in-class FIS products, (II) FIS is covering every need around energy and commodities trading: we support an extended deal lifecycle starting from market data and pre-trade analytics to the entire trading value chain (front-to-back) up to the logistics management for various commodities, as well as integrating and providing financial systems such as treasury among others and (III) FIS provides offerings tailored to client size, business model and organizational structure: various licensing models (e.g. upfront, term, subscriber, SaaS) as well as different deployment options (e.g. on-premise, public and private cloud). We also offer BPO/BPaaS to optimize the TCO for our clients.

XDM - very flexible product for energy portfolio management for mid and small companies with strong focus on physical portfolio management, optimization as well as scheduling of gas and power for European markets. XDM covers portfolio management for power, gas and emissions including scheduling for power and gas, while providing a stand-alone compliance solution for EMIR and REMIT. XDM provides stand alone or integrated modules for forecasting and optimization. Since 2020 FIS is offering a standardized version of XDM as SaaS, which is multitenant cloud-based solution including basic functionalities with possibilities to extend the scope.

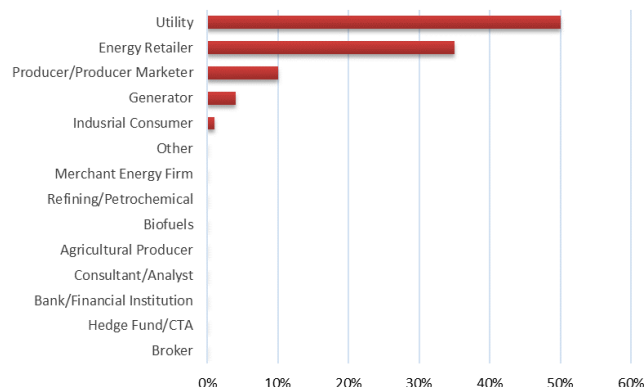
Key Features:

- Gain insights and enhance portfolio analysis with technology that centralizes weather, economics, calendar, and more with optimization, balancing, and scheduling
- Customize and execute more meaningful planning strategies with scenario-based analysis technology that leverages transactional data such as contracts, allocations, transport capacities and price quotations
- More easily execute complex price structuring policies and automate the communication of the resulting prices to stakeholders.

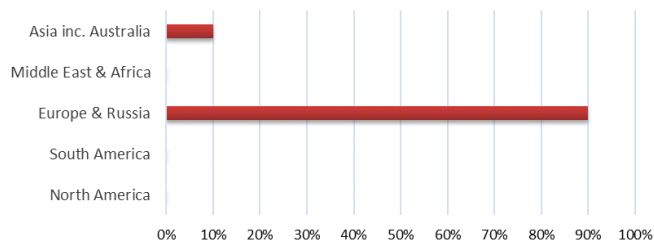
Number of Licensed Client Companies: 13

Representative Clients: Gasterra; OpenEP; Tonik

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ Traditional License
- ✓ SaaS: Multi-Tenanted
- ✓ Hosted in Private Cloud
- ✓ Hosted in Public Cloud
- ✓ Hybrid Cloud (Public cloud w/ FIS security & automation layer)

Office Locations and Phone:

- ✓ Milan, Italy
- ✓ Pune, India
- ✓ London, UK

Vendor: **FIS**Product Name: **XDM**Version: **2020.1**

		✓ Functionality is deployed and in production at a client site	● Not Deployed, but system is capable of providing functionality	✗ System is not currently capable of providing that functionality	- Not Applicable - Functionality not applicable for Commodity													
		ENERGIES						AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Frieght Rates
Function / Feature		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concen-trates	Precious	North America	Europe	
Production / Operations	Production Mgmt./Generation	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Volumetric Management	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Net Back Pricing	-	✗	✗	✗	✗	✗	✗	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✗	✗	-	✗	✗	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✗	-	-	✗	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✓	✓	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-
Front Office / Trading	Quality / Sampling	-	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Contract Management	✓	✓	✗	✗	✗	✗	✗	●	✗	✗	✗	✗	✗	✗	●	✓	✗
	Deal Origination	✓	✓	✗	✗	✗	✗	✗	●	✗	✗	✗	✗	✗	✗	●	✓	✗
	Credit Tracking	✓	✓	✗	✗	✗	✗	✗	●	✗	✗	✗	✗	✗	✗	●	✓	✗
	Curve Management	✓	✓	✗	✗	✗	✗	✗	●	✗	✗	✗	✗	✗	✗	●	✓	✗
	Portfolio Optimization	✓	✓	✗	✗	✗	✗	✗	●	✗	✗	✗	✗	✗	✗	●	✓	✗
	Supply-Demand Optimization	✓	✓	✗	✗	✗	✗	✗	●	✗	✗	✗	✗	✗	✗	●	✓	✗
	Pre-Deal Analytics "what if"	✓	✓	✗	✗	✗	✗	✗	●	✗	✗	✗	✗	✗	✗	●	✓	✗
	Trade Capture																	
	Physical	✓	✓	✗	✗	✗	✗	✗	●	✗	✗	✗	✗	✗	✗	●	✓	✗
	Financial	✓	✓	✗	✗	✗	✗	✗	●	✗	✗	✗	✗	✗	✗	●	✓	✗
	Exchange	✓	✓	✗	✗	✗	✗	✗	●	✗	✗	✗	✗	✗	✗	●	✓	✗
	Deal Types																	
	Spot & Forwards	✓	✓	✗	✗	✗	✗	✗	●	✗	✗	✗	✗	✗	✗	●	✓	✗
	Futures	✓	✓	✗	✗	✗	✗	✗	●	✗	✗	✗	✗	✗	✗	●	✓	✗
	Swaps	✓	✓	●	●	●	●	●	●	✗	✗	✗	✗	✗	✗	●	✓	✗
	Options	✓	●	●	●	●	●	●	●	✗	✗	✗	✗	✗	✗	●	✓	✗
	Swaptions	✗	✗	✗	✗	✗	✗	✗	●	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Transportation	✓	✓	✗	✗	✗	✗	✗	●	✗	✗	✗	✗	✗	✗	●	✓	✗
	Storage/Inventory	-	✓	●	●	●	●	●	●	✗	✗	✗	✗	✗	✗	●	✓	-
	Complex Pricing	✓	✓	●	●	●	●	●	●	✗	✗	✗	✗	✗	✗	●	✓	✗
	Position Management																	
Risk Management and Analysis	Physical	✓	✓	●	●	●	●	●	●	✗	✗	✗	✗	✗	✗	●	✓	✗
	Financial	✓	✓	●	●	●	●	●	●	✗	✗	✗	✗	✗	✗	●	✓	✗
	Credit Risk	✓	✓	●	●	●	●	●	●	✗	✗	✗	✗	✗	✗	●	✓	✗
	Hedge Effectiveness	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Analytics																	
	Mark-to-Market	✓	✓	●	●	●	●	●	●	✗	✗	✗	✗	✗	✗	●	✓	✗
	VaR - Monte Carlo	✓	✓	●	●	●	●	●	●	✗	✗	✗	✗	✗	✗	●	✓	✗
	VaR - Other	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Greeks	✓	✓	●	●	●	●	●	●	✗	✗	✗	✗	✗	✗	●	✓	✗
	PaR/EaR	✓	✓	●	●	●	●	●	●	✗	✗	✗	✗	✗	✗	●	✓	✗
	CVaR	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Portfolio Sensitivity Analysis	✓	✓	●	●	●	●	●	●	✗	✗	✗	✗	✗	✗	●	✓	✗
	Stress Testing	✓	✓	●	●	●	●	●	●	✗	✗	✗	✗	✗	✗	●	✓	✗
	Simulations	✓	✓	●	●	●	●	●	●	✗	✗	✗	✗	✗	✗	●	✓	✗
	Fair Value Disclosure	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Middle Office	Vessel Frieght Risk	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Insurance	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Inventory Management	●	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	●	✓	✗
	Scheduling and Logistics																	
	Power Transmission	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✓	✗	✗	✗	✗	✗	-	-	-	-	-	-	-	-	-	-
	Barge	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
Back Office	Rail	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Truck	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Vessel	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Supply Chain Mgmt./Traceability	✓	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Regulatory Reporting	✓	✓	●	●	●	●	●	✗	✗	✗	✗	✗	✗	✗	●	✓	✗
	Settlement																	
System Wide	Actualization	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	●	✓	✗
	Invoicing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Settlements/Reconciliation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Taxation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	AR/AP/Ledger (Gen. or Sub)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Currency Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Unit Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Document Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Workflow Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Reporting / Business Intelligence	Reporting / Business Intelligence																	
	Canned Reports	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Ad hoc Reporting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Executive Dashboard	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BI tools	BI tools	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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Gen10

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www.gen10.com



gen10

Product:
Gen10
Commodity Manager

Gen10 enable their customers to manage their costs, drive value from their massive data flows and transform their operations. They focus on making the day-to-day tasks of commodity trading faster and simpler through automation and collaboration. Gen10 technology empowers clients to Work Better Together, completing the feedback loop between trading, operations, finance and risk to support smarter, safer trading decisions.

Gen10 provide an open collaborative ecosystem of web and mobile apps that bring together trading, operations, trade finance, document management, insurance, governance, sustainability and inspection services. The cloud apps provide complete commodity management, with enhanced operational risk controls and powerful workflow and pricing engines that automate many of the manual, time-intensive commodity processes. Workflows facilitate enhanced collaboration whilst improving control and governance, driving safe efficiencies and visibility across your business for confident data-driven decision-making.

With their systematic approach, workflow and reporting engines, implementations can take as little as 2 to 4 weeks per business unit. This includes data migration, business process mapping and integrations with ERP/accounting software.

Gen10's CTRM platform, Commodity.Manager™, includes end-to-end transaction processing and analytics, covering everything from fast trade capture, origination, PnL and sample management through export, trading, import, distribution, to final settlement and risk management. Web services facilitate efficient integration with other systems such as exchanges, finance, ERP and market data providers.

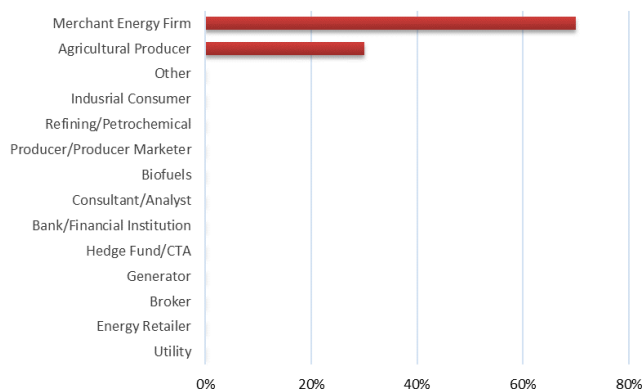
Gen10's expertise is based on their team of ex-traders and commodity management technology experts who believe in making innovative, high value and flexible commodity management solutions. The UK-based development and support teams work in collaboration with clients to build up a real understanding of the challenges they face, with direct interactions between clients and developers.

Using an industry-leading ecosystem of apps, platforms and APIs, Gen10 create technology that works with your processes and integrates with your existing technology, for a unique solution that does exactly what you need. Each app can be implemented as a stand-alone solution to a specific problem or as part of a comprehensive commodity management solution.

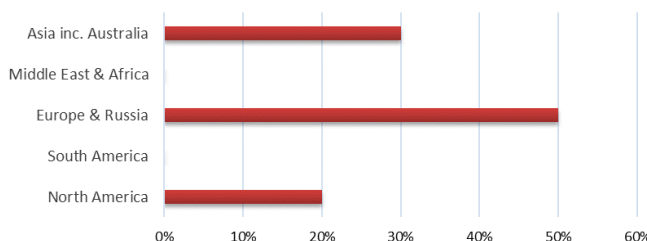
Number of Licensed Client Companies: 14

Representative Clients: RCMA; Halcyon Agri/Corrie MacColl; Concord Resources; Wurfbain; Centrotrade; Euro Alloys

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ SaaS: Multi-Tenanted
- ✓ Hosted in Private Cloud
- ✓ Hybrid Cloud/On Premises

Office Locations and Phone:

- ✓ London, UK 44 7735 79 882

Vendor: **Gen10**Product Name: **Gen10 Commodity Manager**Version: **5.03**

		✓ Functionality is deployed and in production at a client site	● Not Deployed, but system is capable of providing functionality	✗ System is not currently capable of providing that functionality	- Not Applicable - Functionality not applicable for Commodity													
		ENERGIES						AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Freight Rates
Function / Feature		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concentrates	Precious	North America	Europe	
Production / Operations	Production Mgmt./Generation	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	-	-	-
	Volumetric Management	-	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	-	-	-
	Net Back Pricing	-	●	●	●	●	●	●	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	●	●	-	●	●	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	●	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✗	✗	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-
Front Office / Trading	Quality / Sampling	-	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	-	-	-
	Contract Management	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Deal Origination	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Credit Tracking	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Curve Management	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Portfolio Optimization	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Supply-Demand Optimization	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Pre-Deal Analytics "what if"	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Trade Capture																	
	Physical	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Financial	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Exchange	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Deal Types																	
	Spot & Forwards	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Futures	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Swaps	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Options	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Swaptions	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Transportation	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Storage/Inventory	-	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	-
	Complex Pricing	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Position Management																	
	Physical	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Financial	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
Risk Management and Analysis	Credit Risk	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Hedge Effectiveness	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Analytics																	
	Mark-to-Market	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	VaR - Monte Carlo	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	VaR - Other	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Greeks	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	PaR/EaR	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	CVaR	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Portfolio Sensitivity Analysis	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Stress Testing	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Simulations	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Fair Value Disclosure	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
Middle Office	Vessel Freight Risk	-	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Insurance	-	-	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Inventory Management	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Scheduling and Logistics																	
	Power Transmission	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	●	●	●	●	●	-	-	-	-	-	-	-	-	-	-	-
	Barge	-	-	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	-	-	-
	Rail	-	-	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	-	-	✓
Back Office	Truck	-	-	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	-	-	✓
	Vessel	-	-	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	-	-	✓
	Supply Chain Mgmt./Traceability	✗	-	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	-	-	✓
	Regulatory Reporting	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Settlement																	
	Actualization	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Invoicing	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
System Wide	Settlements/Reconciliation	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Taxation	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	AR/AP/Ledger (Gen. or Sub)	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Currency Conversion	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Unit Conversion	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Document Management	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Workflow Management	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Reporting / Business Intelligence																	
	Canned Reports	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Ad hoc Reporting	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	Executive Dashboard	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓
	BI tools	✗	●	●	●	●	●	●	●	✓	✓	✓	✓	✓	✓	●	●	✓

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Hivedome Limited

Floor 2, 2 Dencora Court
Tylers Avenue, Southend-on-Sea
Essex, SS12BB, UK
Phone: 44 (0) 1702 433030

www.hivedome.net



Product:
ITAS

ITAS is a fully integrated Commodity Management Solution which handles our client's contract administration, pricing, position, inventory, risk, accounting, and integration requirements.

For over 30+ years, ITAS has allowed our clients to manage their trading and risk requirements including integration with their ERP and/or third-party systems ensuring full transparency, control, and visibility from origin through to destination.

With an established market presence in c. 50 countries and c. 3, 250 users, ITAS now has c.36 clients ranging from small to medium enterprises to some of the largest global commodity groups. Due to its proven and versatile functionality, ITAS is utilized by our clients to manage their principal commodity segments including Agriculturals (Sugar, Coffee, Grains, Cotton, Cocoa), Liquid Products (Molasses, Oilseeds), Base Metals and Financials. Many of our larger Enterprise clients range from 500+ users operating numerous legal and ITAS entities.

Availing of full Desktop, Web and API functionality, and guided by our client's data and application integration requirements, ITAS offers a range of flexible Subscription Services from the core Trader Desktop, to Premium and Enterprise Solutions. Our integration capability allows any external system workflow to respond to an event (message) in ITAS, defined as to the type of data required, which is then picked up via ITAS API. Generally, Enterprise clients will have their own (IT) development capability to fully utilise the open architecture provided by the ITAS API and a capacity for self-service. In recent years, many of our larger clients have already integrated their ITAS contracts, pricing, invoicing and risk with their ERP platforms and/or other third-party systems. Other Subscription Services include Document Management, Data Query Service, Alerts and Notifications, Data Warehouse and Reporting Dashboards.

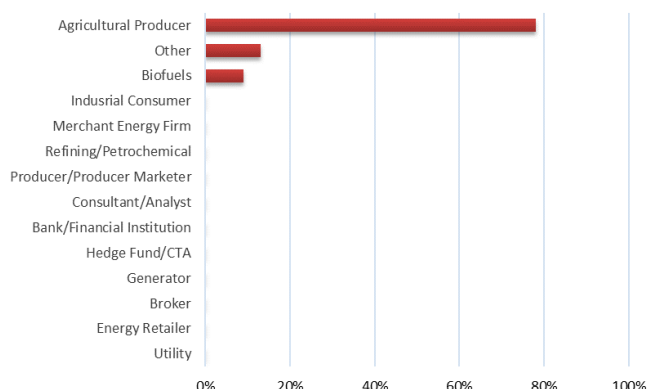
Hivedome's proven industry knowledge, client-focused collaboration and excellent technical capabilities ensures that our clients trust us to deliver quality, cost-effective business solutions in a rapidly evolving marketplace. Constantly focused on our clients' initiatives e.g. automation, blockchain and AI/ML, our mission is to provide our clients with the most optimum solution that delivers their day to day and strategic goals.

The integrated nature and security of the ITAS functionality and the underlying operational data require an on-premise or third-party hosting deployment. To ensure the transition from legacy systems, Hivedome provides a full range of pre-implementation and on-going support services from its base in Essex, United Kingdom, across a network of representative offices providing the level of regional support required by users.

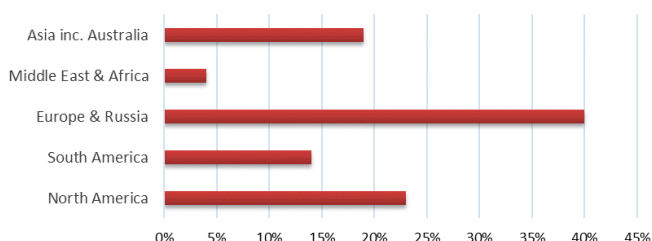
Number of Licensed Client Companies: 36

Representative Clients: EDF Man Holdings Limited; Wilmar Group; Enerfo Group; Cargill Inc; Engerhart CTP; Sudden Americas Group

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ Traditional License
- ✓ Hosted in Private Cloud

Office Locations and Phone:

- ✓ Cluj, Romania 44 (0) 1702 433030
- ✓ Madrid, Spain 44 (0) 1702 433030
- ✓ Montevideo, Uruguay 44 (0) 1702 433030
- ✓ Miami, Florida, US 44 (0) 1702 433030
- ✓ Singapore 44 (0) 1702 433030

Vendor: **Hivedome Limited**Product Name: **ITAS**Version: **0**

		✓ Functionality is deployed and in production at a client site	● Not Deployed, but system is capable of providing functionality	✗ System is not currently capable of providing that functionality	- Not Applicable - Functionality not applicable for Commodity													
		ENERGIES						AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Frieght Rates
Function / Feature		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concen-trates	Precious	North America	Europe	
Production / Operations	Production Mgmt./Generation	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	-	-	-
	Volumetric Management	-	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	-	-	-
	Net Back Pricing	-	✗	✗	✗	✗	✗	✗	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✗	✗	-	✗	✗	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✗	-	-	✗	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✗	✗	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-
Front Office / Trading	Quality / Sampling	-	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	-	-	-
	Contract Management	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Deal Origination	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Credit Tracking	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Curve Management	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Portfolio Optimization	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Supply-Demand Optimization	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Pre-Deal Analytics "what if"	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Trade Capture																	
	Physical	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Financial	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Exchange	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Deal Types																	
	Spot & Forwards	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Futures	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Swaps	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Options	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Swaptions	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Transportation	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Storage/Inventory	-	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	-
	Complex Pricing	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Position Management																	
Risk Management and Analysis	Physical	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Financial	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Credit Risk	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Hedge Effectiveness	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Analytics																	
	Mark-to-Market	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	VaR - Monte Carlo	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	VaR - Other	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Greeks	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	PaR/EaR	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	CVaR	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Portfolio Sensitivity Analysis	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Stress Testing	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Simulations	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Fair Value Disclosure	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
Middle Office	Vessel Frieght Risk	-	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Insurance	-	-	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Inventory Management	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Scheduling and Logistics																	
	Power Transmission	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✗	✗	✗	✗	-	-	-	-	-	-	-	-	-	-	-	-
	Barge	-	-	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	-	-	✗
Back Office	Rail	-	-	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	-	-	✗
	Truck	-	-	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	-	-	✗
	Vessel	-	-	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	-	-	✗
	Supply Chain Mgmt./Traceability	✗	-	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	-	-	✗
	Regulatory Reporting	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Settlement																	
System Wide	Actualization	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Invoicing	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Settlements/Reconciliation	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Taxation	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	AR/AP/Ledger (Gen. or Sub)	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Currency Conversion	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Unit Conversion	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Document Management	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Workflow Management	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Reporting / Business Intelligence																	
	Canned Reports	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Ad hoc Reporting	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	Executive Dashboard	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
	BI tools	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗

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Igloo Trading Solutions

The Frames
1 Phipp St
London, EC2A 4PS
Phone: 020 3488 3516

www.iglootradingsolutions.com



Product:
Igloo Cloud ETRM

Igloo. Intelligent energy trading from European energy trading experts

With substantial experience in trading and technology at some of Europe's largest energy trading organisations, the team behind Igloo have developed Igloo with the conviction that ETRM can be done simpler, better and more cost-effectively.

