



Lloyd's Register  
LRQA

Improving performance,  
reducing risk

# Carbon Market Monitoring, Reporting and Verification Expertise



# The carbon market opportunity

The global challenge of climate change has become a reality for governments and businesses alike. The United Nations' (UN) flexible mechanisms have demonstrated the role that markets can play in supporting cost-effective emission reductions. Capacity building and learning from experiences is now critical to enable countries to operate effectively in these emerging and developing markets and to assist them to achieve their low-carbon development goals.



## Our services

Our expertise in the carbon market has been gathered from experience in the delivery of validations and verifications across the following:

### Cap and trade schemes such as:

UK Emissions Trading Scheme (ETS); European Union ETS; California Air Resources Board Mandatory Greenhouse Gas (GHG) Reporting Regulation; Tokyo Metropolitan Government ETS; Japanese Voluntary Emissions Trading Scheme (JVETS); and the Korean GHG and Energy Target Management System.

### Offset mechanisms such as:

Clean Development Mechanism (CDM); Joint Implementation (JI); Gold Standard; Climate Action Reserve (CAR) and the Verified Carbon Standard (VCS).

### GHG inventories and product footprints

against standards including ISO 14064, the GHG Protocol, the California Climate Action Registry (CCAR), The Climate Registry (TCR), and the Japan Carbon Footprint of Products Scheme (JCFP).

Working with governments, statutory bodies and industry groups we build consensus and develop solutions to set and implement robust standards and schemes. Our services include:

### Preparation of Monitoring Reporting and Verification (MRV) frameworks through:

- Hosting stakeholder engagement workshops to assist the development of regulatory MRV elements.
- Advising senior officials on MRV practices.
- Training for government departments and industry on the design of emissions trading schemes; the links to inventorisation, regulation and guidance requirements; MRV requirements; use of offset credits; the role of regulators, verifiers, and accreditors; the preparation of company inventories; and calculation and measurement uncertainties.
- Analysis of draft MRV regulations against international best practice.

### Institutional, regulatory and legal frameworks through:

- Contribution to technical committees for standards and guidance relating to data collection systems and accreditation of verifiers, for example.

### Sectoral expertise

- In agro-industry, power generation, energy efficiency, electricity transmission and distribution, renewables, transport, buildings, oil and gas, cement, iron and steel, waste management, forestry, land use and other industries.

### Country-specific expertise and knowledge through:

- Dedicated climate change experts across Europe, the Middle East, Asia and the Americas.



**LRQA drafted the first Voluntary Carbon Standard 2007 (now the Verified Carbon Standard).**



# Case studies

## Delivery of MRV capacity building under the Japanese Bilateral Offset Credit Mechanism

The Ministry of the Environment, Japan (MOEJ) is developing a Bilateral Offset Credit Mechanism (BOCM), sometimes referred to as the Joint Crediting Mechanism (JCM), in partnership with host developing countries for achieving reductions in GHGs through joint mitigation activities. The approach requires the development of an MRV methodology that is specific to the particular circumstances of each host country, whilst achieving an institutional framework that meets the donor-country requirements.

LRQA has assisted MOEJ through a number of projects:

### Capacity building in six developing countries in Africa;

– LRQA assisted with extensive stakeholder engagement from the outset in order to gain an understanding of existing MRV capacity and any local specific issues with regard to implementation of MRV frameworks. Once the MRV framework is established, capacity-building technical workshops are provided. LRQA has delivered in-country technical workshops in Morocco, Senegal, Kenya, Ethiopia, South Africa and Zambia.

### Trial verification of the MRV demonstration study on development of mass rapid transit (MRT) network in Bangkok, Thailand;

– The project involved the reduction of GHG emissions by passenger modal shift to the proposed new MRT network and changes in vehicle speed from reduced traffic congestion.

### Pre-verification of the proposed MRV project entitled 'Biodiesel consumption by heavy duty equipment in Indonesia';

– The project involved biodiesel consumption by heavy duty equipment and aimed to achieve GHG emission reductions by displacing fossil fuel consumption with biodiesel fuel produced from vegetable oils in Indonesia.

### Assessment of a proposed MRV methodology;

– The methodology entitled 'Improved Operational Efficiency through Introduction of an Eco-Shipping support system' was assessed against the JCM methodologies and guidelines.

### MRV training for the government of Kazakhstan

To provide understanding of international best practice for the establishment of rules for MRV of GHG emissions under the proposed national ETS in the Republic of Kazakhstan, LRQA delivered training for government departments and environment ministry officials on the design of emissions trading schemes including; the links to inventorisation, regulation and guidance requirements, and relative to MRV requirements; use of project credits and the role of regulators, verifiers and accreditors.

A further two-day training session was delivered to industrial participants in Kazakhstan, covering the preparation of company inventories and MRV requirements from their perspective.

LRQA contributed to the working group focused on the draft law and amendments to the Environmental Legislative Acts of the Republic, which included providing a report to the Ministry of Environment commenting on their draft regulations from an MRV perspective.

