

Technical Certification



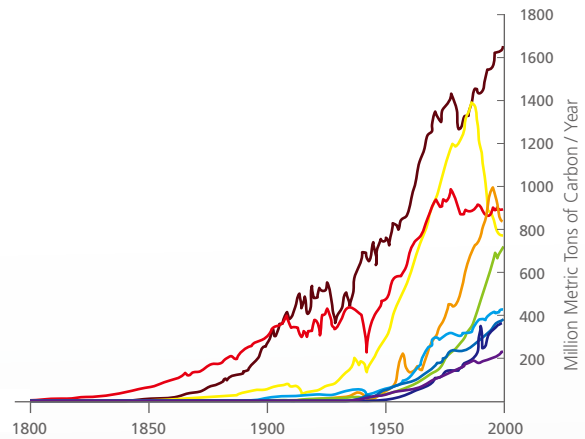
Background

The consequences of climate change and the need to reduce carbon emissions are critical business issues nowadays. Most companies acknowledge that climate change will have different degree of impact on their business. However, the extent and scope of this is often not fully understood or cannot be easily quantified.

The United Nations Climate Change Conference was held at the Bella Center in Copenhagen, Denmark, between 7 December and 18 December 2009. The conference had included the 15th Conference of the Parties (COP15) to the United Nations Framework Convention on Climate Change and the 5th Meeting of the Parties (COP/MOP 5) to the Kyoto Protocol.

Over 192 countries or cities, more than 15,000 representatives and specialists have participated in the Conference. How to make developed and developing countries to build up a mutual trust to reduce greenhouse gas emissions together was the biggest challenge of the meeting. Over 100 countries' presidents and government officials attended this meeting contributing their best efforts to finally sign a strong and practical agreement on the climate change mitigation beyond 2012.

Annual Carbon Emissions by Region



(Data source: Carbon Dioxide Information Analysis Center)

The above figure shows the annual fossil fuel carbon dioxide emission, in million metric tons of carbon, for a variety of non-overlapping regions covering the Earth.

- USA & Canada
- Western Europe
- Communist East Asia
- Eastern Europe & Former Soviet States
- India & Southeast Asia
- Australia, Japan & Pacific Ocean States
- Central & South America
- Middle East
- Africa

Climate Change



According to the Intergovernmental Panel on Climate Change (IPCC), climate change refers to any climate change by natural cause or by human activities. The United Nations Framework Convention on Climate Change (UNFCCC) has a slightly different definition. UNFCCC believes climate change requires a long time observation. UNFCCC has defined climate change as any human activities that directly or indirectly change the earth's atmosphere and therefore caused climate change.

By either definition, climate change still caused serious natural disasters. It has led to frequent occurrences of extreme weather around the world: heavy snow, hurricanes, floods, melting glaciers, rising sea levels, less food production and so on. Human burning fossil fuels, emissions of carbon dioxide and other greenhouse gases, causing global warming, have already pushed the earth's environment at risk.

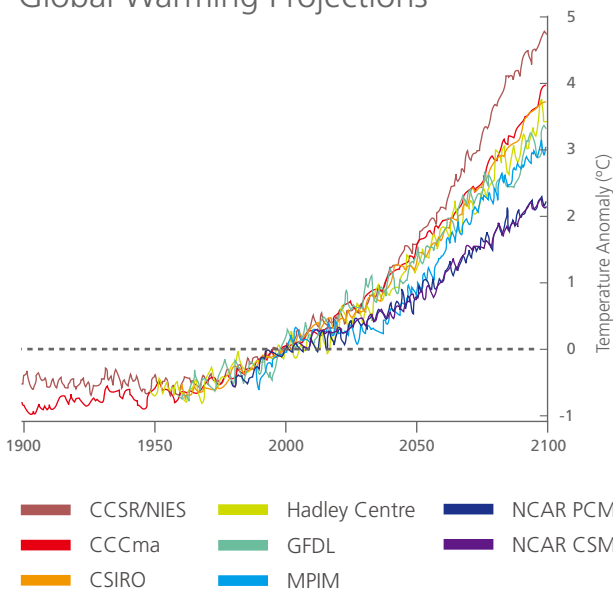
Global Warming



Global warming refers to an average increase in the Earth's temperature, which in turn causes changes in climate. Global surface temperature increased 0.74 ± 0.18 °C between the start and the end of the 20th century. The IPCC concludes that most of the observed temperature increases since the middle of the 20th century was caused by increasing concentrations of greenhouse gases resulting from human activities such as fossil fuel burning and deforestation.