Designed and built for Europe - Igloo is an energy trading and risk management (ETRM) platform engineered to meet the needs of physical and financial traders operating in today's European markets. It offers the widest range of connectivity to European markets, clearers, intermediaries, trading platforms and FX brokers. Igloo also interfaces to Elexon, enmacc, Equias back office services and multiple European logistics providers to provide full STP capability.

Designed and built for the cloud - Igloo is built to scale, delivering the simplest ETRM solution through to the most complex algorithmic trading on a single platform, and with the capacity to handle exceptional levels of throughput.

The platform's core architecture is designed to provide the reliability, robustness and security you expect and need for a 24x7 trading platform, with bespoke monitoring providing seamless failover and alerting.

Unlike legacy solutions that have migrated and adapted existing technology for the cloud, Igloo's cloud-first architecture allows us to deliver either single or multi-tenanted implementations to best fit each customer profile.

Designed to deliver competitive advantage - Built specifically for trading energy in a way that reflects both the market and trading practices as they are today, Igloo offers a host of user benefits and competitive advantages.

Built-in Connectivity - With connectivity as standard to Trayport, TT, ICE, CME, EEX Nordpool and EPEX, Igloo connects you seamlessly to exchanges, trading platforms, auctions and client portals as standard. This enables full STP with minimal set up. No additional costs. No costly implementations.

Real Time Position P&L - Igloo provides real time price curves, position, option greeks and P&L across physical and financial energy trading. It automatically builds trading curves from price feeds for both liquid and illiquid energy markets.

Real-time Risk Management - Igloo provides pre-deal, real time, post deal and EOD risk management (Historical VaR) and P&L, giving you full insight into, and control over, your trading business. Risk management within day and at close of business.

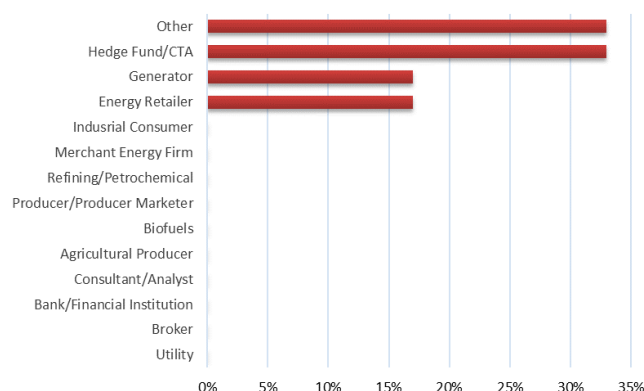
Automated Trading Processes - Igloo's seamless STP capability means your trades are automatically routed to Igloo from the exchange. Igloo then automates the reconciliation process, including clearing margin and fees, direct market access margin and fees, and brokers' fees.

Intelligent Pricing - Igloo can create hourly or sub-hourly pricing for real time valuation and official EOD risk management, for liquid and illiquid energy markets.

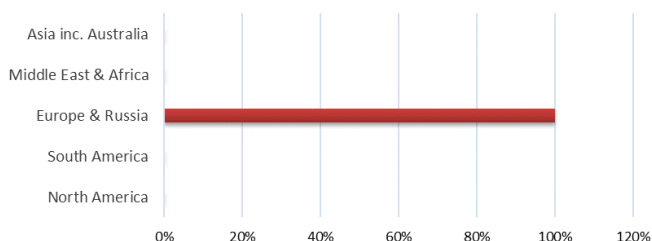
Number of Licensed Client Companies: 6

Representative Clients: Nanook Energy Advisors; Conrad Energy Trading; Equias

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ Traditional License
- ✓ SaaS: Multi-Tenanted
- ✓ Hosted in Private Cloud
- ✓ Hosted in Public Cloud

Office Locations and Phone:

- ✓ London, UK 020 3488 3516

Vendor: **Igloo Trading Solutions**Product Name: **Igloo Cloud ETRM**Version: **N/A**

✔ Functionality is deployed and in production at a client site				🟡 Not Deployed, but system is capable of providing functionality				✖ System is not currently capable of providing that functionality				- Not Applicable - Functionality not applicable for Commodity							
Function / Feature		ENERGIES						AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Freight Rates	
		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concen- trates	Precious	North America			Europe
Production / Operations	Production Mgmt./Generation	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	-	-	-	-
	Volumetric Management	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	-	-	-	-
	Net Back Pricing	-	✖	✖	✖	✖	✖	✖	-	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✖	✖	-	✖	✖	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✖	-	-	✖	-	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✖	✖	-	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Front Office / Trading	Quality / Sampling	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	-	-	-	-
	Contract Management	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Deal Origination	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Credit Tracking	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Curve Management	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	Portfolio Optimization	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Supply-Demand Optimization	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Pre-Deal Analytics "what if"	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	Trade Capture																		
	Physical	✔	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	Financial	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	Exchange	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	Deal Types																		
	Spot & Forwards	✔	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Futures	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Swaps	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Options	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Swaptions	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Transportation	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Storage/Inventory	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	-
	Complex Pricing	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Position Management																		
	Physical	✔	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	Financial	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
Risk Management and Analysis	Credit Risk	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	Hedge Effectiveness	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	Analytics																		
	Mark-to-Market	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	VaR - Monte Carlo	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	VaR - Other	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	Greeks	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	PaR/EaR	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	CVaR	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Portfolio Sensitivity Analysis	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	Stress Testing	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Simulations	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Fair Value Disclosure	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
Vessel Freight Risk	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	
Insurance	-	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	
Middle Office	Inventory Management	✔	✔	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	Scheduling and Logistics																		
	Power Transmission	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✖	✖	✖	✖	-	-	-	-	-	-	-	-	-	-	-	-	-
	Barge	-	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	-	-	✖	-
	Rail	-	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	-	-	✖	-
	Truck	-	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	-	-	✖	-
	Vessel	-	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	-	-	✖	-
Supply Chain Mgmt./Traceability	✖	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	-	-	✖	-	
Back Office	Regulatory Reporting	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	Settlement																		
	Actualization	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	Invoicing	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	Settlements/Reconciliation	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	Taxation	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
System Wide	AR/AP/Ledger (Gen. or Sub)	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Currency Conversion	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	Unit Conversion	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	Document Management	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Workflow Management	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	Reporting / Business Intelligence																		
	Canned Reports	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	Ad hoc Reporting	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	Executive Dashboard	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
BI tools	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖	

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Inatech – a Glencore company

Inatech Ltd
3 Shortlands,
Hammersmith, London W6 8DA
Phone: 44 (0)20 3609 8617

www.inatech.com



Product:
Techoil

Inatech is a global provider of cloud ETRM and fuel management software to the oil, bunkering and shipping industries.

Part of Glencore plc's oil division, Inatech leverages Glencore's oil trading and supply chain management expertise and combines it with its own in-depth industry knowledge to create a range of cloud-based and innovative software products.

One of Inatech's flagship products is Techoil, a single decision support Energy Trading and Risk Management platform. It helps oil traders, suppliers, wholesalers and distributors manage sales, PnL, risk, inventory, operations, credit, cash flow and finance.

Techoil ETRM benefits include:

- One version of the truth – Have an integrated view of the business functions from trading, operations to accounting; ensuring confidence in the results leading to better business insights and informed decisions.
- Risk mitigation tools - Set and monitor hedging strategies using accurate inventory and trading positions of physical and derivatives.
- Automatic reconciliation of trading, inventory and accounting - Ensure accurate PnL, exposure, margins, inventory position and allocation.
- Strong controls and workflows - Ensure governance, auditability and regulatory compliance facilitated by a monthly book closure process.
- Integration with 3rd party, market prices, ERP and proprietary systems - bring all information in one place, Techoil ETRM.

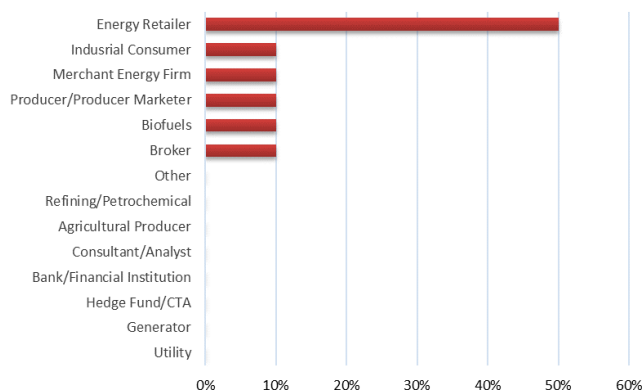
Inatech's product expertise is matched by a comprehensive range of support services provided from offices across the world including the U.S, the U.K., the U.A.E., Singapore and India. This global coverage means customers benefit from an international delivery model that provides the competitive edge needed to thrive in today's dynamic markets.

For more information visit: www.techoil.com and www.inatech.com.

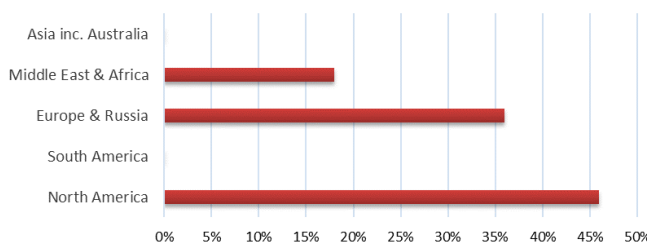
Number of Licensed Client Companies: 11

Representative Clients: *Information not provided*

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ SaaS: Multi-Tenanted
- ✓ Hosted in Private Cloud
- ✓ Hosted in Public Cloud

Office Locations and Phone:

- ✓ London, UK 44 (0)20 3609 8617

Vendor: **Inatech - a Glencore company**Product Name: **Techoil**Version: **1.13.3**

✔ Functionality is deployed and in production at a client site			● Not Deployed, but system is capable of providing			✖ System is not currently capable of providing that functionality			- Not Applicable - Functionality not applicable for Commodity										
Function / Feature		ENERGIES							AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Freight Rates
		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concentrates	Precious	North America	Europe		
Production / Operations	Production Mgmt./Generation	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	-	-	-	-
	Volumetric Management	-	✖	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	-	-	-	-
	Net Back Pricing	-	●	✔	✔	✔	✔	✔	-	-	●	●	●	●	●	-	-	-	-
	DOI/Owner Balancing	-	●	✔	-	✔	✔	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✖	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	●	●	-	✔	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Front Office / Trading	Quality / Sampling	-	●	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	-	-	-	-
	Contract Management	●	●	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	Deal Origination	●	●	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	Credit Tracking	●	●	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	Curve Management	●	●	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	Portfolio Optimization	●	●	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	Supply-Demand Optimization	●	●	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	Pre-Deal Analytics "what if"	●	●	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖	✖	✔	✔	✖	✖
	Trade Capture																		
	Physical	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	Financial	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	Exchange	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	Deal Types																		
	Spot & Forwards	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	Futures	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	Swaps	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	Options	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	Swaptions	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✖	✖	✖	✖
	Transportation	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	Storage/Inventory	-	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	-
Complex Pricing	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖	
Position Management																			
Physical	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖	
Financial	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖	
Risk Management and Analysis	Credit Risk	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	Hedge Effectiveness	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	Analytics																		
	Mark-to-Market	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	VaR - Monte Carlo	✖	✖	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	VaR - Other	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	Greeks	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	PaR/EaR	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	CVaR	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
	Portfolio Sensitivity Analysis	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	Stress Testing	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	Simulations	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	Fair Value Disclosure	●	●	●	●	●	●	●	●	●	●	●	●	●	●	✔	✔	✖	✖
	Vessel Freight Risk	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	●	✖	✖	✖	✖	✖	✖	✖
Insurance	-	-	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖	
Middle Office	Inventory Management	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	Scheduling and Logistics																		
	Power Transmission	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	●	✔	✔	✔	-	-	-	-	-	-	-	-	-	-	-	-	-
	Barge	-	-	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	-	-	✖	-
	Rail	-	-	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	-	-	✖	-
	Truck	-	-	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	-	-	✖	-
	Vessel	-	-	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	-	-	✖	-
Supply Chain Mgmt./Traceability	✖	-	●	●	●	●	●	●	●	●	●	●	●	●	-	-	✖	-	
Back Office	Regulatory Reporting	✖	✖	●	●	●	●	●	●	●	●	●	●	●	●	●	●	✖	✖
	Settlement																		
	Actualization	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	Invoicing	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	Settlements/Reconciliation	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	Taxation	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	AR/AP/Ledger (Gen. or Sub)	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
System Wide	Currency Conversion	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	Unit Conversion	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	Document Management	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	Workflow Management	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	Reporting / Business Intelligence																		
	Canned Reports	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	Ad hoc Reporting	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
	Executive Dashboard	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖
BI tools	●	●	✔	✔	✔	✔	✔	✔	●	●	●	●	●	●	✔	✔	✖	✖	

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InstaNext Inc

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Suite 207
Bentonville, AR 72712
Phone: 855 900 9192

www.instanext.com



Product:
The InstaNext Platform

InstaNext is comprised of a team of software and technology experts in the fields of energy trading, hedging, and risk management. With an extensive portfolio of successes in the ETRM industry, InstaNext provides intuitive software solutions to help companies meet the challenges of the complex energy market.

InstaNext's multi-market ETRM platform simplifies every aspect of energy trading and risk management. The platform allows companies to analyze their positions in real-time via its powerful analysis capabilities, and use historical and scenario-based data to compare current positions against changes in the market.

The Trading and Risk module allows for capturing physical and financial deals, workflows, computing mark to market, sensitivity analysis, and enables end user ad hoc reporting. The Coverage Analysis module gives businesses the tools to accurately project costs, revenues, and margins into the future while keeping track of their covered and uncovered exposures. The Invoicing & Accounting module tracks invoices and payments, as well as generating accounting entries that can be posted directly to a GL system. The Advanced Reporting module can be used to create executive dashboards with KPIs and/or standard PDF style reports for disclosures and other detailed analytics.

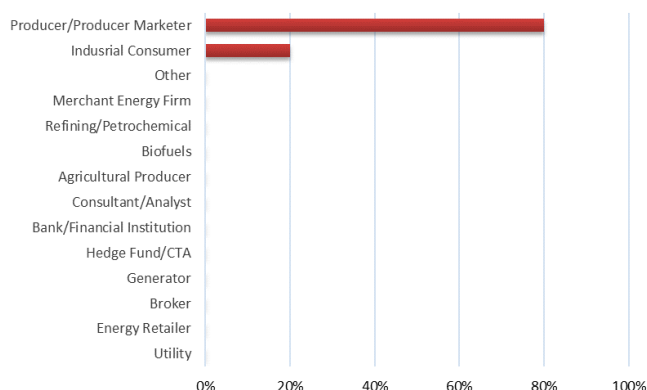
The InstaNext platform is built using cutting edge, RESTful web protocols that make it scalable to grow with your business needs and open to integrate with any existing CTRM, ERP or 3rd party system. The platform utilizes a robust N-Tier architecture that instantly delivers application programming interfaces (APIs), security, audit trails, and dynamic data modeling.

The InstaNext platform can be deployed on-site behind your firewall or delivered in the cloud on a dedicated InstaNext cloud server. InstaNext is designed to easily adapt to your business without costly reconfiguration and can easily handle increases in trade volume and user numbers. Using the latest technology, InstaNext can be implemented quickly and with low risk.

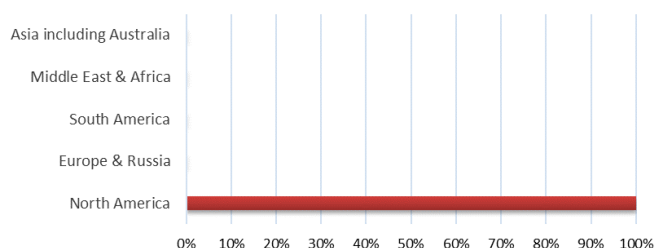
Number of Licensed Client Companies: 50

Representative Clients: Velvet Energy; Diversified Gas and Oil; Arc Resources Ltd.

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ Traditional License
- ✓ Hosted in Private Cloud

Office Locations and Phone:

- ✓ Bentonville AR, USA 855 900 9192

Vendor: **InstaNext Inc.**Product Name: **The InstaNext Platform**Version: **v9.2**

		✓ Functionality is deployed and in production at a client site	● Not Deployed, but system is capable of providing functionality	✗ System is not currently capable of providing that functionality	- Not Applicable - Functionality not applicable for Commodity													
		ENERGIES						AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Freight Rates
Function / Feature		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concentrates	Precious	North America	Europe	
Production / Operations	Production Mgmt./Generation	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Volumetric Management	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Net Back Pricing	-	✓	●	●	●	●	●	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✗	✗	-	✗	✗	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✗	-	-	✗	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✗	✗	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-
Front Office / Trading	Quality / Sampling	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Contract Management	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Deal Origination	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Credit Tracking	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Curve Management	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Portfolio Optimization	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Supply-Demand Optimization	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Pre-Deal Analytics "what if"	●	✓	✓	✓	✓	●	✓	✓	✓	●	●	✓	●	●	●	●	●
	Trade Capture																	
	Physical	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Financial	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Exchange	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Deal Types																	
	Spot & Forwards	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Futures	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Swaps	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Options	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Swaptions	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Transportation	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Storage/Inventory	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-
	Complex Pricing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Position Management																	
	Physical	✗	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓
	Financial	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Risk Management and Analysis	Credit Risk	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Hedge Effectiveness	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Analytics																	
	Mark-to-Market	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	VaR - Monte Carlo	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	VaR - Other	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Greeks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	PaR/EaR	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	CVaR	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Portfolio Sensitivity Analysis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Stress Testing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Simulations	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Fair Value Disclosure	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Middle Office	Vessel Freight Risk	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Insurance	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Inventory Management	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Scheduling and Logistics																	
	Power Transmission	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✓	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-
	Barge	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Rail	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
Back Office	Truck	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Vessel	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Supply Chain Mgmt./Traceability	✗	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Regulatory Reporting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Settlement																	
	Actualization	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Invoicing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
System Wide	Settlements/Reconciliation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Taxation	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	AR/AP/Ledger (Gen. or Sub)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Currency Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Unit Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Document Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Workflow Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Reporting / Business Intelligence																	
	Canned Reports	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Ad hoc Reporting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Executive Dashboard	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	BI tools	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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Invensoft Technologies

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RBI Layout, J.P. Nagar 7th Phase
Bangalore – 560078 INDIA
Phone: 91 80 4166 8087

www.Invensoft.co.in



Product:
Invensoft-XBS

Invensoft Technologies is an IT Company providing Commodity Management Software Solutions for business in Agricultural Commodities, Metals, Minerals and Concentrates. Since year 2000 Invensoft is supporting top global commodities companies including Fortune 500 companies in Asia, Africa and Latin America covering India, Indonesia, Singapore, Malaysia, Vietnam, Kenya, Tanzania, Uganda, USA, United Kingdom, Peru, Mexico, Honduras and Colombia.