### MRV gap analysis for the Guangdong ETS in China

To support the implementation of the China carbon market, LRQA is working with the Guangdong Academy of Social Science to review and improve MRV information and statistical systems at the government and industrial level.

More specifically, LRQA has been engaged to introduce best practice to companies in Guangdong to improve their data governance and information systems.

This will be done via a 12 month 'gap analysis' assignment in Guangdong Province involving onsite audits of current data management systems and management capacity in four industrial sectors (cement, petrochemicals, iron and steel and power generation) to identify areas for improvement. The output will also be provided to the Central Government as it designs China's overall carbon data system.

### ETS Training for Korean government and industry

In 2010 LRQA held a two-day training session organised by the Korea Energy Management Corporation (KEMCO) for key government and industry on ETS monitoring and reporting processes, the verification process, and GHG emissions calculation, measurement and uncertainty. Similarly in 2012, LRQA arranged a number of site visits and presentations in the UK relating to the function of the EU ETS for a delegation of Korean power companies. The programme was joined by the UK Emission Trading Group (ETG), business members (Drax, BP, Eneco, E.On), the International Emissions Trading Association (IETA), LRQA experts, lawyers, carbon originators and traders. It also included an on-site visit to a power station, plus a visit to Europe's largest carbon exchange. The programme enabled the participants to learn from industry, verifiers and traders that had experience from operating within existing emissions trading schemes.

### Capacity building for CDM and JI experts

After the third Conference of Parties (COP 3), which took place in Kyoto, Japan in 1997, the Japanese government initiated a reduction plan that included a proportion of its emission reduction obligation under the Kyoto Protocol to be achieved by the forest sector. LRQA was requested by the Ministry of International Trade and Industry (METI) to join the research committee to analyse the results of the COP and undertake capacity building for experts of CDM/JI. LRQA provided the senior tutor for the capacity building programme and prepared training materials for both sink projects and emission reduction projects in the land sector.

### Provision of sectoral expertise

#### Forestry

From April 2003, as a member of the sink CDM Committee of Forest Agency/ Ministry of Agriculture, Forestry and Fisheries (MAFF), a representative of LRQA served as an adviser for forestry issues in developing countries (Indonesia, Vietnam, Senegal, Panama and Uruguay forest sink projects) and produced good practice guidance for sink CDM projects for Japanese companies (CDM handbook for Project Design Document writers).

#### Shipping

Since 2008 we have been an integral member of the International Maritime Organisation's (IMO) Working Group on GHG emissions from ships. The task of this working group is to address market-based, operational and technical measures for the shipping industry. Lloyd's Register represented the UK government on the IMO's 'Expert Group on Feasibility Study and Impact Assessment of possible Market-based Measures', which included a substantial contribution to the UK government submission on 'A global emissions trading system for greenhouse gas emissions from international shipping'.

#### Aviation

As part of the Consortium with Entec, LRQA drafted the MRV Guidelines for the inclusion of Aviation into the EU ETS. The work, which included methodologies for both tonne-kilometre data and annual emissions, was delivered to the European Commission Directorate – General Environment – in 2008.

The contract included a formal public consultation phase on a first draft; response to that consultation; and assessment of proposed changes and perceived problems. Consultees included industry worldwide, in developed and developing countries. Key to successful delivery was the ability to leverage our detailed knowledge of the EU ETS and Intergovernmental Panel on Climate Change guidelines with our understanding of operational aspects of the Aviation industry.

# Technical expertise and experience

Over the past 25 years, LRQA has played a significant role in developing global climate change frameworks and regularly participates in the technical committees that develop and improve monitoring, reporting and verification guidelines and standards.

To find out more about how LRQA's climate change and sustainability services could benefit your organisation, please visit us at [www.climatechange.lrq.com](http://www.climatechange.lrq.com) or contact us at [climatechange@lrqa.com](mailto:climatechange@lrqa.com)



Through our involvement in the ISO Technical Committee 207/SC1, we have helped to shape the development of ISO 14064-2:2006, ISO 14064-3:2006 and ISO 14065:2007. We joined the committee in 2000 and have chaired it since 2009.

LRQA was asked to draft the first Voluntary Carbon Standard 2007, now known as the Verified Carbon Standard (VCS). The VCS was instrumental in pioneering project level emission reductions as it fostered the development of innovative rules and tools for developing standardised methods to lower the costs of project development and to help scale up emission reducing activities.

We are a founding member and Vice President of the Designated Operational Entities (DOEs) and Accredited Independent Entities (AIEs) Association (DIA) that represents DOEs and AIEs under the UNFCCC's CDM and JI mechanisms.

As a verification partner of CDP, we work closely with them to accelerate their mission to improve the quality of environmental risk measurement, disclosure and management by companies and cities.

In addition, we are a board member of the International Emissions Trading Association (IETA), World Resources Institute (WRI), World Business Council for Sustainable Development (WBCSD), the UK's Emissions Trading Group (ETG) and the European Cooperation for Accreditation (EA).

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