The IPCC predicts global temperature change of 1.4 – 5.8°C due to global warming from 1990 – 2100. As evidenced above (a range of 2.5°C in 2100), much of this uncertainty results from disagreement among climate models, though additional uncertainty comes from different emissions scenarios.

Global Warming Projections



Temperature Increase 2000 to 2100 (°C)

Model	Total	Land	Ocean
CCSR/NIES (Center for Climate System Research & National Institute for Environmental Studies)	4.7	7.0	3.8
CCCma (Canadian Center for Climate Modelling and Analysis)	4.0	5.0	3.6
CSIRO (Commonwealth Scientific and Industrial Research Organisation)	3.8	4.9	3.4
Hadley Centre (Hadley Centre for Climate Prediction and Research)	3.7	5.5	3.0
GFDL (Geophysical Fluid Dynamics Laboratory)	3.3	4.2	3.0
MPI-M (Max Planck Institute für Meteorologie)	3.0	4.6	2.4
NCAR PCM (National Center for Atmospheric Research)	2.3	3.1	2.0
NCAR CSM (National Center for Atmospheric Research)	2.2	2.7	2.0

(Data Source: IPCC data distribution center)

The table above shows climate model predictions for global warming by Special Report on Emissions Scenarios (SRES).



BMI Technical Certification recognizes that climate change will have fundamental effects on business performance and company valuation. Company response to climate change increasingly impacts both operational efficiency and the bottom line.

Our professionals provide a systematic approach to manage the risks and minimize the negative effects that climate change brings to our community. We help companies to devise a low-carbon program to achieve low-carbon economy in the most efficient and effective way. By following such model, companies may increase their energy efficiency, improve economic performance and invent new technology to stimulate economic growth. Companies also have greater protection of energy supply which benefits from the booming carbon market and thereby enters many worlds' important low-carbon technology export markets.



Scope of Services



We have a special team of professionals and engineers specializing in carbon management and verification of greenhouse gas (GHG) emissions. Our specialties are:

1. Carbon Credit Assessment

Carbon credits are a key component of national and international attempts to mitigate the growth in concentrations of greenhouse gases. Such service allows market mechanisms to drive industrial and commercial processes in the direction of low emission or less "carbon intensive" approaches which are used when there is no cost to emitting carbon dioxide and other GHGs into the atmosphere.

Our service team specializes in various carbon credit assessment services to determine and analyze the solutions for our clients to minimize the harm and pollution that carbon dioxide brings to our community.

1.1 Carbon Audit

A carbon audit sometimes referred to as 'carbon footprint' is a means of measuring and recording the GHG emissions of an organization or building within a defined system boundary. Carbon audit is the first step in developing a carbon strategy. By getting a carbon audit, companies can build up a long term action plan to manage and reduce the carbon emissions of the organization and their clients, thus demonstrating corporate social responsibility and enhancing their brand value. Companies also have opportunities to reduce utility costs by following the strategy.

We are an authorized verifier and an approved independent professional for evaluating carbon credit sequestrations. We also provide recommendations and implementation plans for projects to maximize carbon sequestration benefits.



1.2 Energy Audit

An energy audit is an inspection, survey and analysis of energy flows for energy conservation in a building, process or system to reduce the amount of energy input into the system without negatively affecting the outputs.

Energy audit is a very effective energy management tool. Interest in energy audits has recently increased as a result of growing understanding of human impact upon global warming and climate change.

We are skillful in examining the energy account of an energy system, checking how energy is used in its various components and providing recommendation of improvements from our experienced team through the implementation of energy audit. Companies not only can reduce energy consumption, but also to extend the service life of equipment, thereby saving money.