Invensoft-XBS© popularly called as XBS is a Unified Commodity Management Platform offering Commodity Management (CM), 3rd Party Commodity Warehousing & 3rd Party Logistics (CW3PL) and Commodity Trade Risk Management (CTRM) covering End-to-End needs of Commodity Business. XBS is an enterprise Web App with an integrated Mobile App called XBS Apps© available on Apple iPhone, iPad, Android Mobile phone and Tablets, offers users seamless operational, reporting experience with business controls on real time.

With built in origin specific features, template-based operations, multiple language support, interface, integrations Invensoft-XBS© is the most flexible and adopted solution globally. Available on the Cloud with subscription options, XBS can go live in weeks at any commodity country with heterogeneous business process, speaking multiple languages. With Zero IT infrastructure cost, XBS Cloud is the most cost-effective business solution with business controls and decision-making abilities for the commodity managers.

- Invensoft-XBS© CM provides extensive features with out of the box localization for Commodity Origin Business, Procurement, Quality Management, Processing, Warehousing, Certification, End-to-End Bi-Directional Traceability, Sustainability Certification, Trading, Hedging, Risk Management, Positions, Exposures, Daily P&L and reporting.
- Invensoft-XBS© CW3PL provides innovative features for commodity 3rd party warehousing, processing services and logistics business covering commodity intake, quality management, warehousing, collateral management, processing, packing, container stuffing and shipping. Innovative Customer Center module enables customers, bankers to be a part of business process.
- Invensoft-XBS© CTRM provides end to end features for commodity trade risk management involving in Contract Management, Trade Management, Warehousing, Traceability, Hedging, Risk Management, Positions, Exposures, Daily P&L and reporting.
- XBS APP© is an integrated Mobile App for a seamless commodity business management on iPhone and Android devices. Users can access real time information on inventory, position, intakes, shipments and approve purchases and sales contracts on the go.

Invensoft introduced XBSCloud an End-To-End commodity management on the cloud including Web Apps, Mobile App, with serviced and self-serviced BI. XBSCloud is based on SaaS subscription and has no up-front license fees resulting in lower initial and operating costs. Subscription fees and implementation are tailored to fit every business ranging from 5 user companies to 500++ enterprises. Contact less and remote implementation enables go-live in few weeks.

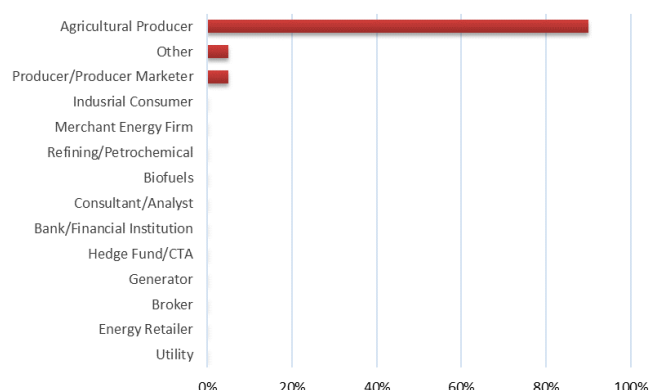
For further details please visit us at: Website: www.invensoft.co.in

Cloud: www.xbscloud.com

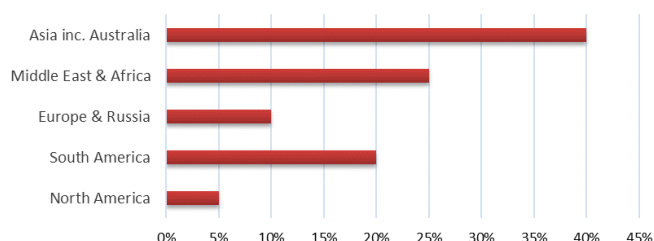
Number of Licensed Client Companies: 27

Representative Clients: Louis Dreyfus Commodities; Neumann Kaffe Gruppe; Molenbergnaite; ISTIM Metals; Integra Trading; Bero Coffee

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ Traditional License
- ✓ SaaS: Multi-Tenanted
- ✓ Hosted in Private Cloud
- ✓ Hosted in Public Cloud
- ✓ Customer Specific Models

Office Locations and Phone:

- ✓ Bangalore India 91 80 416 68087

Vendor: **INVENSOF TECHNOLOGIES PRIVATE LIMITED**Product Name: **Invensoft-XBS**Version: **Version 9.0.2.1**

✔ Functionality is deployed and in production at a client site		🟡 Not Deployed, but system is capable of providing functionality						❌ System is not currently capable of providing that functionality				- Not Applicable - Functionality not applicable for Commodity							
Function / Feature		ENERGIES							AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Freight Rates
		Power	Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concen-trates	Precious	North America	Europe		
Production / Operations	Production Mgmt./Generation	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	✔	✔	🟡	-	-	-	-
	Volumetric Management	-	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	✔	✔	🟡	-	-	-	-
	Net Back Pricing	-	❌	❌	❌	❌	❌	❌	-	-	-	-	-	✔	-	-	-	-	-
	DOI/Owner Balancing	-	❌	❌	-	❌	❌	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	❌	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	❌	-	-	❌	-	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	❌	❌	-	❌	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Quality / Sampling	-	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	✔	✔	🟡	-	-	-	-
Front Office / Trading	Contract Management	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	❌	❌	❌	❌	❌	❌	❌
	Deal Origination	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	❌	❌	❌	❌	❌	❌	❌
	Credit Tracking	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	❌	❌	❌	❌	❌	❌	❌
	Curve Management	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌
	Portfolio Optimization	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	❌	❌	❌	❌	❌	❌	❌
	Supply-Demand Optimization	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	❌	❌	❌	❌	❌	❌	❌
	Pre-Deal Analytics "what if"	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	❌	❌	❌	❌	❌	❌	❌
	Trade Capture																		
	Physical	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	✔	✔	🟡	❌	❌	❌	❌
	Financial	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	✔	✔	🟡	❌	❌	❌	❌
	Exchange	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	✔	✔	🟡	❌	❌	❌	❌
	Deal Types																		
	Spot & Forwards	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	❌	❌	❌	❌	❌	❌	❌
	Futures	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	❌	❌	❌	❌	❌	❌	❌
	Swaps	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	❌	❌	❌	❌	❌	❌	❌
	Options	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	🟡	❌	❌	❌	❌	❌	❌	❌
	Swaptions	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	🟡	❌	❌	❌	❌	❌	❌	❌
	Transportation	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	❌	❌	❌	❌	❌	❌	❌
	Storage/Inventory	-	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	✔	✔	🟡	❌	❌	❌	-
	Complex Pricing	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	✔	✔	🟡	❌	❌	❌	❌
Position Management																			
Physical	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	❌	❌	❌	❌	❌	❌	❌	
Financial	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	❌	❌	❌	❌	❌	❌	❌	
Risk Management and Analysis	Credit Risk	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	❌	❌	❌	❌	❌	❌	❌	❌
	Hedge Effectiveness	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	❌	❌	❌	❌	❌	❌	❌	❌
	Analytics																		
	Mark-to-Market	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	❌	❌	❌	❌	❌	❌	❌	❌
	VaR - Monte Carlo	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	🟡	❌	❌	❌	❌	❌	❌	❌	❌
	VaR - Other	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	🟡	❌	❌	❌	❌	❌	❌	❌	❌
	Greeks	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	🟡	❌	❌	❌	❌	❌	❌	❌	❌
	PaR/EaR	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	🟡	❌	❌	❌	❌	❌	❌	❌	❌
	CVaR	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	🟡	❌	❌	❌	❌	❌	❌	❌	❌
	Portfolio Sensitivity Analysis	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	🟡	❌	❌	❌	❌	❌	❌	❌	❌
	Stress Testing	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	🟡	❌	❌	❌	❌	❌	❌	❌	❌
	Simulations	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	🟡	❌	❌	❌	❌	❌	❌	❌	❌
	Fair Value Disclosure	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	❌	❌	❌	❌	❌	❌	❌	❌
	Vessel Freight Risk	-	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	🟡	❌	❌	❌	❌	❌	❌	❌
Insurance	-	-	❌	❌	❌	❌	❌	❌	🟡	🟡	🟡	❌	❌	❌	❌	❌	❌	❌	
Middle Office	Inventory Management	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	❌	❌	❌	❌	❌	❌	❌	❌
	Scheduling and Logistics																		
	Power Transmission	❌	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	❌	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	❌	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	❌	❌	❌	❌	-	-	-	-	-	-	-	-	-	-	-	-	-
	Barge	-	-	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	-	-	❌	-
	Rail	-	-	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	✔	✔	🟡	-	-	❌	-
	Truck	-	-	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	✔	✔	🟡	-	-	❌	-
Vessel	-	-	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	✔	✔	🟡	-	-	❌	-	
Supply Chain Mgmt./Traceability	❌	-	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	✔	✔	🟡	-	-	❌	-	
Back Office	Regulatory Reporting	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	❌	❌	❌	❌	❌	❌	❌	❌
	Settlement																		
	Actualization	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	❌	❌	❌	❌	❌	❌	❌
	Invoicing	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	✔	✔	🟡	❌	❌	❌	❌
	Settlements/Reconciliation	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	✔	✔	🟡	❌	❌	❌	❌
	Taxation	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	✔	✔	🟡	❌	❌	❌	❌
AR/AP/Ledger (Gen. or Sub)	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	✔	✔	🟡	❌	❌	❌	❌	
System Wide	Currency Conversion	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	✔	✔	🟡	❌	❌	❌	❌
	Unit Conversion	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	✔	✔	🟡	❌	❌	❌	❌
	Document Management	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	✔	✔	🟡	❌	❌	❌	❌
	Workflow Management	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	✔	✔	🟡	❌	❌	❌	❌
	Reporting / Business Intelligence																		
	Canned Reports	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	✔	✔	🟡	❌	❌	❌	❌
	Ad hoc Reporting	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	✔	✔	🟡	❌	❌	❌	❌
	Executive Dashboard	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	✔	✔	🟡	❌	❌	❌	❌
BI tools	❌	❌	❌	❌	❌	❌	❌	❌	🟡	🟡	✔	✔	✔	🟡	❌	❌	❌	❌	

AdvertisementEnquiry : sales@invensoft.co.inWeb : www.invensoft.co.inCloud : www.xbscloud.com

Invensoft-XBS® is the most comprehensive Unified Commodity Management Platform offering Web Apps, Mobile Apps and BI for

Agricultural and Metals Business

- Commodity Trade Houses
- 3rd Party Argo Warehousing, Mill
- Origin Processor and Exporters
- LME Certified Metal Warehousing

XBSCloud

END-TO-END Commodity Management on the Cloud



- Cost Effective
- Flexible



- No Investment
- Access by any Device



- Rapid, Remote Implementation
- Global Support



- Scalable
- 5 to 500 ++ Users

*Farm to Fork*

ION Commodities

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49th Floor
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Phone: 1 212 906 0050

www.iongroup.com/ion-commodities/



Product:
ION Commodities

ION Commodities is the leading commodity management software portfolio that puts customers in total control of their business. As the market leader, ION Commodities provides holistic portfolio management and next-generation decision support to organizations of any size, in any industry, across any commodity, and in any region. From a completely packaged multi-tenant SaaS solution, to a highly customized CTRM solution, to a platform for advanced analytics and digitalization, ION's portfolio of solutions supports commodity organizations' exact requirements now — and as their businesses grow and change well into the future.

ION Commodities is made up of next-generation commodity trading and risk management solutions, including ION Openlink, ION Allegro, ION Aspect, ION RightAngle, ION TriplePoint, and a suite of added value products.

ION Commodities is the market leader in commodity management software, serving over 1,200 customers and over 30,000 users in 50 countries.

In addition to CTRM solutions, the following are ION Commodities' added value solutions:

Algosys: Algosys is an automated metal accounting solution that can be deployed in concentrators, gold and hydromet plants, and smelters. It enables metallurgists and plant superintendents to collect and evaluate data from any source, perform mass balance computations, and reconcile production data.

DSC: DSC features real-time futures tick data, advanced charting, dynamic real-time Excel tools, historical price queries, and time and sales screens for an in-depth view of trading markets. Available on desktop, tablet, and mobile devices, it easily integrates with any CTRM system.

FEA: FEA is a leading provider of risk analytics solutions for traders, schedulers, risk managers, and back-office professionals. In addition to a full suite of comprehensive analytic tools, FEA boasts world-class analytical support provided by seasoned Ph.D. industry experts.

Qmastor: Qmastor automates and simplifies the management of coal and mineral supply chains. It delivers supply chain visibility, streamlines processes, enables better decision making, and helps you reduce costs to improve margins.

Softmar: Softmar supports the full chartering, operations, and risk management needs of shipping organizations. It has the industry's most powerful voyage estimator, revealing the accurate location of vessels and cargos.

WAM: WAM helps you manage your supply chain processes, including integrated business planning, sales and operations planning, demand planning, production and distribution scheduling, and inventory optimization.

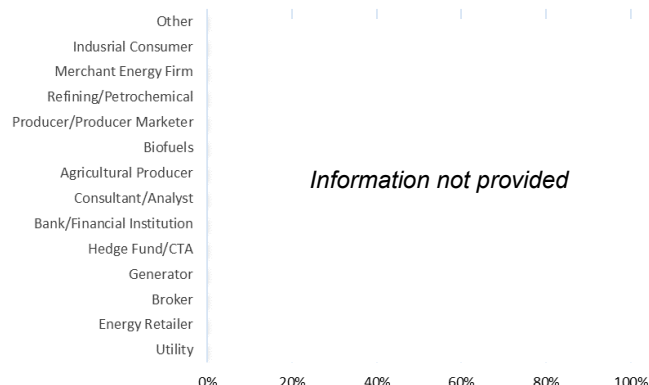
Credit Risk: Credit Risk proactively measures, manages, and mitigates the risk arising from counterparty default. Comprehensive exposure, collateral, and counterparty management ensure your organization has an accurate and timely view of liquidity and exposure, so that business risks are converted into growth opportunities. Credit Risk is easily integrated with CTRM solutions to automate straight through processing, in real time of all credit data and the consolidation of credit data from multiple CTRMs / external system / data warehouse including; deals, counterparties, agreements, invoices, AR, etc.

Hedge Accounting: Hedge Accounting is a hedge analyzer and other dynamic tools to design and assess the hedge effectiveness. Required hedge documentation is automatically generated to show the type of exposure being hedged and the method used to prospectively assess the hedge's expected effectiveness.

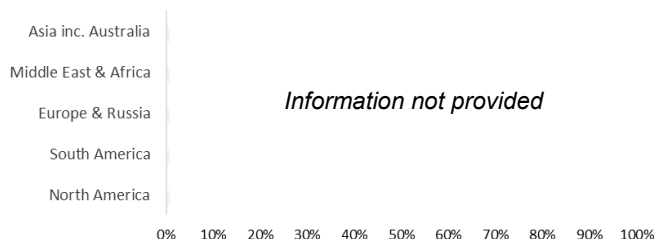
Number of Licensed Client Companies: 1200 (all products)

Representative Clients: *Information not provided*

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ On premises
- ✓ Hosted in Private Cloud
- ✓ Hosted in Public Cloud

Office Locations and Phone:

- | | |
|---------------------|------------------|
| ✓ London UK | +44 20 7398 0200 |
| ✓ Singapore | +65 6671 9730 |
| ✓ Tokyo, Japan | +81 3 4550 1000 |
| ✓ Sydney, Australia | +61 2 8239 8300 |
| ✓ Dallas, TX USA | +1 214 237 8000 |

Vendor: **ION**Product Name: **ION Commodities**Version: **NA**

✔ Functionality is deployed and in production at a client site		🟡 Not Deployed, but system is capable of providing functionality						❌ System is not currently capable of providing that functionality				- Not Applicable - Functionality not applicable for Commodity							
Function / Feature		ENERGIES							AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Freight Rates
		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concen-trates	Precious	North America	Europe		
Production / Operations	Production Mgmt./Generation	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	🟡	🟡	🟡	-	-	-	-
	Volumetric Management	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	-	-	-
	Net Back Pricing	-	✔	✔	✔	✔	✔	✔	-	-	-	-	-	✔	-	-	-	-	
	DOI/Owner Balancing	-	✔	✔	-	✔	✔	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✔	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✔	-	-	✔	-	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	🟡	🟡	-	✔	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Quality / Sampling	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	🟡	✔	-	-	-	-	
Front Office / Trading	Contract Management	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Deal Origination	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Credit Tracking	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Curve Management	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Portfolio Optimization	✔	✔	✔	✔	✔	✔	🟡	✔	✔	✔	🟡	🟡	🟡	🟡	✔	✔	🟡	🟡
	Supply-Demand Optimization	✔	✔	✔	✔	✔	✔	🟡	✔	✔	✔	🟡	🟡	🟡	🟡	✔	✔	🟡	🟡
	Pre-Deal Analytics "what if"	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Trade Capture																		
	Physical	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Financial	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Exchange	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Deal Types																		
	Spot & Forwards	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Futures	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Swaps	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Options	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Swaptions	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Transportation	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Storage/Inventory	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
	Complex Pricing	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Position Management																		
Physical	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	
Financial	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	
Risk Management and Analysis	Credit Risk	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Hedge Effectiveness	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Analytics																		
	Mark-to-Market	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	VaR - Monte Carlo	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	VaR - Other	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Greeks	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	PaR/EaR	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	CVaR	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Portfolio Sensitivity Analysis	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Stress Testing	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Simulations	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Fair Value Disclosure	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Vessel Freight Risk	-	✔	❌	❌	❌	❌	❌	❌	❌	❌	❌	✔	✔	✔	❌	❌	❌	❌	
Insurance	-	-	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌	
Middle Office	Inventory Management	❌	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Scheduling and Logistics																		
	Power Transmission	✔	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✔	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✔	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Barge	-	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	-	✔	-
	Rail	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	-	✔	-
	Truck	-	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	-	✔	-
	Vessel	-	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	-	✔	-
Supply Chain Mgmt./Traceability	✔	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	-	✔	-	
Back Office	Regulatory Reporting	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Settlement																		
	Actualization	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Invoicing	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Settlements/Reconciliation	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Taxation	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
AR/AP/Ledger (Gen. or Sub)	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	
System Wide	Currency Conversion	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Unit Conversion	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Document Management	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Workflow Management	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Reporting / Business Intelligence																		
	Canned Reports	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Ad hoc Reporting	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Executive Dashboard	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	
BI tools	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	

ION Commodities

1345 Avenue of the Americas
49th Floor
New York, NY 10105
Phone: 1 212 906 0050

www.iongroup.com/ion-commodities/



Agtech

Product:
ION AgTech

Agtech is a market-leading front-, middle-, and back-office agriculture solution for businesses in need of out-of-the box features designed specifically for agricultural physical trading. Agtech also has robust origination and processing capabilities and ERP features used by grain originators, processors, and feed manufacturers.

Contract management: Complete support for the purchase and sale of commodities, including risk and inventory management for company or third party-owned commodities.

