

Delivering data

As markets for trading greenhouse gas emissions take shape there is a growing demand for an integrated system to handle the many levels of data involved. **Alan Reed** explains



The international effort to reduce atmospheric effects of greenhouse gas (GHG) emissions presents complex problems of information generation and management. Information in all forms – data, calculations, quantities, dates, reports – must all be created, recorded, compiled, maintained, exchanged and analysed.

This is especially important for the initiation of an emissions trading market because the market will demand certified units, as close to stock share certificates as possible.

Although the international business world has not agreed on the financial standards and data format for emissions trading, contracts for emissions units are already being traded. Regional pilot projects have been operating for several years. The UK and Danish markets, and the Chicago Climate Exchange are in the throes of full implementation.

At international meetings, participants in these embryonic emissions trading markets admit that they are “learning by doing”. Their business plans include calculated risks connected with their limited inventories of sequestered tonnes of carbon, or forward contracts for allocated amounts of carbon dioxide.

The global stakes involved in the generation and management of information about GHGs are enormous. Certified tonnes of carbon promise to be one of the most precious commodities in the world’s economy for generations ahead. These financial considerations will control the requirements for information management.

Reductions in emissions will produce units to be traded. So the race is on both to reduce GHGs and to institute information

management systems that will provide the necessary certification of the reductions that serve as the instruments for gaining wealth in the marketplace.

Even at this elementary stage of the market, it is clear that the 21st century will be characterised by the creation of trillions of dollars worth of new tradable certificates, representing not a share of a producing entity, but rather a number of tonnes of an ephemeral by-product of modern industry – tonnes which no longer exist.

With so much at stake, the emissions trading market will rely on new means for originating information about the output of GHG emissions and the location, control and ownership of those emissions.

The information required will be found in several places. The emissions data will start at the source while the credits generated and account balance for every market entity or party will be maintained in inventories. Ownership will be established in registries, which will also capture changes in ownership through the emissions trading markets.

Brokerages and other financial organisations have already adapted standard software to record the small volume of speculative trades completed to date. But these will not suffice for satisfying future requirements for certifiable units, especially when the international regime under the Kyoto Protocol, or a similar treaty, could impose damaging penalties on national governments unable to maintain proper inventories and registries.

The United Nations Conference on Trade and Development (UNCTAD) financed prototype software for maintaining registries (updated through trading), inventories and reporting data. This is currently being tested and refined by Annex I Corporation.

Companies and non-governmental organisations have been working on identifying methods for compiling certifiable inventories. The World Business Council for Sustainable Development and the World Resources Institute have been testing the GHG Protocol – an international common standard for company reporting of GHG emissions – in the field with the co-operation of many companies. They plan to promote the tested proto-

col as an acceptable standard for the origination of certifiable, tradable emissions credits.

If the UK, Danish and Midwest markets are to be practical test-beds for a global trading system, they will “learn by doing” until sufficient credibility has been established for the instruments they trade. In any case, certified trades must embody several stages of data management. The source emissions must be recorded through adequate monitoring. Companies might do this internally, if instruments like the GHG Protocol are used, but they could also involve independent consulting firms.

Second, the continuous stream of data from the monitoring stage will need verification, undoubtedly from a third party. Third, the record of the verified emissions will be the basis for certification by a different third party, probably a consulting or quality assurance organisation. Only at this stage will certified credits be available for trading.

All of the stages of this process must be logged through inventory software that can show real-time balances for any level of organisation, from individual source sites, to corporate entities, to the regional or national governmental party.

National inventories based on this process will be reported to the UN Climate Change Secretariat and will provide the basis for compliance reviews by the global enforcement organisation.

Software nearing completion can provide integrated information management from origination to final submittal to the Climate Change Secretariat. Options being incorporated in the first version include geographic information modules, algorithms for performing alternative scenarios, and trading registries for updating inventories in real time.

Information technology often encourages the creation of data. The Kyoto Protocol has the opposite effect – stimulating an intensive effort to develop software adequate to the needs of the emissions trading market.

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The Emissions Marketing Association consists of more than 270 members from 190 companies worldwide. Its aim is to promote market-based trading solutions for environmental control