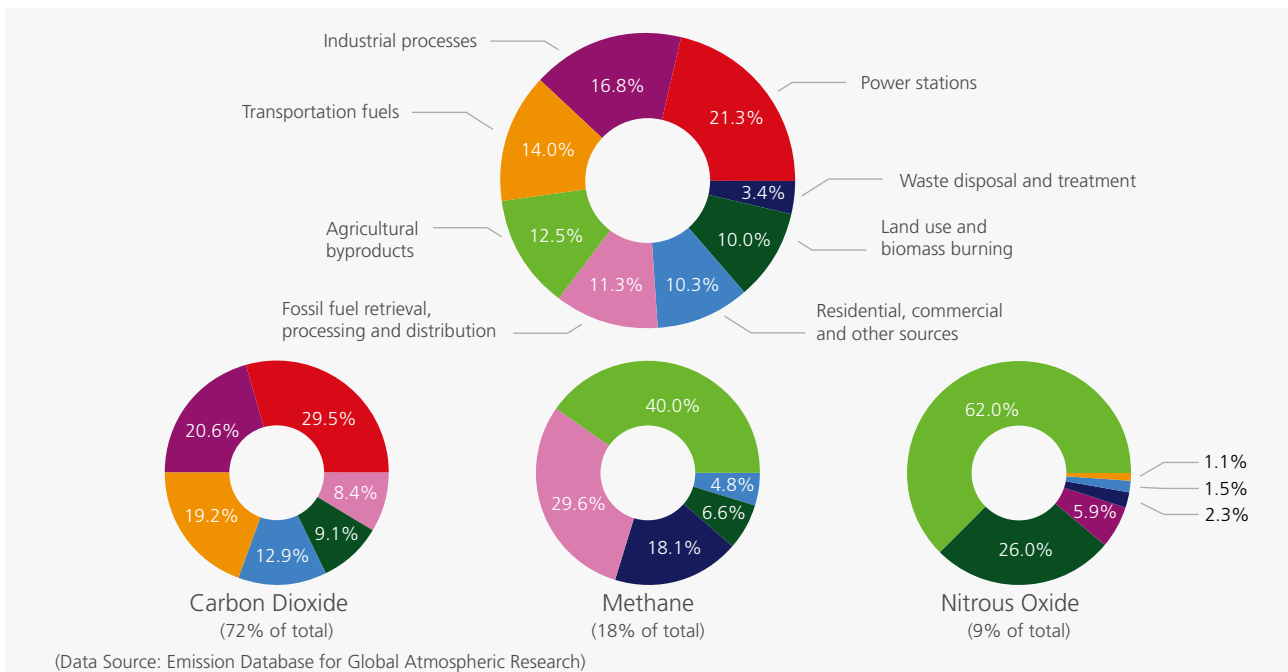
2. Carbon Management

Our specialized service team delivers carbon management services which enable companies to understand and manage the impact of climate change. With solid technical background and great experiences, we provide step-by-step approach to manage risks and realize the opportunities of which the outcome goes beyond energy management. The idea is to enable companies to consider both their operations and their revenue in the context of climate change. The benefits from such include cost savings, clarity around legislation, operational improvements, corporate reputation and brand enhancement.

2.1 Validation

Validation is an important step for a project that is to be approved as climate change project. Only projects validated by an accredited third party are entitled to earn emission certificates.

Annual Greenhouse Gas Emissions by Sector



The above figure shows the relative fraction of man-made greenhouse gases coming from each of eight categories of sources; Segments with less than 1% fraction are not labeled.

2.2 Verification and Certification

The monitoring system will display the quantity of reductions achieved and is subject to examination by an accredited certifier, who will confirm validity of the figures. This marks the last and most important step of a climate change project. Eventually the project owner receives tradable and valuable certificates. National and international registers will keep an account of the transactions.

2.3 Climate Neutral Events and Activities

Events and activities can be considered as “climate neutral”, when relevant emissions caused by the event or activity are compensated by emission reductions from climate change projects.

Consultant

Mr. Angus Cheng Senior Engineer

Mr. Cheng is a Senior Engineer of the Company. He has over 15 years' experience in mechanical and building services engineering. Mr. Cheng is specialized in energy analysis through MVAC system – waterside, airside and control system diagnosis. He is also an expert in BMS control system, including programming & tuning of various BMS controllers & software such as Johnson Controls, Siemens and Honeywell. He has extensive knowledge of ventilation measurement by use of tracer gas and other decay methods and is specialized in electrical power quality measurement.

3. Verification of Greenhouse Gas Emissions

Our service team provides organizations preparing Greenhouse Gas Emission Inventories with third-party verification services to comply with current or future GHG reporting regulations. These services include:

- Baseline determination
- Calculation of reduction potential
- Verification of system boundaries
- Validation of relevant data and documents
- Verification of algorithms and emission factors used for calculations
- Verification of completeness of inventory
- Preparation of verification/certification report according to systems requirements
- Calculation of reduction potential

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Ms. Ning Zhu Senior Engineer

Ms. Zhu is a Senior Engineer of the Company. She has over 10 years' experience in building services engineering and is specialized in conducting carbon audit and GHG footprint inventory. Ms. Zhu is a member of the Energy Institution and a Chinese Certified Cleaner Production Auditor issued by the China National Cleaner Production Center. She has various publications in both local and international journals and conferences discussing environmental issues.



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