Operations and logistics are supported with advanced scheduling, ticketing, and warehousing designed specifically for origination and processing of commodities.

Financial management is supported with full derivative coverage for hedging and reporting of price risk exposure to futures and FX that help support both domestic and international operations.

Settlement boasts robust AP, AR, and GL capabilities that streamline reporting, maximize accuracy, and enable better business decisions.

Agtech seamlessly captures and integrates data across all functions to ensure that all activity is accounted for in real time. This single view enhances the quality of reporting and measurement and ultimately enables faster, agile decision-making.

Agtech offers customers the following core functionalities:

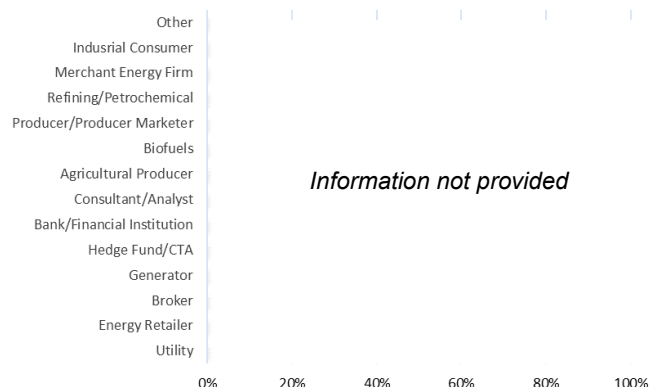
- Commodity and product procurement
- Feed and food biofuels
- Market trading and hedging
- Storage and warehousing
- Production and manufacturing
- Purchase and sales orders
- Order logistics
- Full general ledger functionality
- Inventory and risk management
- Regulation compliance

No matter the size of your company, ION Commodities can offer the right agriculture solution for you. It is backed by the world's largest commodity trading and risk management community of over 1,200 customers.

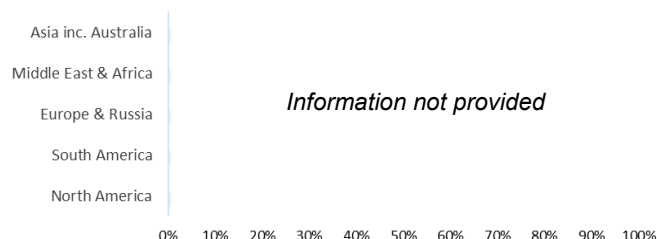
Number of Licensed Client Companies: *Information not provided*

Representative Clients: *Information not provided*

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ On Premises
- ✓ Hosted in Private Cloud
- ✓ Hosted in Public Cloud

Office Locations and Phone:

- ✓ London UK +44 20 7398 0200
- ✓ Singapore +65 6671 9730
- ✓ Tokyo, Japan +81 3 4550 1000
- ✓ Sydney, Australia +61 2 8239 8300
- ✓ Dallas, TX USA +1 214 237 8000

Vendor: **ION**Product Name: **AgTech**Version: **NA**

		✓ Functionality is deployed and in production at a client site	● Not Deployed, but system is capable of providing functionality	✗ System is not currently capable of providing that functionality	- Not Applicable - Functionality not applicable for Commodity													
Function / Feature		ENERGIES						AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Frieght Rates
		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concentrates	Precious	North America	Europe	
Production / Operations	Production Mgmt./Generation	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	-	-	-
	Volumetric Management	-	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	-	-	-
	Net Back Pricing	-	✗	✗	✗	✗	✗	✗	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✗	✗	-	✗	✗	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✗	-	-	✗	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✗	✗	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-
Front Office / Trading	Quality / Sampling	-	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	-	-	-
	Contract Management	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	Deal Origination	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	Credit Tracking	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	Curve Management	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	Portfolio Optimization	✗	✗	✗	✗	✗	✗	✗	●	●	●	●	✗	✗	✗	✗	✗	✗
	Supply-Demand Optimization	✗	✗	✗	✗	✗	✗	✗	●	●	●	●	✗	✗	✗	✗	✗	✗
	Pre-Deal Analytics "what if"	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Trade Capture																	
	Physical	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	Financial	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	Exchange	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	Deal Types																	
	Spot & Forwards	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	Futures	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	Swaps	✗	✗	✗	✗	✗	✗	✗	●	●	●	●	✗	✗	✗	✗	✗	✗
	Options	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	Swaptions	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Transportation	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	Storage/Inventory	-	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	-
	Complex Pricing	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	Position Management																	
	Physical	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	Financial	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
Risk Management and Analysis	Credit Risk	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	Hedge Effectiveness	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	Analytics																	
	Mark-to-Market	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	VaR - Monte Carlo	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	VaR - Other	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Greeks	✗	✗	✗	✗	✗	✗	✗	●	●	●	●	✗	✗	✗	✗	✗	✗
	PaR/EaR	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	CVaR	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Portfolio Sensitivity Analysis	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Stress Testing	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Simulations	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Fair Value Disclosure	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Middle Office	Vessel Frieght Risk	-	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	Insurance	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Inventory Management	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Scheduling and Logistics																	
	Power Transmission	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✗	✗	✗	✗	-	-	-	-	-	-	-	-	-	-	-	-
	Barge	-	-	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	-	-	✗
Back Office	Rail	-	-	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	-	-	✗
	Truck	-	-	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	-	-	✗
	Vessel	-	-	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	-	-	✗
	Supply Chain Mgmt./Traceability	✗	-	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	-	-	✗
	Regulatory Reporting	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	Settlement																	
System Wide	Actualization	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	Invoicing	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	Settlements/Reconciliation	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	Taxation	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	AR/AP/Ledger (Gen. or Sub)	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	Currency Conversion	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	Unit Conversion	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	Document Management	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
System Wide	Workflow Management	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	Reporting / Business Intelligence																	
	Canned Reports	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	Ad hoc Reporting	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
	Executive Dashboard	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
System Wide	BI tools	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗

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Allegro

Product:
ION Allegro

ION Allegro's enterprise CTRM software empowers companies that extract, process, market, trade, or consume commodities to make informed decisions and take total control over how their businesses grow. With Allegro, customers get data-driven decision support to better manage position visibility, risk management, controls, and regulatory compliance — in one single solution. Whether an organization is dealing with the explosion of trade volumes, renewables, liberalization, or other market-based changes, Allegro empowers customers to manage and change their businesses for the better.

Deploying Allegro offers customers:

- Management of financial and physical assets in a single solution for the front, middle, and back office
- Matching of their unique business processes with configurable, multi-commodity software
- Automation of confirmations, settlements, and cash flow analysis
- Maximized profitability at every phase of a deal with deal-to-cash functionality
- Process optimization from front- to back-office, minimizing risk, and improving compliance

Allegro empowers customers to make the best decisions with the right data, managing risk across commodities, regions, and entities with the following capabilities:

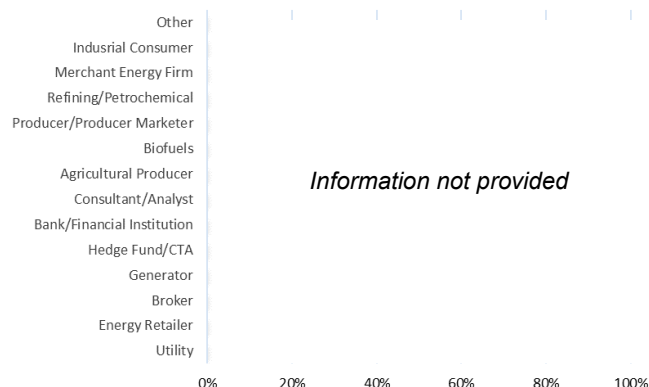
- Real-time position visibility: Management of physical and financial positions on a single, powerful platform that unites information for the front, middle, and back office – all in real time
- Robust risk management: Detailed views of exposure to manage risk correctly, confidently, and with the right data
- Controls: Configures controls to ensure everyone in the organization is observing operating boundaries and rules, from the C-suite down
- Regulatory compliance: Protection from the risk of substantial penalties with controls to identify possible market abuse
- Analytics: Superior quantitative analytics and risk management tools for valuing, modeling, hedging, and optimizing derivatives and physical assets
- Logistics: With advanced analytics, schedulers can optimize logistics through mode and route optimization to drive maximum profitability for their business

Allegro also offers the ION Cloud, the most comprehensive cloud platform for trading, treasury, and risk management. It combines market-leading products with the latest technology and services that provide leaders with unprecedented speed, integration, and real-time risk assessment. Designed specifically for the needs of Allegro's clients, it delivers the market's most complete, functionally robust, and secure enterprise offering.

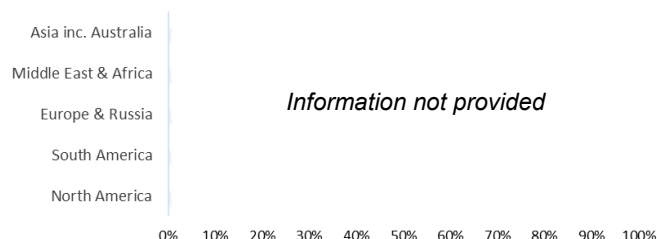
Number of Licensed Client Companies: *Information not provided*

Representative Clients: *Information not provided*

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ On Premises
- ✓ Hosted in Private Cloud
- ✓ Hosted in Public Cloud

Office Locations and Phone:

- ✓ London UK +44 20 7398 0200
- ✓ Singapore +65 6671 9730
- ✓ Tokyo, Japan +81 3 4550 1000
- ✓ Sydney, Australia +61 2 8239 8300
- ✓ Dallas, TX USA +1 214 237 8000

Vendor: **ION**Product Name: **Allegro**Version: **16.145.5.4**

		✓ Functionality is deployed and in production at a client site	○ Not Deployed, but system is capable of providing functionality	✗ System is not currently capable of providing that functionality	- Not Applicable - Functionality not applicable for Commodity													
		ENERGIES						AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Frieght Rates
Function / Feature		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concentrates	Precious	North America	Europe	
Production / Operations	Production Mgmt./Generation	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	○	○	○	○	-	-	-
	Volumetric Management	-	✓	✓	✓	✓	✓	✓	✓	✗	✗	○	○	○	○	-	-	-
	Net Back Pricing	-	✓	✓	✓	✓	○	✓	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✓	✓	-	✗	○	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✓	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	○	○	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-
Front Office / Trading	Quality / Sampling	-	✓	✓	✓	✓	✓	✓	✓	✗	✗	○	○	○	○	-	-	-
	Contract Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓
	Deal Origination	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓
	Credit Tracking	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓
	Curve Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓
	Portfolio Optimization	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	○
	Supply-Demand Optimization	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	○
	Pre-Deal Analytics "what if"	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	○
	Trade Capture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Physical	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓
	Financial	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓
	Exchange	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓
	Deal Types	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Spot & Forwards	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓
	Futures	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓
	Swaps	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓
	Options	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓
	Swaptions	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓
	Transportation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓
	Storage/Inventory	-	✓	✓	✓	○	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	-
Risk Management and Analysis	Complex Pricing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓
	Position Management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Physical	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓
	Financial	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓
	Credit Risk	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓
	Hedge Effectiveness	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓
	Analytics	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Mark-to-Market	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓
	VaR - Monte Carlo	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓
	VaR - Other	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓
	Greeks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓
	PaR/EaR	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	CVaR	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Portfolio Sensitivity Analysis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	○	○	○
Middle Office	Stress Testing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	○
	Simulations	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓
	Fair Value Disclosure	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Vessel Freight Risk	-	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Insurance	-	-	✗	✗	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Inventory Management	○	✓	✓	✓	✓	✓	✓	✓	✗	✗	○	○	○	○	✓	✓	✓
	Scheduling and Logistics	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Power Transmission	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Back Office	Pipeline	-	✓	✓	✓	✓	-	✓	-	-	-	-	-	-	-	-	-	-
	Barge	-	-	✓	✓	✗	✓	✓	✓	○	○	○	○	○	○	-	-	✓
	Rail	-	-	✓	✓	✓	✓	○	✓	○	○	○	○	○	○	-	-	✓
	Truck	-	-	✓	✓	✓	✓	✓	✓	○	○	○	○	○	○	-	-	✓
	Vessel	-	-	✓	✓	✓	✓	✓	✓	○	○	○	○	○	○	-	-	✓
	Supply Chain Mgmt./Traceability	✓	-	✓	✓	✓	✓	✓	✓	○	○	○	○	○	○	-	-	✓
	Regulatory Reporting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Settlement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Actualization	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Invoicing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
System Wide	Settlements/Reconciliation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Taxation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	AR/AP/Ledger (Gen. or Sub)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Currency Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Unit Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Document Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Workflow Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Reporting / Business Intelligence	Reporting / Business Intelligence	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Canned Reports	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Ad hoc Reporting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Executive Dashboard	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	BI tools	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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Product:
ION ASPECT

Companies trading commodities face a range of challenges, including increasing operating costs, fragmented systems, data and processes, and blind spots in the supply chain during movement and storage of products. ION's commodity trading and risk management (CTRM) solution Aspect focus on bunker trading, fuel marketing, oil and petroleum products, LNG, metals and coal, and is quickly implemented to support the physical and financial trade lifecycle and logistics in complex supply chains.

It is the only Software as a Service (SaaS) trade and risk management solution with integrated market data, enabling rapid deployment, controlled costs, and immediate ROI.

Aspect streamlines trade processing, creating multiple benefits for trading companies. It eliminates errors created by reentering trades, and executes end-to-end trade flow automation and seamless data transfer, from deal execution through logistics, settlement to invoicing. The solution is certified by CME and ICE for post-trade capture, creating one point of entry and reducing dependency on end-of-day trade reconciliation.

Functionality includes:

- Trade management: Measure and report on risk, credit, and market exposures. Monitor the value of MTM, cash positions and P&L simultaneously with market fluctuations, and as deals are entered and updated.
- Risk management: Leverage a full spectrum of physical and financial tools to assess price, volume, volatility, quality, delivery, counterparty, credit, and multi-currency exposures. Complete risk, exposure, and VaR reporting.
- Financial management: Gain insight into movements, payments, and costs. Real-time intra-day exposure reporting.
- Physical operations: Track and optimize your supply chain activities, including transportation.
- Trade management: Measure and report on risk, credit, and market exposures. Monitor the value of MTM, cash positions and P&L simultaneously with market fluctuations, and as deals are entered and updated.
- Physical operations: Track and optimize your supply chain activities, including transportation.
- Integrated market data, risk, and operations: Market data and pre-trade analytics as part of its front office modules. Seamless transfer of market prices use to validate trades and update positions.
- Flexibility and fast performance: View P&L, valuation, risk, and attribution data in near real time. Integrate your physical and financial trading operations with straight through processing (STP). Integrate data from other systems. Configure your solution to work the way you want.

ION Aspect's cloud architecture enables quick deployment and configuration, controlled costs, and rapid ROI. ION Aspect supports best-in-class functionality for credit, counterparty, market, and price-related risks for confident decision making. Users get one view of their physical and financial trade cycle.

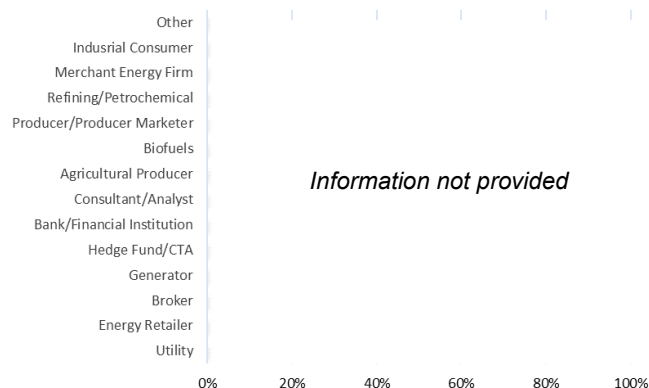
ION Aspect Provides:

- Out-of-the-box, rapid implementation and expedited time to value, spanning days to weeks.
- Real-time P&L, VaR, exposure, and inventory views across your global supply chain.
- High-performance in-memory database runs large volumes of data and instant end-of-day, end-of-year reports.
- Seamless data and application interfacing capabilities for painless integration.
- Unique Market Data component with real-time and historical commodities prices, charts, dynamic excel tools, and news on the same CTRM platform.
- Despite the high level of out of the box content, Aspect provides capabilities that enable swift configuration of custom fields, validations, reports, and workbenches allowing the implementation of tailored client needs.

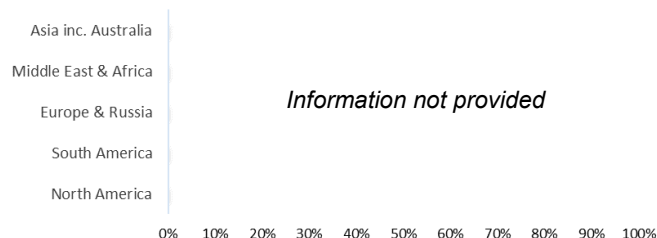
Number of Licensed Client Companies: *Information not provided*

Representative Clients: *Information not provided*

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ SaaS: Multi-tenanted

Office Locations and Phone:

- ✓ London UK +44 20 7398 0200
- ✓ Singapore +65 6671 9730
- ✓ Tokyo, Japan +81 3 4550 1000
- ✓ Sydney, Australia +61 2 8239 8300
- ✓ Dallas, TX USA +1 214 237 8000

Vendor: ION

Product Name: Aspect

Version: NA

		✓ Functionality is deployed and in production at a client site	● Not Deployed, but system is capable of providing functionality	✗ System is not currently capable of providing that functionality	- Not Applicable - Functionality not applicable for Commodity													
		ENERGIES						AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Frieght Rates
Function / Feature		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concentrates	Precious	North America	Europe	
Production / Operations	Production Mgmt./Generation	✗	✗	✓	✓	●	●	●	✓	●	●	●	✓	✓	✓	-	-	-
	Volumetric Management	-	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓	✓	✓	-	-	-
	Net Back Pricing	-	✗	✓	✓	✓	✓	✗	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✗	✗	-	✗	✗	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✗	-	-	✗	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✗	✗	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-
Front Office / Trading	Quality / Sampling	-	●	✓	✓	●	✓	●	✓	✓	✓	✓	✓	●	●	-	-	-
	Contract Management	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗
	Deal Origination	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Credit Tracking	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	●	●
	Curve Management	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	●	●
	Portfolio Optimization	✗	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Supply-Demand Optimization	✗	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Pre-Deal Analytics "what if"	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗
	Trade Capture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Physical	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	●
	Financial	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	●
	Exchange	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Deal Types	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Spot & Forwards	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗
	Futures	✗	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓	✓	✓	✗	✗	●
	Swaps	✗	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓	✓	✓	✗	✗	✓
	Options	✗	✓	✓	✓	✓	✓	●	✓	✓	✓	✓	✓	✓	✓	✗	✗	●
	Swaptions	✗	✗	✗	✗	✗	✗	●	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Transportation	✗	●	✓	✓	●	✓	●	✓	✓	✓	✓	✓	✓	●	✗	✗	✗
	Storage/Inventory	-	●	✓	✓	●	✓	●	✓	✓	✓	✓	✓	✓	●	✗	✗	●
Risk Management and Analysis	Complex Pricing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Position Management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Physical	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	●
	Financial	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	●
	Credit Risk	✗	●	✓	✓	●	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗
	Hedge Effectiveness	✗	✓	✓	✓	●	✓	●	✓	✓	✓	✓	✓	✓	✓	✗	✗	●
	Analytics	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Mark-to-Market	✗	●	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✓
	VaR - Monte Carlo	✗	✗	✗	✗	✗	✗	●	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	VaR - Other	✗	●	✓	✓	✓	✓	●	✓	✓	✓	✓	✓	✓	✓	✗	✗	✓
	Greeks	✗	●	✓	✓	●	✓	●	✓	✓	✓	✓	✓	✓	✓	✗	✗	●
	PaR/EaR	✗	●	✓	✓	●	✓	●	✓	✓	✓	✓	✓	✓	✓	✗	✗	●
	CVaR	✗	●	●	●	●	●	●	●	●	●	●	●	●	●	✗	✗	●
	Portfolio Sensitivity Analysis	✗	●	✓	✓	●	✓	●	✓	✓	✓	✓	✓	✓	✓	✗	✗	✓
Middle Office	Stress Testing	✗	●	✓	✓	●	✓	●	✓	✓	✓	✓	✓	✓	✓	✗	✗	✓
	Simulations	✗	●	✓	✓	●	✓	●	✓	✓	✓	✓	✓	✓	✓	✗	✗	✓
	Fair Value Disclosure	✗	✗	●	●	✗	●	●	●	●	●	●	●	●	●	✗	✗	●
	Vessel Frieght Risk	-	✗	●	●	✗	●	●	●	●	●	●	●	●	●	✗	✗	●
	Insurance	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Inventory Management	✗	●	✓	✓	●	✓	●	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗
	Scheduling and Logistics	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Power Transmission	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Back Office	North America	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✗	✓	✓	●	-	-	-	-	-	-	-	-	-	-	-	-
	Barge	-	-	✓	✓	●	✓	●	✓	✓	✓	✓	✓	✓	●	-	-	-
	Rail	-	-	✓	✓	●	✓	●	✓	✓	✓	✓	✓	✓	●	-	-	-
	Truck	-	-	✓	✓	●	✓	●	✓	✓	✓	✓	✓	✓	●	-	-	-
System Wide	Vessel	-	-	✓	✓	●	✓	●	✓	✓	✓	✓	✓	✓	●	-	-	-
	Supply Chain Mgmt./Traceability	✗	-	✓	✓	●	✓	●	✓	✓	✓	✓	✓	✓	●	-	-	-
	Regulatory Reporting	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Settlement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Actualization	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Invoicing	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Settlements/Reconciliation	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Taxation	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	AR/AP/Ledger (Gen. or Sub)	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Currency Conversion	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
System Wide	Unit Conversion	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Document Management	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Workflow Management	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Reporting / Business Intelligence	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Canned Reports	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Ad hoc Reporting	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
System Wide	Executive Dashboard	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	BI tools	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

ION Commodities

1345 Avenue of the Americas
49th Floor
New York, NY 10105
Phone: 1 212 906 0050

www.iongroup.com/ion-commodities/



Openlink

Product:
ION Openlink

ION Openlink is the most comprehensive and advanced ETRM and CTRM solution for globally integrated enterprises that need to streamline and simplify high-volume complex transactions across commodities, derivatives, and extensive asset classes and require a consolidated physical-to-financial view of positions, risks, and P&L.

