



Emissions and Renewables Solution

Comply and Manage Emissions and Renewables Allowances

Climate change and sustainability are recognized business challenges that have generated both broad-based governmental regulations and grass-roots initiatives at local and regional levels. While not entirely global, the Kyoto accord spurred many governments to attack the issue from the perspective of emission reduction and controls. Today US state and regional initiatives drive actions aimed at carbon with the EPA regulating sulfur dioxide (SOX) and nitrous oxide (NOX) emissions.

These regulations and initiatives, like the Regional Greenhouse Gas Initiative (RGGI) in Northeastern US and the EU-ETS, underscore a sizeable new risk factor for power producers, refiners and industrials, both large and small. Such programs to mitigate climate or environmental risk generally include caps on emissions and introduce new operational risks, as new processes are required of compliance departments. The use of allowances to meet caps and hedging of compliance risks, have lead to a thriving trading market around emissions allowances and renewables credits such as Texas Renewable Energy Obligations (ROCs) and UK Renewable Energy Credits (RECs).

Managing the Risks with Aligné

To support participation in these markets, SunGard's Aligné Emissions Management offers flexible trade and configurable risk management for emissions and renewables. Aligné Emissions Management can help you to effectively manage price and operational risks by:

- Enabling emissions trading, capturing forecasted and actual emissions, and supporting the issued purchase and sale of emissions allowances
- Enabling trading of renewables credits and related energy derivatives
- Matching allowance certificate inventories to obligations
- Managing regulatory reporting by tracking trades and monitoring allowance surrender, "true-up", and verification processes

Aligné Emissions Management's allowances module supports trade types that include allowances, emissions physicals, and shapes. Allowance types that can be captured include EU ETS, GOs, ROCs, LECs, CERs, RECs, REGOs, US Green Tags, and SOX/NOX. Aligné Emissions Management provides full position, risk (including VaR) and P&L reporting for these allowance types. These trade types are stored using Aligné's flexible Trade Shape functionality, allowing for capture at any granularity required, from monthly to sub-hourly.

Trade entry through Aligné's front office includes flexible support for serial numbering rules to support inventory tracking of allowance certificates and credits. Trade capture data includes contract vintage, delivery date, portfolio, counterparty information, delivery and registry specifics (e.g. origin and destination county), registry accounts and actual and transfer dates.

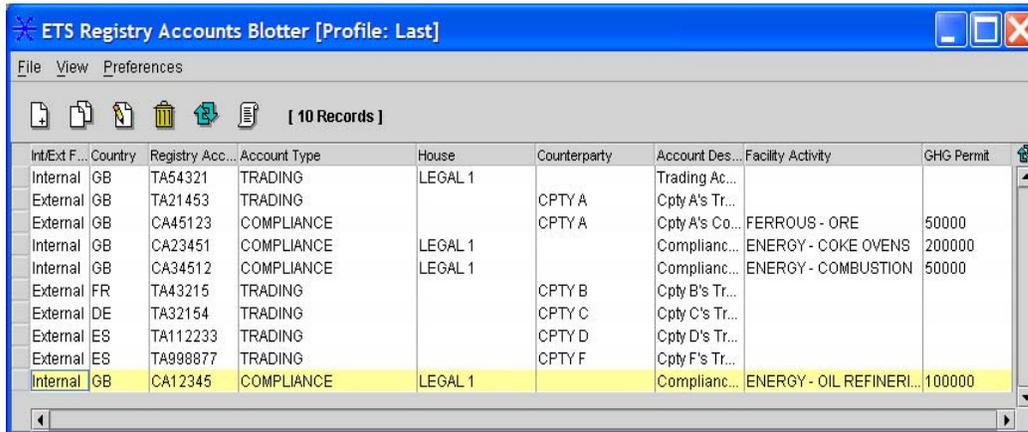
Emissions Forecast and Actuals Capture

Effective management of an emissions inventory requires capture of the forecasted and actual SOX, NOX, or carbon emissions, alongside allowances trades. Aligné Emissions Management can capture emissions forecasts and actuals directly or upload them from 3rd party models.

Registry Account Management

Proper compliance with trade registry and allowance surrender procedures is critical in the emissions market, with great penalties for non-compliance, both monetarily and in reputation.

The allowances module provides tools to effectively manage the processes required for reporting and regulatory or registry compliance. The screen below illustrates this for the EU-ETS with similar screens for reporting in North America.



Int/Ext F...	Country	Registry Acc...	Account Type	House	Counterparty	Account Des...	Facility Activity	GHG Permit
Internal	GB	TA54321	TRADING	LEGAL 1		Trading Ac...		
External	GB	TA21453	TRADING		CPTY A	Cpty A's Tr...		
External	GB	CA45123	COMPLIANCE		CPTY A	Cpty A's Co...	FERROUS - ORE	50000
Internal	GB	CA23451	COMPLIANCE	LEGAL 1		Complianc...	ENERGY - COKE OVENS	200000
Internal	GB	CA34512	COMPLIANCE	LEGAL 1		Complianc...	ENERGY - COMBUSTION	50000
External	FR	TA43215	TRADING		CPTY B	Cpty B's Tr...		
External	DE	TA32154	TRADING		CPTY C	Cpty C's Tr...		
External	ES	TA112233	TRADING		CPTY D	Cpty D's Tr...		
External	ES	TA998877	TRADING		CPTY F	Cpty F's Tr...		
Internal	GB	CA12345	COMPLIANCE	LEGAL 1		Complianc...	ENERGY - OIL REFINERI...	100000

For the EU-ETS, all trades must be reported to the registry operator or regulator of the relevant member state. With relevant registry information captured on trades, Aligned Emissions Management's reports can aid this process through documents for checking manual entries or through producing batch files for automatic upload. Registry accounts can be selected, defaulted by the traded book and counterparty, and grouped by portfolio or account for position and mark to market reporting.

Various agencies require reporting of verified emissions on quarterly or annual basis and truing up of the corresponding number of emissions allowances against this or against an inventory of credits. Aligned's reporting and trade capture functions allow for monitoring of these account positions against the latest forecasts for verified emissions.

SunGard — Solutions for Energy

SunGard's energy solutions help energy companies, industrials and financial services, to efficiently compete in global energy markets by streamlining and integrating the trading, risk management and operations of physical commodities and their associated financial instruments. These solutions provide front to back-office support for capturing deals, delivering market data for valuation, clearing and reconciliation of transactions, invoicing and accounting for transactions, analysis and management of risk, and physical transmission or delivery of commodities. SunGard Energy Solutions also support the logistics and inventory of fuels used in producing power and industrial products.



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