The Openlink enterprise platform is an integrated, end-to-end solution that provides better visibility and improves decision-making along the value chain — from lease management and generation to physical movement planning, hedging, inventory management, actualization, and settlement. Openlink helps energy and commodity-intensive businesses understand and manage the increased complexity of their international risk portfolio by providing a powerful and sophisticated risk analytic capabilities.

It covers a comprehensive list of financial and physical instruments from the basic to the most complex, covering all commodities in the market including natural gas, power, crude oil, refined products, base and precious metals, coal, weather derivatives, emissions, and foreign exchange. For companies managing physical assets, it also supports natural gas and power logistics and provides decision-making tools to help optimize generation asset

Deploying Openlink offers customers:

- The broadest asset and commodity coverage in the market
- Flexible and customizable options to meet their needs
- Strong LNG and natural gas trade and scheduling support
- A full range of trading, real-time risk analytics, and operational requirements for physical commodities, financial products, and derivatives
- Process optimization from front- to back-office, minimizing risk, and improving compliance

Openlink is highly scalable, extensible, and customizable. It is a multi-commodity, multi-currency solution built on proven technology and a robust architecture with the following capabilities:

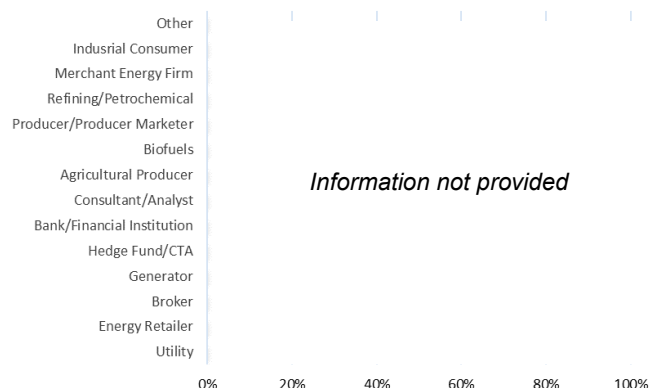
- Trading/analytics: Direct exchange integration lets users enter trades, retrieve and view existing trades, run and view reports, and run ad hoc or on-the-fly simulations and stress-testing scenarios.
- Logistics/scheduling: Use and share one unique database for all modes of transportation (truck, rail, pipeline, vessel, and more).
- Confirmation and document management: Manage all back-office and logistics document generation and tracking in a single flexible solution.
- Credit and risk management: Real-time monitoring of market risk exposures (MTM, Greeks, VaR, P&L, etc.) against limits using standard and user-defined calculations.

Openlink also offers fully integrated treasury capabilities. Openlink's treasury risk management offering supports all common corporate treasury needs. The system can play a strategic role in improving earnings and reducing costs. The solution provides commodity and derivatives price and risk management, hedge effectiveness evaluation and reporting, and cash management in a single solution resulting in improved control, oversight, and centralized transparency in real time.

Number of Licensed Client Companies: *Information not provided*

Representative Clients: *Information not provided*

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ On Premises
- ✓ Hosted in Private Cloud
- ✓ Hosted in Public Cloud

Office Locations and Phone:

- | | |
|---------------------|------------------|
| ✓ London UK | +44 20 7398 0200 |
| ✓ Singapore | +65 6671 9730 |
| ✓ Tokyo, Japan | +81 3 4550 1000 |
| ✓ Sydney, Australia | +61 2 8239 8300 |
| ✓ Dallas, TX USA | +1 214 237 8000 |

Vendor: **ION**Product Name: **Openlink**Version: **V18**

		✓ Functionality is deployed and in production at a client site	● Not Deployed, but system is capable of providing functionality	✗ System is not currently capable of providing that functionality	- Not Applicable - Functionality not applicable for Commodity													
		ENERGIES						AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Frieght Rates
Function / Feature		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concentrates	Precious	North America	Europe	
Production / Operations	Production Mgmt./Generation	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	●	✗	✗	✗	-	-	-
	Volumetric Management	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-
	Net Back Pricing	-	✓	●	●	●	●	✓	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✓	✓	-	●	●	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✓	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	●	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-
Front Office / Trading	Quality / Sampling	-	✓	✓	✓	✓	✓	✓	●	●	●	●	●	●	●	-	-	-
	Contract Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Deal Origination	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Credit Tracking	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Curve Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Portfolio Optimization	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Supply-Demand Optimization	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Pre-Deal Analytics "what if"	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Trade Capture																	
	Physical	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Financial	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Exchange	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Deal Types																	
	Spot & Forwards	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Futures	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Swaps	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Options	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Swaptions	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Transportation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Storage/Inventory	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
	Complex Pricing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Risk Management and Analysis	Position Management																	
	Physical	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Financial	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Credit Risk	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Hedge Effectiveness	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Analytics																	
	Mark-to-Market	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	VaR - Monte Carlo	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	VaR - Other	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Greeks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	PaR/EaR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CVaR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Middle Office	Portfolio Sensitivity Analysis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Stress Testing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Simulations	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Fair Value Disclosure	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Vessel Frieght Risk	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Insurance	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Inventory Management	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Scheduling and Logistics																	
	Power Transmission	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Back Office	Europe	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-
	Barge	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	●	●	-	-	-
	Rail	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	●	●	-	-	-
	Truck	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	●	●	-	-	-
	Vessel	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	●	●	-	-	-
	Supply Chain Mgmt./Traceability	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	●	●	-	-	-
	Regulatory Reporting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Settlement																	
	Actualization	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
System Wide	Invoicing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Settlements/Reconciliation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Taxation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	AR/AP/Ledger (Gen. or Sub)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Currency Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Unit Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Document Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Workflow Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Reporting / Business Intelligence																	
	Canned Reports	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Ad hoc Reporting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Executive Dashboard	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	BI tools	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

ION Commodities

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RightAngle

Product:
ION RightAngle

ION RightAngle is a single, end-to-end E/CTRM solution for regional and global integrated energy and commodity-intensive enterprises that work across the crude oil, refined products, natural gas liquids (NGL), coal, and other liquid and bulk commodity supply chains.

The solution supports front-to-back-office workflows, from physical to financial deal capture for liquid and bulk commodities. Particular strengths of the solution are the deep logistics, inventory management, accounting, and tax capabilities combined with integrated trading/marketing and risk management.

With straight-through-processing (STP) of supply and trading information on a single platform, clients get an aggregated, real-time volumetric and financial view of positions, profitability, and risk. As a result, clients improve their ability to mitigate unwanted risk, improve decision making, and identify opportunity across the supply chain.

The ability to act quickly on that information is just as important. RightAngle integrates trading, risk management, pricing, scheduling, movement actualization, invoicing, and settlement in a single, unified solution helping clients break down information silos, while providing the confidence that each function is viewing and managing the same data.

With its rich functionality and scalable architecture, RightAngle gives clients a 360-degree view of their entire commodity and trading/marketing process:

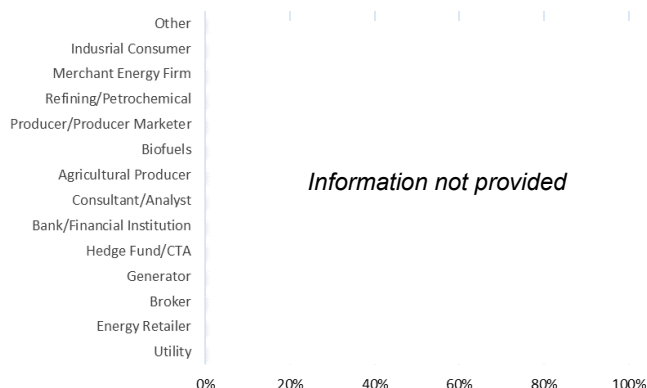
- A panoramic view of the entire supply chain activity
- An integrated asset management solution for fractionator, storage, or pipeline asset owners to manage shipper interaction with a dedicated, integrated web portal
- Pricing: Capture all pricing and cost components required to accurately calculate settlement, including transportation, demurrage, product regrades, logistics costs, and differentials as well as support for rack pricing, invoicing, and integration with terminal automation system.
- Planning and risk management: Calculate mark-to-market, VaR, and Greeks across the portfolio.
- Scheduling: Manage the flow of all scheduling and inventory for all major transportation methods, including truck, rail, vessel voyages, barge, and pipelines.
- Data and reporting: Break down information silos with seamlessly integrated data, with each function viewing and managing the same data.
- Settlement, tax, and accounting: Automate the process of pricing transactions, calculating the related taxes and other costs, creating invoices, applying payments, initiating disbursements and account coding them appropriately.

RightAngle offers a flexible framework to expand or customize the standard market solutions. Delivery options include public cloud or on-premise.

Number of Licensed Client Companies: *Information not provided*

Representative Clients: *Information not provided*

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ On Premises
- ✓ Hosted in Private Cloud
- ✓ Hosted in Public Cloud

Office Locations and Phone:

- | | |
|---------------------|------------------|
| ✓ London UK | +44 20 7398 0200 |
| ✓ Singapore | +65 6671 9730 |
| ✓ Tokyo, Japan | +81 3 4550 1000 |
| ✓ Sydney, Australia | +61 2 8239 8300 |
| ✓ Dallas, TX USA | +1 214 237 8000 |

Vendor: **ION**Product Name: **RightAngle**Version: **S20.1**

✔ Functionality is deployed and in production at a client site			🟡 Not Deployed, but system is capable of providing functionality					✖ System is not currently capable of providing that functionality				- Not Applicable - Functionality not applicable for Commodity							
Function / Feature		ENERGIES							AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Freight Rates
		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concen- trates	Precious	North America	Europe		
Production / Operations	Production Mgmt./Generation	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✖	✖	✖	-	-	-	-
	Volumetric Management	-	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	-	-	-	-
	Net Back Pricing	-	✖	✔	✔	✔	✔	✖	-	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✖	✔	-	✔	✔	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✖	-	-	✖	-	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✖	✖	-	✔	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Quality / Sampling	-	✖	✔	✔	✔	✔	✖	✔	🟡	🟡	🟡	🟡	🟡	✖	-	-	-	-	
Front Office / Trading	Contract Management	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	Deal Origination																		
	Credit Tracking	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	Curve Management	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	Portfolio Optimization	✖	✖	🟡	🟡	🟡	🟡	✖	🟡	🟡	🟡	🟡	🟡	🟡	✖	✖	✖	🟡	🟡
	Supply-Demand Optimization	✖	✖	🟡	🟡	🟡	🟡	✖	🟡	🟡	🟡	🟡	🟡	🟡	✖	✖	✖	🟡	🟡
	Pre-Deal Analytics "what if"	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	🟡
	Trade Capture																		
	Physical	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	Financial	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	Exchange	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	Deal Types																		
	Spot & Forwards	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	Futures	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	🟡
	Swaps	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	Options	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	Swaptions	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	🟡
	Transportation	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	🟡
	Storage/Inventory	-	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	-
Complex Pricing																			
Position Management																			
Physical	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔	
Financial	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔	
Risk Management and Analysis	Credit Risk	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	Hedge Effectiveness	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	Analytics																		
	Mark-to-Market	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	VaR - Monte Carlo	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	VaR - Other	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	Greeks	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	PaR/EaR	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖
	CVaR	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	Portfolio Sensitivity Analysis	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	Stress Testing	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	Simulations	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	Fair Value Disclosure	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	Vessel Freight Risk	-	✖	🟡	🟡	🟡	🟡	✖	🟡	🟡	🟡	🟡	🟡	🟡	✖	✖	✖	🟡	🟡
Insurance	-	-	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	
Middle Office	Inventory Management	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖	✖
	Scheduling and Logistics																		
	Power Transmission	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✖	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✖	✔	✔	✔	-	-	-	-	-	-	-	-	-	-	-	-	-
	Barge	-	-	✔	✔	✔	✔	✖	✔	🟡	🟡	🟡	✔	🟡	✖	-	-	✔	-
	Rail	-	-	✔	✔	✔	✔	✖	✔	🟡	🟡	🟡	✔	🟡	✖	-	-	✔	-
	Truck	-	-	✔	✔	✔	✔	✖	✔	🟡	🟡	🟡	✔	🟡	✖	-	-	✔	-
	Vessel	-	-	✔	✔	✔	✔	✖	✔	🟡	🟡	🟡	✔	🟡	✖	-	-	✔	-
Supply Chain Mgmt./Traceability	✖	-	✔	✔	✔	✔	✖	✔	🟡	🟡	🟡	✔	🟡	✖	-	-	✔	-	
Back Office	Regulatory Reporting	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	Settlement																		
	Actualization	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	Invoicing	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	Settlements/Reconciliation	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	Taxation	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
AR/AP/Ledger (Gen. or Sub)	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔	
System Wide	Currency Conversion	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	Unit Conversion	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	Document Management	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	Workflow Management	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	Reporting / Business Intelligence																		
	Canned Reports	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	Ad hoc Reporting	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
	Executive Dashboard	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔
BI tools	✖	✖	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✖	✖	✖	✔	✔	

ION Commodities

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www.iongroup.com/ion-commodities/



TriplePoint

Product:
ION TriplePoint

Managing a global business across commodities, currencies, markets, and teams can be complex and challenging. You need a solution that lets you take command of your business to make the right decisions at the right time. With ION's commodity trading and risk management (CTRM) TriplePoint, you can take charge of your supply, trading, marketing, procurement, logistics, scheduling, risk management, and accounting, all in one solution. For companies that operate in one or more segments of the energy and commodity global supply chains, including power, gas, bulk, liquid as well as agriculture and packaged commodities, TriplePoint provides full front-to-back office support.

Sophisticated real-time intelligence and automated processes for production, sourcing, procurement, processing, marketing, and distribution allows you the freedom to concentrate on optimizing your business. TriplePoint provides you with complete and accurate data at any moment, so you can make the right decisions about the problems you face every day. It precisely extracts the information necessary to support your processes for commodities management.

Comprehensive risk management: Combine real-time risk metrics such as VaR with sensitivity analysis, market simulations, and stress testing.

Automation of routine tasks: Automate your transactional workflows, like confirming contracts, pricing, scheduling, logistics, and financial settlement.

Regulatory compliance: Get full visibility for internal and regulatory reporting compliance, control, and auditing. Derivative accounting and disclosure reporting

Analytics and decision making: Use advanced business intelligence and analytics, and high-performance data aggregation to make better informed and proactive decisions.

Flexible and fast performance: Integrate physical and financial trading with straight-through processing; import data from other systems and view all critical information in real time.

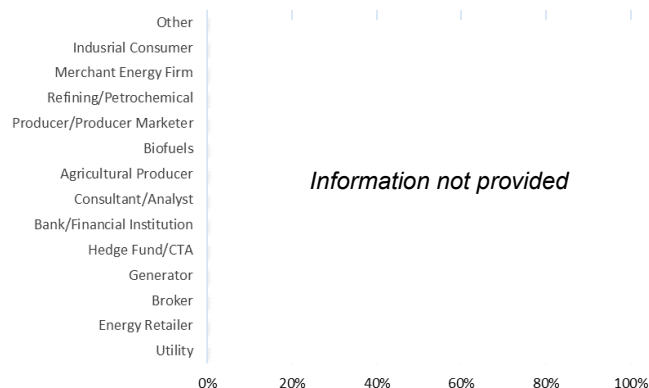
One platform: Manage your market-based supply chains across commodities to optimize trading, procurement, distribution, scheduling, and hedging. Manage the entire business across commodities in one solution.

TriplePoint is a solution with strong agriculture capabilities supporting the robust requirements of high-volume physical and financial trading along the agriculture supply chain. TriplePoint is an excellent choice for international traders and features dynamic reporting and price componentization. In addition, TriplePoint provides dedicated modules designed for coverage and spend management of food and beverage consumer packaged goods (CPG) companies.

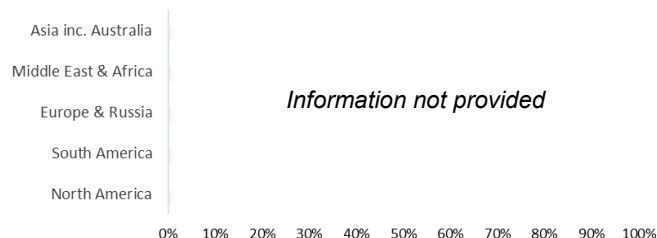
Number of Licensed Client Companies: *Information not provided*

Representative Clients: *Information not provided*

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ SaaS
- ✓ On Premises
- ✓ Hosted in Private Cloud
- ✓ Hosted in Public Cloud

Office Locations and Phone:

- ✓ London UK +44 20 7398 0200
- ✓ Singapore +65 6671 9730
- ✓ Tokyo, Japan +81 3 4550 1000
- ✓ Sydney, Australia +61 2 8239 8300
- ✓ Dallas, TX USA +1 214 237 8000

Vendor: **ION**Product Name: **TriplePoint**Version: **NA**

		✓ Functionality is deployed and in production at a client site	○ Not Deployed, but system is capable of providing functionality	✗ System is not currently capable of providing that functionality	- Not Applicable - Functionality not applicable for Commodity													
		ENERGIES						AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Frieght Rates
Function / Feature		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concen-trates	Precious	North America	Europe	
Production / Operations	Production Mgmt./Generation	✓	✓	✓	✓	✓	○	○	✓	✓	✓	✓	○	○	○	-	-	-
	Volumetric Management	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-
	Net Back Pricing	-	✓	○	○	○	○	○	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✗	○	-	✗	✗	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✓	-	-	○	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	○	○	-	○	-	-	-	-	-	-	-	-	-	-	-	-	-
Front Office / Trading	Quality / Sampling	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	✓	-	-	-
	Contract Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	✓	✓	✓	✓
	Deal Origination	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	✓	✓	✓	✓
	Credit Tracking	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	✓	✓	✓	✓
	Curve Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	✓	✓	✓	✓
	Portfolio Optimization	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Supply-Demand Optimization	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Pre-Deal Analytics "what if"	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	✓	✓	✓	✓
	Trade Capture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Physical	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	✓	✓	✓	✓
	Financial	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	✓	✓	✓	✓
	Exchange	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	✓	✓	✓	✓
	Deal Types	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Spot & Forwards	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Futures	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○
	Swaps	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○
	Options	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○
	Swaptions	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○
	Transportation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	✓	✓	✓	✓
	Storage/Inventory	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	✓	✓	✓	-
Risk Management and Analysis	Complex Pricing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Position Management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Physical	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Financial	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Credit Risk	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Hedge Effectiveness	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	✓	✓	✓	✓
	Analytics	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Mark-to-Market	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	✓	✓	✓	✓
	VaR - Monte Carlo	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	✓	✓	✓	✓
	VaR - Other	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	✓	✓	✓	✓
	Greeks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	✓	✓	✓	✓
	PaR/EaR	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	CVaR	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Portfolio Sensitivity Analysis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	✓	✓	✓	✓
Middle Office	Stress Testing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	✓	✓	✓	✓
	Simulations	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	✓	✓	✓	✓
	Fair Value Disclosure	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	✓	✓	✓	✓
	Vessel Freight Risk	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	✓	✓	✓	✓
	Insurance	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Inventory Management	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Scheduling and Logistics	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Power Transmission	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Back Office	Pipeline	-	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-
	Barge	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	-	-	-
	Rail	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	-	-	-
	Truck	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	-	-	-
	Vessel	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	-	-	-
	Supply Chain Mgmt./Traceability	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	-	-	-
	Regulatory Reporting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
System Wide	Settlement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Actualization	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Invoicing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Settlements/Reconciliation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Taxation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	AR/AP/Ledger (Gen. or Sub)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Currency Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Unit Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Document Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Workflow Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
System Wide	Reporting / Business Intelligence	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Canned Reports	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Ad hoc Reporting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Executive Dashboard	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
System Wide	BI tools	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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Lacima

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Australia
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www.lacima.com



Product:
Lacima Trader & Analytics

Lacima is a multi-award winning specialist provider of software and advisory services dedicated to trading, valuation, optimization and risk management for global energy and commodities markets. Its solutions help organisations to maximize their profit potential and make better informed decisions by providing tools that yield more accurate valuations, hedging analysis and risk exposure analysis for portfolios of financial contracts and physical assets.

For 8 consecutive years, Lacima has been recognised by market players in the Energy Risk software rankings as being the #1 analytics vendor globally. Lacima has been named in the Chartis RiskTech100 for the past three years and has won the Risk Market Technology Awards for Pricing and Analytics - Commodities for the last two years. Lacima has also been named by Energy Risk as Analytics Provider of the Year (2015), Technology House of the Year (2013) and Advisory Firm of the Year (2008).

Lacima Analytics is the only commercially available single application for valuation, optimization and risk management for multi-commodity/ multi-geography and/or multi-asset portfolios. The Lacima Trader suite of products for Front Office are designed to work as stand-alone trading, structuring and valuation tools capable of transparent drill down to detailed outputs and value drivers. The Lacima Trader products use the same underlying mathematical models and methodologies used by Lacima Analytics allowing portfolio level analysis and a consistent approach between trading and risk management.

Clients of Lacima's software and services include trading, structuring, origination, valuation and risk teams in vertically integrated energy companies, energy retailers, financial institutions and large energy consumers in Europe, North America and Australasia.

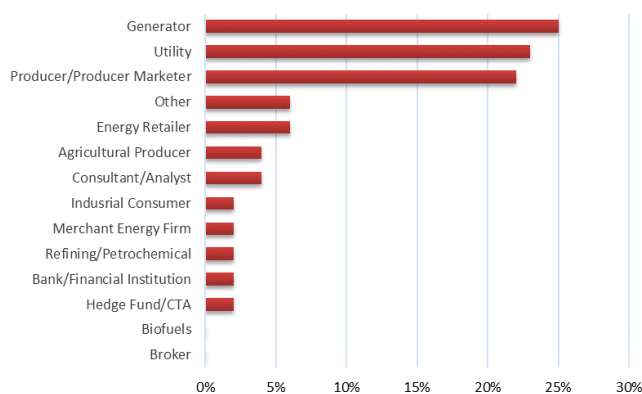
Lacima's internationally acclaimed approach stems from leading academic work in energy risk and valuation modelling by Lacima founders Dr Les Clewlow and Dr Chris Strickland. The models and methodologies from their published works form the foundation of, not only Lacima's software and services, but also many in-house development projects worldwide.

For further information, visit www.lacimagroup.com or email info@lacimagroup.com.

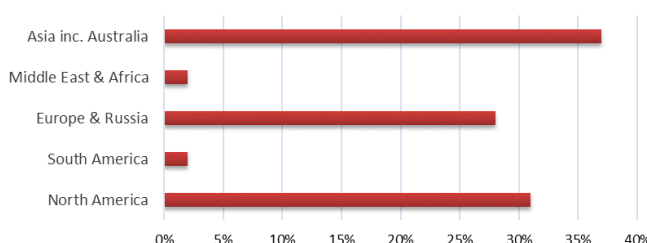
Number of Licensed Client Companies: 51

Representative Clients: Saudi Aramco Trading; ECOPEL; Sembcorp; SOCAR Trading; Woodside Energy; Scottish and Southern Energy

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ Traditional License
- ✓ Term or Perpetual License

Office Locations and Phone:

- ✓ UK 44 20 3880 1488
- ✓ US 303 926 4940

Vendor: **Lacima**Product Name: **Lacima Trader & Analytics**Version: **v10**

		✓ Functionality is deployed and in production at a client site	● Not Deployed, but system is capable of providing functionality	✗ System is not currently capable of providing that functionality	- Not Applicable - Functionality not applicable for Commodity													
		ENERGIES						AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Frieght Rates
Function / Feature		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concen- trates	Precious	North America	Europe	
Production / Operations	Production Mgmt./Generation	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Volumetric Management	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Net Back Pricing	-	✗	✗	✗	✗	✗	✗	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✗	✗	-	✗	✗	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✗	-	-	✗	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✗	✗	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-
Front Office / Trading	Quality / Sampling	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Contract Management	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Deal Origination	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Credit Tracking	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Curve Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Portfolio Optimization	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Supply-Demand Optimization	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Pre-Deal Analytics "what if"	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Trade Capture																	
	Physical	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Financial	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Exchange	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Deal Types																	
	Spot & Forwards	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Futures	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Swaps	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Options	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Swaptions	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Transportation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Storage/Inventory	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
	Complex Pricing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Position Management																	
	Physical	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Financial	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Risk Management and Analysis	Credit Risk	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Hedge Effectiveness	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Analytics																	
	Mark-to-Market	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	VaR - Monte Carlo	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	VaR - Other	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Greeks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	PaR/EaR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CVaR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Portfolio Sensitivity Analysis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Stress Testing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Simulations	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Fair Value Disclosure	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Vessel Freight Risk	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Middle Office	Insurance	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Inventory Management	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Scheduling and Logistics																	
	Power Transmission	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✗	✗	✗	✗	✗	✗	-	-	-	-	-	-	-	-	-	-
	Barge	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Rail	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Truck	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
Back Office	Vessel	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Supply Chain Mgmt./Traceability	✗	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Regulatory Reporting	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Settlement																	
	Actualization	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Invoicing	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Settlements/Reconciliation	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
System Wide	Taxation	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	AR/AP/Ledger (Gen. or Sub)	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Currency Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Unit Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Document Management	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Workflow Management	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Reporting / Business Intelligence																	
	Canned Reports	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Ad hoc Reporting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Executive Dashboard	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	BI tools	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

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Paragon, an MCG Company

20329 State Hwy 249
Suite 100
Houston, TX 77070
Phone:

www.mcgenergy.com



Product:
**Energy Risk Management
(ERM)**

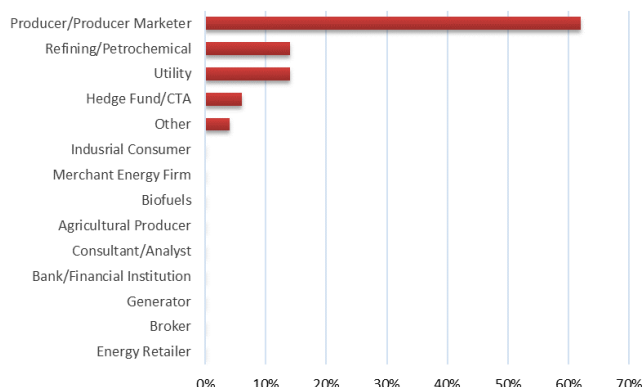
MCG's Energy Risk Management (ERM) provides a comprehensive real time picture of complex commodity portfolios, risk metrics and limits that ensure compliance with your organization's risk policy.

ERM enables traders and utility merchants to quantify and manage forward exposure with a rich set of reporting and risk metrics, custom reports and workflows that business analysts can use without programming knowledge or assistance.

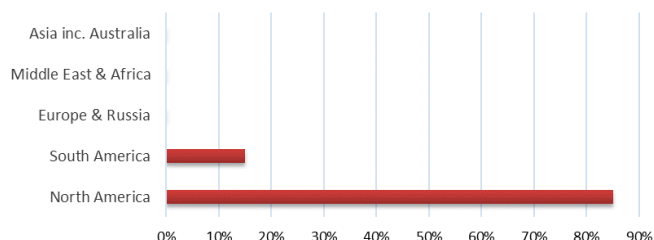
Number of Licensed Client Companies: *Information not provided*

Representative Clients: Motiva Enterprises, LLC; Avangrid Renewables; Citadel; ARM Energy Group; Southern Company; First Energy

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ Traditional License
- ✓ SaaS: Multi-Tenanted
- ✓ Hosted in Private Cloud
- ✓ Hosted in Public Cloud

Office Locations and Phone:

- ✓ Minneapolis MN +1 612 376 7757

Vendor: **Paragon, an MCG Company**Product Name: **Energy Risk Management (ERM)**Version: **na**

		✓ Functionality is deployed and in production at a client site	● Not Deployed, but system is capable of providing functionality	✗ System is not currently capable of providing that functionality	- Not Applicable - Functionality not applicable for Commodity													
		ENERGIES						AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Freight Rates
Function / Feature		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concentrates	Precious	North America	Europe	
Production / Operations	Production Mgmt./Generation	✓	✓	✓	✓	✓	✓	✓	●	●	●	●	●	●	●	-	-	-
	Volumetric Management	-	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Net Back Pricing	-	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✓	✓	-	✓	✓	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✗	-	-	✗	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✓	✓	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-
Front Office / Trading	Quality / Sampling	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Contract Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Deal Origination	✓	✓	✓	✓	✓	✓	✓	●	●	●	●	●	●	●	✓	✓	✗
	Credit Tracking	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Curve Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Portfolio Optimization	✓	✓	✓	✓	✓	✓	✓	●	●	●	●	●	●	●	✓	✓	✗
	Supply-Demand Optimization	✓	✓	✓	✓	✓	✓	✓	●	●	●	●	●	●	●	✓	✓	✗
	Pre-Deal Analytics "what if"	✓	✓	✓	✓	✓	✓	✓	●	●	●	●	●	●	●	✓	✓	✗
	Trade Capture																	
	Physical	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗
	Financial	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗
	Exchange	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗
	Deal Types																	
	Spot & Forwards	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗
	Futures	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗
	Swaps	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗
	Options	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗
	Swaptions	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗
	Transportation	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗
	Storage/Inventory	-	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✓	✗	-
	Complex Pricing	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗
	Position Management																	
	Physical	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Financial	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Risk Management and Analysis	Credit Risk	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Hedge Effectiveness	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Analytics																	
	Mark-to-Market	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	VaR - Monte Carlo	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	VaR - Other	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Greeks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	PaR/EaR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CVaR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Portfolio Sensitivity Analysis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Stress Testing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Simulations	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Middle Office	Fair Value Disclosure	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Vessel Freight Risk	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Insurance	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Inventory Management	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗
	Scheduling and Logistics																	
	Power Transmission	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-
	Barge	-	-	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	-	-	✓
Back Office	Rail	-	-	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	-	-	✓
	Truck	-	-	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	-	-	✓
	Vessel	-	-	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	-	-	✓
	Supply Chain Mgmt./Traceability	✓	-	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	-	-	✓
	Regulatory Reporting	✓	✓	✓	✓	✓	✓	✓	●	●	●	●	●	●	●	✓	✗	✗
	Settlement																	
	Actualization	✓	✓	✓	✓	✓	✓	✓	●	●	●	●	●	●	●	✓	✗	✗
System Wide	Invoicing	✓	✓	✓	✓	✓	✓	✓	●	●	●	●	●	●	●	✓	✗	✗
	Settlements/Reconciliation	✓	✓	✓	✓	✓	✓	✓	●	●	●	●	●	●	●	✓	✗	✗
	Taxation	✓	✓	✓	✓	✓	✓	✓	●	●	●	●	●	●	●	✓	✗	✗
	AR/AP/Ledger (Gen. or Sub)	✓	✓	✓	✓	✓	✓	✓	●	●	●	●	●	●	●	✓	✗	✗
	Currency Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Unit Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Document Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Workflow Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Reporting / Business Intelligence																	
	Canned Reports	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Ad hoc Reporting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Executive Dashboard	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	BI tools	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗

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Molecule Software

3262 Westheimer Road
Suite 887
Houston TX USA 77098
Phone: +1 832 464 4037

www.molecule.io



Product:
Molecule

Molecule lets risk and operations managers at commodities trading companies go home earlier, by automating routine tasks and complex calculations. It is next-generation P&L, near-time VaR, position, and risk analytics software for any company that trades commodities. The software is designed for electricity, natural gas, crude, liquids, metals, ags, softs, and FX options/futures. Many customers use Molecule as the central hub of their CTRM network.

Molecule uses the latest enterprise software technology to make the risk system light, fast, and easy-to-use – a first in the industry. The company was started with the idea that multi-million-dollar technology should be more awesome than the 99-cent apps you use on your phone.

As a cloud-native product, customers get more data security and reliability while enjoying a SaaS pricing model and regular product upgrades with no interruption to service.

Integrations can be completed in 90 days or less – from start-to-finish. There are no additional integration fees required to use Molecule.

Once up and running on Molecule, customers have access to:

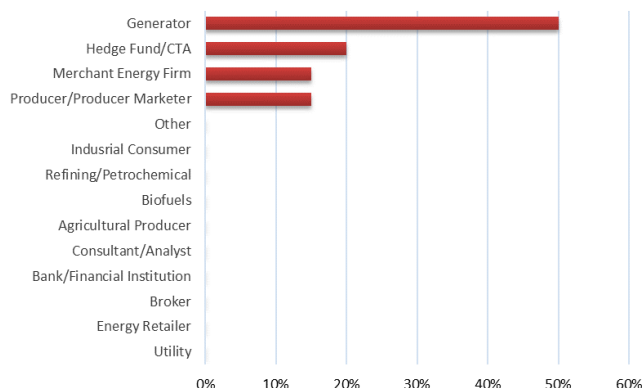
- Automatic deal capture
- Automatic market data
- Automatic position, P&L, near-time VaR, and risk
- Advanced and custom reporting with an embedded BI tool
- Automatic FCM reconciliation
- ISO connectivity for FTRs & virtuals
- Connections to multiple exchanges and market data providers
- Fund allocations

Based in Houston, Texas, the Molecule team serves IPPs, hedge funds, energy marketers, and advisors, and Fortune 100 energy companies in North America and worldwide.

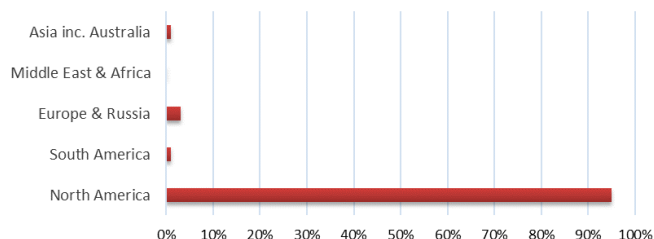
Number of Licensed Client Companies: *Information not provided*

Representative Clients: *Information not provided*

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ SaaS: Multi-Tenanted

Office Locations and Phone:

- ✓ Houston TX USA +1 832 464 4037

Vendor: **Molecule Software**Product Name: **Molecule**Version: **200**

		✓ Functionality is deployed and in production at a client site	● Not Deployed, but system is capable of providing functionality	✗ System is not currently capable of providing that functionality	- Not Applicable - Functionality not applicable for Commodity													
		ENERGIES						AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Freight Rates
Function / Feature		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concentrates	Precious	North America	Europe	
Production / Operations	Production Mgmt./Generation	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Volumetric Management	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Net Back Pricing	-	✗	✗	✗	✗	✗	✗	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✗	✗	-	✗	✗	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✗	-	-	✗	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✗	✗	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-
Front Office / Trading	Quality / Sampling	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Contract Management	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Deal Origination	✓	✓	✓	✓	✓	●	●	✓	●	●	●	●	●	●	●	●	✗
	Credit Tracking	✓	✓	✓	✓	✓	●	●	✓	●	●	●	●	●	●	●	●	✗
	Curve Management	✓	✓	✓	✓	✓	●	●	✓	●	●	●	●	●	●	●	●	✗
	Portfolio Optimization	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Supply-Demand Optimization	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Pre-Deal Analytics "what if"	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Trade Capture																	
	Physical	✓	✓	✓	✓	✓	●	●	✓	●	●	●	●	●	●	✓	●	✗
	Financial	✓	✓	✓	✓	✓	●	●	✓	●	●	●	●	●	●	✓	●	✗
	Exchange	✓	✓	✓	✓	✓	●	●	✓	●	●	●	●	●	●	✓	●	✗
	Deal Types																	
	Spot & Forwards	✓	✓	✓	✓	✓	●	●	✓	●	●	●	●	●	●	✓	●	✗
	Futures	✓	✓	✓	✓	✓	●	●	✓	●	●	●	●	●	●	✓	●	✗
	Swaps	✓	✓	✓	✓	✓	●	●	✓	●	●	●	●	●	●	✓	●	✗
	Options	✓	✓	✓	✓	✓	●	●	✓	●	●	●	●	●	●	✓	●	✗
	Swaptions	✓	✓	✓	✓	✓	●	●	✓	●	●	●	●	●	●	✓	●	✗
	Transportation	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Storage/Inventory	-	●	●	●	●	●	●	●	●	●	●	●	●	●	✓	●	-
	Complex Pricing	●	✓	✓	✓	✓	●	●	✓	●	●	●	●	●	●	●	●	✗
	Position Management																	
	Physical	✓	✓	✓	✓	✓	●	●	✓	●	●	●	●	●	●	✓	●	✗
	Financial	✓	✓	✓	✓	✓	●	●	✓	●	●	●	●	●	●	✓	●	✗
Risk Management and Analysis	Credit Risk	✓	●	✓	✓	●	●	●	●	●	●	●	●	●	●	●	●	✗
	Hedge Effectiveness	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	✗
	Analytics																	
	Mark-to-Market	✓	✓	✓	✓	✓	●	●	●	●	●	●	●	●	●	✓	●	✗
	VaR - Monte Carlo	✓	✓	✓	✓	✓	●	●	●	●	●	●	●	●	●	✓	●	✗
	VaR - Other	✓	✓	✓	✓	✓	●	●	●	●	●	●	●	●	●	✓	●	✗
	Greeks	✓	✓	✓	✓	✓	●	●	●	●	●	●	●	●	●	✓	●	✗
	PaR/EaR	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	CVaR	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Portfolio Sensitivity Analysis	✓	✓	✓	✓	✓	●	●	●	●	●	●	●	●	●	●	●	✗
	Stress Testing	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Simulations	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Fair Value Disclosure	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Middle Office	Vessel Freight Risk	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Insurance	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Inventory Management	●	●	●	●	●	●	●	●	●	●	●	●	●	●	✓	●	✗
	Scheduling and Logistics																	
	Power Transmission	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✗	✗	✗	✗	-	-	-	-	-	-	-	-	-	-	-	-
	Barge	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
Back Office	Rail	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Truck	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Vessel	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Supply Chain Mgmt./Traceability	✗	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Regulatory Reporting	●	✓	✓	✓	●	●	●	●	●	●	●	●	●	●	●	●	✗
	Settlement																	
	Actualization	●	✓	✓	●	●	●	●	●	●	●	●	●	●	●	●	●	✗
System Wide	Invoicing	●	✓	✓	✓	✓	●	●	✓	●	●	●	●	●	●	✓	●	✗
	Settlements/Reconciliation	✓	✓	✓	✓	✓	●	●	✓	●	●	●	●	●	●	✓	●	✗
	Taxation	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	AR/AP/Ledger (Gen. or Sub)	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Currency Conversion	✓	✓	✓	✓	✓	●	●	✓	●	●	●	●	●	●	●	●	✗
	Unit Conversion	✓	✓	✓	✓	✓	●	●	✓	●	●	●	●	●	●	✓	●	✗
	Document Management	✓	✓	✓	✓	✓	●	●	✓	●	●	●	●	●	●	●	●	✗
	Workflow Management	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Reporting / Business Intelligence																	
	Canned Reports	✓	✓	✓	✓	✓	●	●	✓	●	●	●	●	●	●	●	●	✗
	Ad hoc Reporting	✓	✓	✓	✓	✓	●	●	✓	●	●	●	●	●	●	●	●	✗
	Executive Dashboard	✓	✓	✓	✓	✓	●	●	✓	●	●	●	●	●	●	●	●	✗
	BI tools	✓	✓	✓	✓	✓	●	●	✓	●	●	●	●	●	●	●	●	✗

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OATI

3660 Technology Drive NE
Minneapolis, MN 55418
USA
Phone: 763 201 2000

www.oati.net



Product:
webTrader / webCTRM

OATI is a leading provider of Commodity Trading and Risk Management products and services. With more than 1,400 energy industry customers, OATI successfully deploys large, complicated, and diverse mission-critical applications committed to industry standards and stringent NERC CIP guidelines. In the CTRM space, OATI serves trading entities, investment banks, hedge funds, and retail utilities.

The OATI webCTRM and webTrader are designed for asset-centric and trading focused companies, capturing physical and financial transactions, modeling and valuing assets, and supporting operations and settlement processes. With Real-Time data management and all necessary front, mid, and back office functions across multiple commodities, OATI's solution provides cutting-edge CTRM functionality, rich in features and strong in performance.

OATI's CTRM products are organically developed and therefore share common technology and native integration. This organic build has distinct advantages that include:

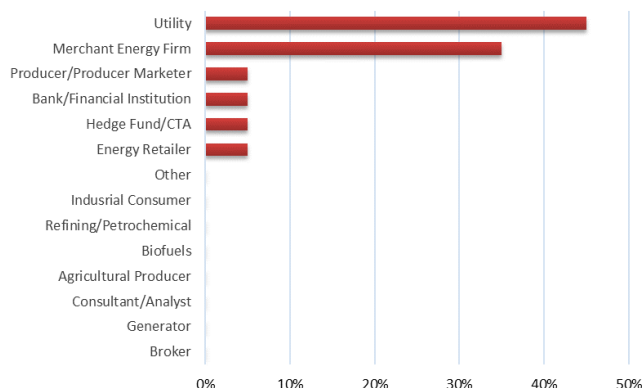
- Similar look and feel across modules
- One vendor to contact for all issues and questions
- No 3rd party integration costs
- Secure and controlled code sets

OATI's high-availability Private Cloud consists of a FedRAMP Ready Infrastructure. This infrastructure is designed to be highly scalable in terms of transaction volume, interface growth, data transfer, number of users, and the number of modules.

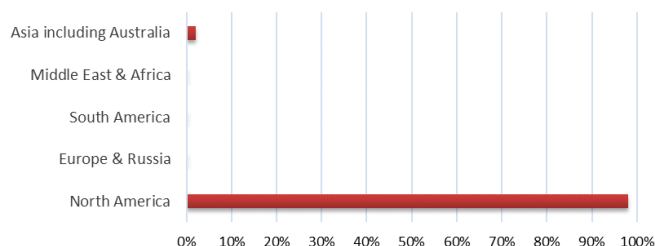
Number of Licensed Client Companies: 82

Representative Clients: Occidental Petroleum; Arizona Public Service; Seattle City & Light

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ Traditional License
- ✓ SaaS: Multi-Tenanted

Office Locations and Phone:

- ✓ United States 763 201 2000

Vendor: **OATI**Product Name: **webTrader / webCTRM**Version: **9.x**

		✓ Functionality is deployed and in production at a client site	○ Not Deployed, but system is capable of providing functionality	✗ System is not currently capable of providing that functionality	- Not Applicable - Functionality not applicable for Commodity													
		ENERGIES						AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Frieght Rates
Function / Feature		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concen-trates	Precious	North America	Europe	
Production / Operations	Production Mgmt./Generation	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Volumetric Management	-	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Net Back Pricing	-	✓	✗	✗	✗	✗	✗	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✓	✗	-	✗	✗	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✓	-	-	✗	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✓	✓	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-
Front Office / Trading	Quality / Sampling	-	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Contract Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Deal Origination	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Credit Tracking	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Curve Management	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Portfolio Optimization	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Supply-Demand Optimization	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Pre-Deal Analytics "what if"	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Trade Capture																	
	Physical	✓	✓	✗	✗	✗	○	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Financial	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Exchange	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Deal Types																	
	Spot & Forwards	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Futures	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Swaps	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Options	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Swaptions	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Transportation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Storage/Inventory	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Complex Pricing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
Risk Management and Analysis	Position Management																	
	Physical	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Financial	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Credit Risk	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Hedge Effectiveness	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Analytics																	
	Mark-to-Market	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	VaR - Monte Carlo	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	VaR - Other	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Greeks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	PaR/EaR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	CVaR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Portfolio Sensitivity Analysis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Stress Testing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
Middle Office	Simulations	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Fair Value Disclosure	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Vessel Frieght Risk	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Insurance	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Inventory Management	✓	✓	✗	✗	✗	○	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Scheduling and Logistics																	
	Power Transmission	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✓	-	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-
Back Office	Barge	-	-	✗	✗	✗	○	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Rail	-	-	✗	✗	✗	○	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Truck	-	-	✗	✗	✗	○	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Vessel	-	-	✗	✗	✗	○	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Supply Chain Mgmt./Traceability	✓	-	✗	✗	✗	○	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Regulatory Reporting	✓	✓	✗	✗	✗	○	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
System Wide	Settlement																	
	Actualization	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Invoicing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Settlements/Reconciliation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Taxation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	AR/AP/Ledger (Gen. or Sub)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Currency Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Unit Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Document Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Workflow Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
System Wide	Reporting / Business Intelligence																	
	Canned Reports	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Ad hoc Reporting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Executive Dashboard	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
System Wide	BI tools	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗

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PCI (Power Costs Inc.)

301 David L. Boren Blvd
Suite 2000
Norman Ok 73072 USA
Phone: 1 405 447 6933

www.powercosts.com



Product:
PCI Energy Platform

PCI is the leading, worldwide provider of enterprise software, superior customer support, and value-added services to energy market participants. The PCI Platform is a one-stop software solution for multiple companies including Utilities (investor-owned, public power and cooperative), federal power administrations, independent power producers and energy marketers/traders. More than half of all the power generated in North America is optimized using the PCI Platform and nearly 70% of Fortune 500 Utilities are clients who reply. The firm is privately held and based in Norman (OK) with regional offices in Houston (TX), Raleigh (NC) and Mexico City.

The PCI ETRM platform supports the 'end-to-end' workflow - both inside and outside of ISO-controlled markets and, its capabilities have steadily expanded in collaboration with customers to address comprehensive functionality to support power trading and fuels management. Key ETRM features such as deal capture, position management, risk management/analytics, gas/power scheduling and settlements are seamlessly incorporated in the platform. Breadth of PCI's ETRM has grown tremendously to include built-in connections to all ISOs/RTOs/TSOs (including those in Canada and Mexico), as well as to CME, ICE, NASB, OASIS and E-Tagging.

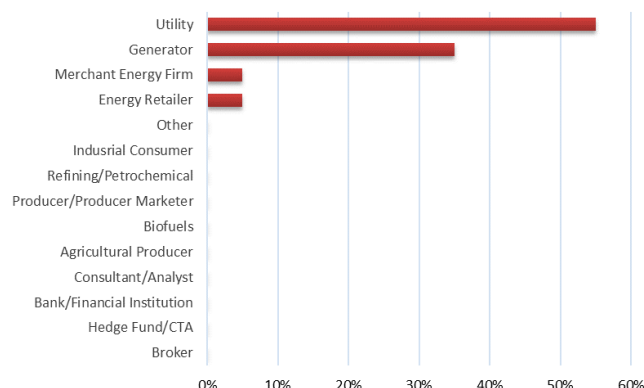
The PCI team has instituted a unique approach to developing its ETRM platform that is based on a fully integrated, 360° perspective that has resulted in a singular solution for most (if not all) commercial operations, including C&I retail, trading and logistics requirements. Crucially, it is part of an overarching enterprise software platform that provides a broad array of very robust capabilities to address needs spanning from the EMS/SCADA function through Enterprise Resource Planning (ERP). Further, PCI's ETRM not only addresses the wide-ranging needs of energy companies in North America, but its application is being extended for implementation in other international markets starting with Australia and Europe.

With rapid deployment features the PCI ETRM solution can be deployed as a secure, cloud hosted application or as an on-premise solution. PCI provides 24x7 customer support to clients for mission critical operations of today's energy trading.

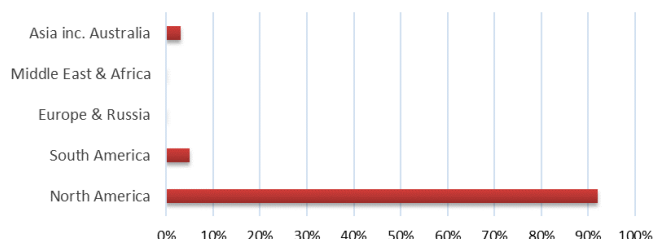
Number of Licensed Client Companies: 92

Representative Clients: Alliant Energy; CPS Energy; Tacoma Power; RWE; CFE-Mexico; Colorado Springs Utilities

Customer Distribution by Type



Customer Distribution by Geography





































































































































































































































































































































































Delivery Methods:

- ✓ Traditional License
- ✓ SaaS: Multi-Tenanted
- ✓ Hosted in Private Cloud
- ✓ Hosted in Public Cloud

Office Locations and Phone:

- ✓ Norman, OK, USA +1 405 747 0877
- ✓ Houston TX, USA +1 713 626 3399
- ✓ Mexico City, Mexico +52 81 5351 1614

Vendor: **PCI (Power Costs Inc.)**Product Name: **PCI Energy Platform**Version: **20.2**

 Functionality is deployed and in production at a client site		 Not Deployed, but system is capable of providing functionality							 System is not currently capable of providing that functionality				- Not Applicable - Functionality not applicable for Commodity							
Function / Feature		ENERGIES							AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Freight Rates	
		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concentrates	Precious	North America	Europe			
Production / Operations	Production Mgmt./Generation																-	-	-	-
	Volumetric Management	-															-	-	-	-
	Net Back Pricing	-								-	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-			-			-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-		-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.			-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Quality / Sampling	-															-	-	-	-	
Front Office / Trading	Contract Management																			
	Deal Origination																			
	Credit Tracking																			
	Curve Management																			
	Portfolio Optimization																			
	Supply-Demand Optimization																			
	Pre-Deal Analytics "what if"																			
	Trade Capture																			
	Physical																			
	Financial																			
	Exchange																			
	Deal Types																			
	Spot & Forwards																			
	Futures																			
	Swaps																			
	Options																			
	Swaptions																			
	Transportation						 </													

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Pioneer Solutions

7400 E Orchard Rd.
Suite 170 S
Greenwood Village, CO 80111
Phone: 303 758 3780

www.pioneersolutionsglobal.com



Product:
TRMTracker

Pioneer Solutions is a global provider of award-winning C/ETRM, environmental management and financial and regulatory compliance solutions. Since 2003, Pioneer has been serving some of the largest energy companies, utilities and midstream producers in the US and Europe.

Pioneer's innovative and flexible solutions have been organically built for rapid implementation and superior services at an overall lower cost of ownership. Pioneer's suite of ETRM solutions are based on its web based FARRMS platform and offer comprehensive front, middle, and back office process management for both physical and financial trades of all asset classes and commodity types.

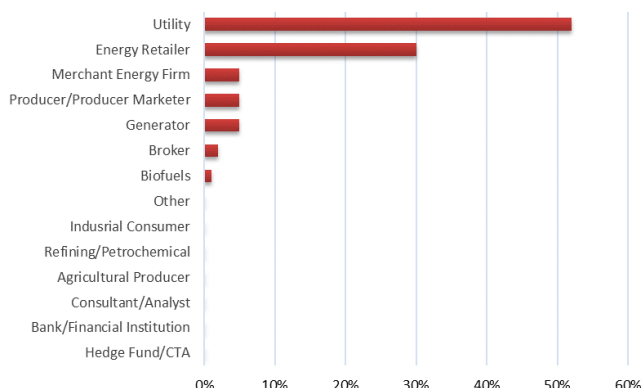
Developed from the back to the front, resulting in industry-leading data processing and reporting capability, Pioneer's modern easy-to-use applications deliver ready "out-of-the-box" or tailored functionality designed for ease of implementation and integration with existing systems.

With a user-configurable environment for less reliance on vendor services, and with deployment options including a cloud-based Software-as-a-Service offering via www.trmtracker.com, Pioneer offers a fresh alternative to legacy C/ETRM systems.

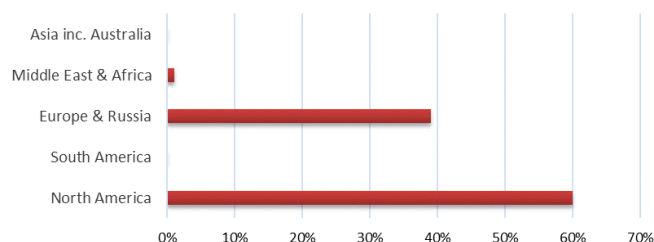
Number of Licensed Client Companies: *Information not provided*

Representative Clients: Xcel Energy; PNM; Consumers Energy; Essent; RWE; ACT Commodities

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ Traditional License
- ✓ SaaS: Multi-Tenanted
- ✓ Hosted in Private Cloud
- ✓ Hosted in Public Cloud

Office Locations and Phone:

- ✓ Netherlands, Rotterdam +31 6 832 094 04
- ✓ Denver, CO, USA +1 303 758 3780

Vendor: **Pioneer Solutions**Product Name: **TRMTracker**Version: **5**

		✓ Functionality is deployed and in production at a client site	○ Not Deployed, but system is capable of providing functionality	✗ System is not currently capable of providing that functionality	- Not Applicable - Functionality not applicable for Commodity													
		ENERGIES						AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Frieght Rates
Function / Feature		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concentrates	Precious	North America	Europe	
Production / Operations	Production Mgmt./Generation	✓	✓	✓	✓	✓	○	○	✓	○	○	○	○	○	✗	-	-	-
	Volumetric Management	-	✓	✓	✓	✓	○	✓	✓	○	○	✓	○	○	✗	-	-	-
	Net Back Pricing	-	✓	✓	✓	✓	○	○	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✓	✓	-	✓	✓	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✓	-	-	○	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	✓	○	-	✗	-	-	-	-	-	-	-	-	-	-	-	-	-
Front Office / Trading	Quality / Sampling	-	○	○	○	○	○	○	✓	○	○	✓	✓	○	✗	-	-	-
	Contract Management	✓	✓	✓	✓	✓	✓	✓	✓	○	○	✓	✓	○	✗	✓	✓	○
	Deal Origination	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Credit Tracking	✓	✓	✓	✓	✓	✓	✓	✓	○	○	✓	✓	○	✗	✓	✓	○
	Curve Management	✓	✓	✓	✓	✓	✓	✓	✓	○	○	✓	✓	○	✗	✓	✓	○
	Portfolio Optimization	○	○	○	○	○	○	○	○	○	○	○	○	○	✗	✓	✓	○
	Supply-Demand Optimization	✓	✓	✓	✓	○	○	✓	○	○	○	○	○	○	✗	✓	✓	○
	Pre-Deal Analytics "what if"	✓	✓	✓	✓	○	○	✓	✓	○	○	✓	✓	○	✗	✓	✓	○
	Trade Capture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Physical	✓	✓	✓	✓	✓	✓	✓	✓	○	○	✓	✓	○	✗	✓	✓	○
	Financial	✓	✓	✓	✓	✓	✓	✓	✓	○	○	✓	✓	○	✗	✓	✓	○
	Exchange	✓	✓	✓	✓	✓	✓	✓	✓	○	○	✓	✓	○	✗	✓	✓	○
	Deal Types	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Spot & Forwards	✓	✓	✓	✓	✓	○	✓	○	○	○	✓	✓	○	✗	✓	✓	○
	Futures	✓	✓	✓	✓	✓	○	✓	✓	○	○	✓	✓	○	✗	✓	✓	○
	Swaps	✓	✓	✓	✓	✓	○	○	✓	○	○	✓	✓	○	✗	✓	✓	○
	Options	✓	✓	✓	✓	✓	○	○	✓	○	○	✓	✓	○	✗	✓	✓	○
	Swaptions	✓	✓	✓	✓	✓	○	○	✓	○	○	✓	✓	○	✗	✓	✓	○
	Transportation	-	✓	✓	✓	✓	○	○	✓	○	○	✓	✓	○	✗	✓	✓	○
	Storage/Inventory	-	✓	✓	✓	✓	○	○	✓	○	○	✓	✓	○	✗	✓	✓	○
Risk Management and Analysis	Complex Pricing	✓	✓	✓	✓	✓	○	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Position Management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Physical	✓	✓	✓	✓	✓	○	✓	✓	○	○	✓	✓	○	✗	✓	✓	○
	Financial	✓	✓	✓	✓	✓	✓	✓	✓	○	○	✓	✓	○	✗	✓	✓	○
	Credit Risk	✓	✓	✓	✓	✓	✓	✓	✓	○	○	✓	✓	○	✗	✓	✓	○
	Hedge Effectiveness	✓	✓	✓	✓	✓	○	✓	✓	○	○	○	○	○	✗	✓	✓	○
	Analytics	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Mark-to-Market	✓	✓	✓	✓	✓	○	✓	✓	○	○	✓	✓	○	✗	✓	✓	○
	VaR - Monte Carlo	✓	✓	✓	✓	✓	○	○	✓	○	○	○	✓	○	✗	✓	✓	○
	VaR - Other	✓	✓	✓	✓	✓	○	○	✓	○	○	○	✓	○	✗	✓	✓	○
	Greeks	✓	✓	✓	✓	✓	○	○	✓	○	○	○	✓	○	✗	✓	✓	○
	PaR/EaR	✓	✓	✓	✓	✓	○	○	✓	○	○	○	✓	○	✗	✓	✓	○
	CVaR	✓	✓	✓	✓	✓	○	○	✓	○	○	○	✓	○	✗	✓	✓	○
	Portfolio Sensitivity Analysis	✓	✓	✓	✓	✓	○	○	✓	○	○	○	✓	○	✗	✓	✓	○
Middle Office	Stress Testing	✓	✓	✓	✓	✓	○	○	✓	○	○	○	✓	○	✗	✓	✓	○
	Simulations	✓	✓	✓	✓	✓	○	○	✓	○	○	○	✓	○	✗	✓	✓	○
	Fair Value Disclosure	✓	✓	✓	✓	✓	○	○	✓	○	○	○	✓	○	✗	✓	✓	○
	Vessel Frieght Risk	-	○	✓	✓	✓	○	○	○	○	○	○	○	○	✗	✓	✓	○
	Insurance	-	-	✗	✗	✗	✗	✗	○	○	○	○	○	○	✗	✓	✓	○
	Inventory Management	✓	✓	✓	✓	✓	○	○	✓	○	○	✓	✓	○	✗	✓	✓	○
	Scheduling and Logistics	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Power Transmission	○	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Back Office	North America	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pipeline	-	✓	✓	✓	✓	○	○	○	○	○	✓	○	○	✗	-	-	✗
	Barge	-	-	✓	✓	✓	○	○	✓	○	○	✓	○	○	✗	-	-	✗
	Rail	-	-	✓	✓	✓	○	○	✓	○	○	✓	○	○	✗	-	-	✗
	Truck	-	-	✓	✓	✓	○	○	✓	○	○	✓	○	○	✗	-	-	✗
System Wide	Vessel	-	-	○	○	○	○	○	○	○	○	○	○	○	✗	✓	✓	○
	Supply Chain Mgmt./Traceability	✗	-	○	○	○	○	○	○	○	○	○	○	○	✗	-	-	✗
	Regulatory Reporting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Settlement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Actualization	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Invoicing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Settlements/Reconciliation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Taxation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	AR/AP/Ledger (Gen. or Sub)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Currency Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
System Wide	Unit Conversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Document Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Workflow Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Reporting / Business Intelligence	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Canned Reports	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
System Wide	Ad hoc Reporting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Executive Dashboard	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	BI tools	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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SAP SE

Dietmar-Hopp-Allee 16
69190 Walldorf
Germany
Phone: +49 (0) 6227 / 7-47474

www.sap.com



Product:
**SAP Commodity
Management Solution**

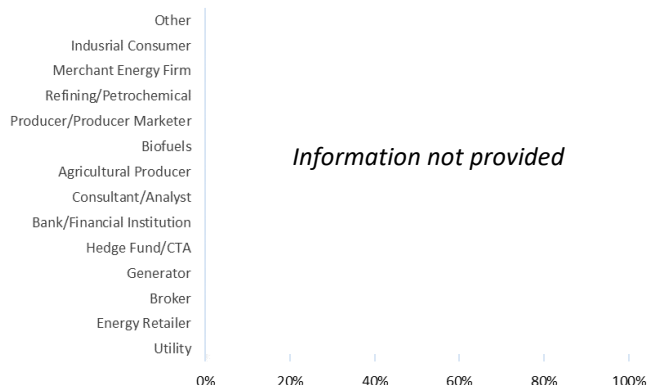
SAP is the market leader in enterprise application software, helping companies of all sizes and in all industries run at their best: 77% of the world's transaction revenue touches an SAP system. Our machine learning, Internet of Things (IoT), and advanced analytics technologies help turn customers' businesses into intelligent enterprises. Our end-to-end suite of applications and services enables our customers to operate profitably, adapt continuously, and make a difference. With a global network of customers, partners, employees, and thought leaders, SAP helps the world run better and improves people's lives.

The SAP Commodity Management solution enables customers to run fast, intelligent and tightly integrated commodity trading and risk management processes with enterprise resource planning (ERP) systems from SAP, natively and seamlessly integrated with the ERP components and processes. The SAP Commodity Management solution is available for SAP S/4HANA as well as in the SAP Business Suite software. The solution is designed to enable enterprises to buy, sell or trade physical commodities. It provides real time and end of day commodity risk analytics and enables organisations to manage price risks with financial commodity derivatives. SAP Commodity Management is commodity agnostic and provides functionality to manage the whole spectrum from very complex pricing mechanics to straight forward manual future and basis pricing. It comes with a query based commodity risk analytics layer that is able to be consumed by the broad range of tools within the SAP Analytics portfolio. The SAP Commodity Management solution includes the SAP Commodity Procurement, SAP Agricultural Contract Management, SAP Commodity Sales and SAP Commodity Risk Management applications. SAP Commodity Management for SAP S/4HANA is part of the digital core for implementing new technologies such as artificial intelligence through machine learning, robotic process automation, conversational AI for natural language processing, predictive analytics and blockchain technology. This opens a huge opportunity for SAP, their implementation partners and Commodity Management customers to deliver and build the intelligent enterprise for all commodity related businesses.

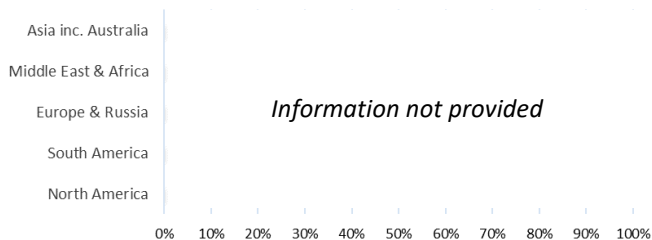
Number of Licensed Client Companies: >200

Representative Clients: *Information not provided*

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ Traditional License
- ✓ Hosted in Private Cloud

Office Locations and Phone:

- ✓ SAP has office locations in more than 78 countries and on most continents.
- ✓ For office locations, please see:
<https://www.sap.com/corporate/en/company/office-locations.html>

Vendor: **SAP SE**Product Name: **SAP Commodity Management solution**Version: **SAP S/4HANA 1909**

Functionality is deployed and in production at a client site		Not Deployed, but system is capable of providing functionality		System is not currently capable of providing that functionality		Not Applicable - Functionality not applicable for Commodity													
Function / Feature		ENERGIES							AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Freight Rates
		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concentrates	Precious	North America	Europe		
Production / Operations	Production Mgmt./Generation																		
	Volumetric Management																		
	Net Back Pricing																		
	DOI/Owner Balancing																		
	Gas Gathering																		
	Gas Processing																		
	Retail Ops. / Rack Mktg.																		
Front Office / Trading	Quality / Sampling																		
	Contract Management																		
	Deal Origination																		
	Credit Tracking																		
	Curve Management																		
	Portfolio Optimization																		
	Supply-Demand Optimization																		
	Pre-Deal Analytics "what if"																		
	Trade Capture																		
	Physical																		
	Financial																		
	Exchange																		
	Deal Types																		
	Spot & Forwards																		
	Futures																		
	Swaps																		
	Options																		
	Swaptions																		
	Transportation																		
	Storage/Inventory																		
	Complex Pricing																		
	Position Management																		
	Physical																		
	Financial																		
Risk Management and Analysis	Credit Risk																		
	Hedge Effectiveness																		
	Analytics																		
	Mark-to-Market																		
	VaR - Monte Carlo																		
	VaR - Other																		
	Greeks																		
	PaR/EaR																		
	CVaR																		
	Portfolio Sensitivity Analysis																		
	Stress Testing																		
	Simulations																		
	Fair Value Disclosure																		
Vessel Freight Risk																			
Insurance																			
Middle Office	Inventory Management																		
	Scheduling and Logistics																		
	Power Transmission																		
	North America																		
	Europe																		
	Pipeline																		
	Barge																		
	Rail																		
	Truck																		
Vessel																			
Supply Chain Mgmt./Traceability																			
Back Office	Regulatory Reporting																		
	Settlement																		

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Trilogy Effective Software Solutions, Inc.

14114 North Dallas Parkway
Suite 330
Dallas, TX 75254 USA
Phone: 214 908 7152

www.trilogyeffective.com



Product:
TIES

The Integrated Energy System (TIES) is for Gas, Oil and NGL producers, Gatherer/Transporters, Plant Processors and Marketer/Shippers. TIES combines depth of functionality combined with the ability to customize, automate and analyze in order to provide consistent results while saving time.

TIES offers solutions for the following primary roles:

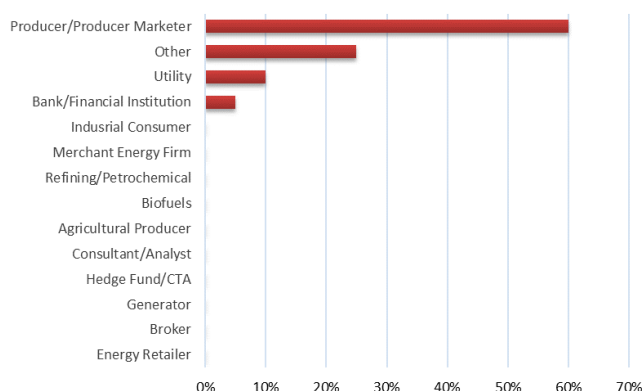
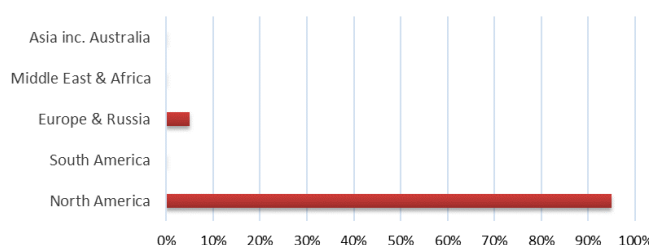
- Producers: Production AFS, Delivery Profile, Wellhead Scheduling, Netback Pricing, Division Order, Owner Balancing, Revenue Distribution, Royalty Payment, Plant Estimate/Settlele
- Gatherers/Transporters: Nominations, Confirms, Actuals, Balances, Cash Outs, Storage, OBA Management, Volume Allocation, Invoicing, EBB
- Gas Processors: Plant Allocations, Settlements, Fixed Recovery, POP, Keep Whole (etc.), Field, Commercial, Straddle Plant, Plant Bypass, Return to Lease, Product Sales, Storage Management, Purchase/Sales
- Marketers/Shippers: Buy/Sell/Move, Trade Room, Storage, Scheduling, Imbalance Management, Risk Management, Position Management, interfaces with Platts/ICE/NGI/Nymex/etc.

Most companies do business across 2 or more of these industry roles. TIES seamlessly integrates these roles together.

TIES also provides solutions for Contract Administration, Accounting (A/R, A/P, Netting, Taxes, PPAs), Auditing, Rules and Automation, Ad Hoc Reporting, File Import/Export.

Number of Licensed Client Companies: 20

Representative Clients: Kinder Morgan; Enlink; Marathon Oil; Aethon; Society Generale; Flywheel Energy

Customer Distribution by Type**Customer Distribution by Geography****Delivery Methods:**

- ✓ Traditional License
- ✓ Hosted in Public Cloud

Office Locations and Phone:

- ✓ Dallas TX USA +1 214 908 7152

Vendor: **Trilogy Effective Software Solutions, Inc.** Product Name: **TIES**Version: **19**

		✓ Functionality is deployed and in production at a client site	● Not Deployed, but system is capable of providing functionality	✗ System is not currently capable of providing that functionality	- Not Applicable - Functionality not applicable for Commodity													
		ENERGIES						AGS & SOFTS				METALS			EMISSIONS		Other Bulk	Frieght Rates
Function / Feature		Power	Natural Gas	Crude	Crude Products	NGL	Coal	LNG	BioFuels	Grains	Edible Oils	Softs	Base	Concen- trates	Precious	North America	Europe	
Production / Operations	Production Mgmt./Generation	●	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Volumetric Management	-	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Net Back Pricing	-	✓	✓	✓	✓	✗	✗	-	-	-	-	-	-	-	-	-	-
	DOI/Owner Balancing	-	✓	✓	-	✓	✗	-	-	-	-	-	-	-	-	-	-	-
	Gas Gathering	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gas Processing	-	✓	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-
	Retail Ops. / Rack Mktg.	●	✓	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-
Front Office / Trading	Quality / Sampling	-	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	-
	Contract Management	●	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Deal Origination	●	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Credit Tracking	●	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Curve Management	●	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Portfolio Optimization	●	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Supply-Demand Optimization	●	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Pre-Deal Analytics "what if"	●	●	●	●	●	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Trade Capture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Physical	●	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Financial	●	✓	●	●	●	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Exchange	●	✓	●	●	●	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Deal Types	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Spot & Forwards	●	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Futures	●	✓	●	●	●	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Swaps	●	✓	●	●	●	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Options	●	✓	●	●	●	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Swaptions	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Transportation	●	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Storage/Inventory	-	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-
Risk Management and Analysis	Complex Pricing	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Position Management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Physical	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Financial	●	✓	●	●	●	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Credit Risk	●	✓	●	●	●	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Hedge Effectiveness	●	●	●	●	●	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Analytics	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Mark-to-Market	●	✓	●	●	●	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	VaR - Monte Carlo	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	VaR - Other	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Greeks	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	PaR/EaR	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	CVaR	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Portfolio Sensitivity Analysis	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Middle Office	Stress Testing	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Simulations	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Fair Value Disclosure	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Vessel Frieght Risk	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Insurance	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Inventory Management	✗	✓	✓	●	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Scheduling and Logistics	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Power Transmission	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	North America	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Europe	✗	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Back Office	Pipeline	-	✓	✓	●	✓	-	-	-	-	-	-	-	-	-	-	-	-
	Barge	-	-	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Rail	-	-	●	●	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Truck	-	-	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Vessel	-	-	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Supply Chain Mgmt./Traceability	✗	-	●	●	●	✗	✗	✗	✗	✗	✗	✗	✗	✗	-	-	✗
	Regulatory Reporting	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
System Wide	Settlement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Actualization	●	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Invoicing	●	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Settlements/Reconciliation	●	✓	✓	●	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Taxation	●	✓	✓	●	●	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	AR/AP/Ledger (Gen. or Sub)	●	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Currency Conversion	●	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Unit Conversion	●	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Document Management	●	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Workflow Management	●	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
System Wide	Reporting / Business Intelligence	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Canned Reports	●	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Ad hoc Reporting	●	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Executive Dashboard	●	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
System Wide	BI tools	●	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗

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W Energy Software

One West Third
Suite 1115
Tulsa, OK 74103
Phone: 855-466-7808

www.wenergysoftware.com



Product:
Commodity Management

W Energy Software (formerly known as Waterfield) was founded in 2009, and is headquartered in Tulsa, Oklahoma with presences in Houston, Dallas and Denver. The current executive team at W Energy Software has an average of 25 years of experience in energy software development and is leading W Energy Software through a period of tremendous growth and market acceptance.

W Energy Software is an established provider of a unified Upstream and Midstream ERP platform. The company has seen tremendous organic growth, along with growth through acquisition. W acquired the Production Operations application Neofirma in the summer of 2019.

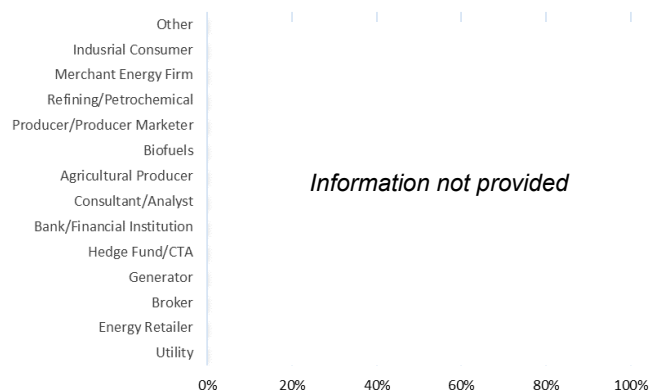
W Energy Software is known throughout the industry for providing outstanding customer service and innovative technology at the lowest total cost of ownership. W Energy Software uses the latest cloud technologies and process excellence to provide a unified, transparent energy supply chain and commodity management capabilities to a broad range of Energy clients. W Energy Software has taken its unparalleled physical commodity experience from the Upstream and Midstream segments and is extending the capability to handle all facets of the Commodity Management (CM) space.

W Energy Software's CM capability is focused on the complete physical and financial energy supply chain from wellhead to citygate, from contract to general ledger, from trade to cash. The major areas of innovation for W Energy Software include physical and financial trading, risk management, credit, optimized logistics, and accounting. W Energy Software's calculation-trace engine offers the industry's only complete insight into resolved settlement values, netback and tax calculations. W Energy Software also takes data analytics to the next level providing end users with visualization of data throughout the application along with association graphs giving end users a holistic view to how the data is used throughout the commodity lifecycle.

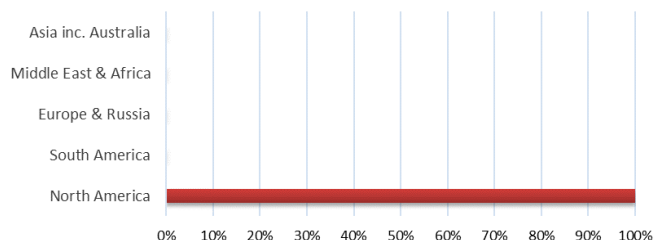
Number of Licensed Client Companies: *Information not provided*

Representative Clients: *Information not provided*

Customer Distribution by Type



Customer Distribution by Geography



Delivery Methods:

- ✓ Traditional License
- ✓ SaaS: Multi-Tenanted
- ✓ Hosted in Public Cloud

Office Locations and Phone:

- ✓ Houston TX
- ✓ Dallas
- ✓ Denver

Version: 10

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Other Vendors

The following vendors (not necessarily an all-encompassing list) also provide varying levels of ETRM, CTRM or CM capabilities. For more information on each and others, please consult the CTRMCenter.com vendor directory at <https://www.ctrmcenter.com/resources/> or their individual websites.

ABB (Ventyx)	Dycotrade
Adapt2	Ebb&Flow
Albedo Energy Consulting	Egar Technology
Ascend Analytics	EMK3
Atos Worldgrid	Enegen
Blacklight Systems	Ensite
Cadran	Ensyte
Calvus Solutions	ESP Consulting
CDA Software	Eximware
Chinsay	Graintrack
CMS	GSML
Commodity Risk Solutions	Intstream
CoreTRM	IP Systems
cQuant.io	IPESoft
Crisk	iRely
Cubiq	iRisk
Cultura	Kisters
DMS	Kynetix

KYOS	SCA Technology
Markit	Sinergetica
Microstep	Sisu Group
Momentum3	Soflutions
Murex	Softsmiths
P2 Energy Systems	Soptim AG
PCR	Square Four
PerfectChannel	Talman Solutions
Planlogic	Tech Mahindra
Powel	Tegos
Power Settlements	Three Rivers Cotton System
Previs Systems	Tradepaq
ProCom	Tradex
Progressive SW	TransGRAPH Consulting
Qbill	Transition Technologies
Quantifi Solutions	Trayport (Visotech)
Quantrisk	Unicorn Systems
Quorum Business Solutions	Utilidex
Ringhel	Utiligroup
RSDi	Virtimo
SAS RiskAdvisory	

ABOUT

Commodity Technology Advisory LLC

Commodity Technology Advisory is the leading analyst organization covering the ETRM and CTRM markets. We provide the invaluable insights into the issues and trends affecting the users and providers of the technologies that are crucial for success in the constantly evolving global commodities markets.

Patrick Reames and Gary Vasey head our team, whose combined 60-plus years in the energy and commodities markets, provides depth of understanding of the market and its issues that is unmatched and unrivaled by any analyst group.

For more information, please visit:

www.comtechadvisory.com

ComTech Advisory also hosts the CTRMCenter, your online portal with news and views about commodity markets and technology as well as a comprehensive online directory of software and services providers.

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