



The Global Trend of Energy Saving and Carbon Reduction in the Post-Kyoto Protocol Era

Chih-Lun Chen

Market Intelligence & Consulting Institute (MIC), Institute for Information Industry, Taiwan

(Received 3 October 2011; Published on line 1 December 2011)

Corresponding author: chihlun@micmail.iii.org.tw

DOI: [10.5875/ausmt.v1i2.109](https://doi.org/10.5875/ausmt.v1i2.109)

Energy Saving and Carbon Reduction Are Global Political and Economic Issues

In recent years, with increased focus on extreme global climates, the drastic population growth, and the exhaustion of resources, humanity has a greater need for and reliance on intelligent, technology-enhanced living, as well as more effective means of production. Being sustainable, green, and environmentally friendly is becoming more and more a global priority. Energy saving and carbon reduction are the keys to achieving intelligent living, clean production, and environmental responsibility.

The United Nations Conference on Environment and Development (UNCED) convened in Rio de Janeiro, Brazil, in 1992. One hundred and fifty five countries jointly signed the United Nations Framework Convention on Climate Change (UNFCCC). This treaty and the Conference of the Parties are the origins of the Kyoto Protocol. The Kyoto Protocol became effective in February, 2005, and required 38 industrially developed countries in the European Union and the United States to reduce emissions of six kinds of greenhouse gases, including CO₂, from their 1990 levels by a further 5.2%, which equates to about 12.86 billion tons between 2008 and 2012.

The Intergovernmental Panel on Climate Change (IPCC) stated in the Fourth Assessment Report (AR4) [1], issued in 2007, that global warming resulted from anthropogenic global warming (AGW). In addition, AGW further caused extreme climates, melting icecaps, and rising sea levels. Although the causes and effects have been debated among nations, it is undeniable that global

warming resulted in the wheat-producing areas of the world moving north, as well as the clear opening of the Northwest Passage, which has facilitated the exploitation of the resources in the polar region. Russia, the United States, Canada, Denmark, and Norway have all longed to benefit from the resources in the polar region. Sustainability and development are now not only environmental issues, but also political and economic battlefields for nations.

In 2012, with the expiration date of Kyoto Protocol approaching, how should people set goals toward energy saving and carbon reduction in the post-Kyoto Protocol era? The future is full of uncertainties because of the scrambling for benefits between countries and groups. The intelligent living and the developments of automation and energy saving technologies based on the theory of energy saving and carbon reduction are also turbulent. The COP17 of UNFCCC will be held in Durban, South Africa in November, where it is possible to end the present dissent.

Scramble of Benefits Brings Disputes on Carbon Reducing

The initial goal of COP15 held in Copenhagen, Denmark, 2009, was to coordinate with the Kyoto Protocol, aiming to connect the Secondary Phase of Commitment effectively after the First Phase of Commitment ends in 2012. By doing so, the hope was to keep carbon emissions in check during the window of unmonitored time. Unlike the Kyoto Protocol, the signed Copenhagen Accord didn't specifically indicate the goals for all countries regarding carbon emission, which



diminished the effectiveness of the bidding mechanism formed from the Kyoto Protocol. However, under the condition of ensuring that the global temperature will be kept under control and will not increase by more than 2 °C, all nations, from the citizens to the governments, have set their own goals to reduce carbon emission based on their own economies and techniques, which has been agreed upon globally. From the viewpoint of economic development, it is needless to say that the limitation of greenhouse gas emissions is another new pressure to deal with while countries are trying to dig out of financial crises.

By the end of 2010, 138 countries had agreed to and joined the Copenhagen Accord. Those 138 countries account for 86% of global carbon emissions. However, how to legally enforce new standards for carbon emission is still unclear. All countries have to defend themselves and protect their interests, so a difficult situation has arisen. What follows are some aspects and points of view proposed by some key countries involved.

1. Japan: A new global mechanism for carbon reduction shall be established.

At the recent COP16 held in Cancun, Mexico, it was a surprise when Japan proposed that unless those countries that emit most of the greenhouse gases, such as China and the United States, were included in the plans for carbon reduction, Japan would not commit to the goal set in the Secondary Phase of Kyoto Protocol. The Umbrella Group Countries, including Canada, Russia, Australia, and New Zealand, supported Japan's stance. Japan implied that the Copenhagen Accord should be used as a base, acting as a principle for each country to reduce carbon emissions voluntarily, and all countries should also create a new global mechanism for carbon reduction. Furthermore, countries such as China and the United States should not allow the emission of greenhouse gases without regulatory limitations, thereby ignoring the rights of other countries. As a mid-term goal, Japan committed to a 25% greenhouse gas reduction by 2020 compared to their 1990 level. However, it remains to be seen if the goal will be affected by the catastrophic earthquake which occurred in mid-March of 2011. Japan is now under constant observation.

Mr. **Chih-Lun Chen's** research areas include industry technology screening and evaluation, blueprint planning of industrial technology development, and hometown development. Mr. Chen has participated in the project "2020 Taiwan Industry and Advanced Technology Research", commissioned by the Ministry of Economic Affairs, responsible for strategy analysis of insurance industry and technology analysis of disaster management and risk reduction. Mr. Chen holds a Master's degree in geography from National Taiwan University.

2. United States: Developing countries shall be included in the binding mechanism of carbon reduction

After President Bush announced quitting the Kyoto Protocol in 2001, the United States remained careless about global carbon reduction activities. In the Copenhagen Accord in 2009, however, the United States rejoined the international discussion about energy saving and carbon reduction. Regarding the Secondary Phase of Commitment in the Kyoto Protocol, the United States determined that they would not sign it unless developing countries such as China proposed legally enforced carbon reduction commitments. In the Copenhagen Accord, the United States proposed to take the carbon emissions of 2005 as a base, and will reduce emissions by 17% by 2020. However, it was suspected by other countries that in comparison to the countries that took 1990 as a base, using 2005 as a base could be a trick. Additionally, the Democrats in Congress, who strongly promoted green policies, lost the congressional elections in the end of 2010, thereby reducing the possibility of realizing the 17% carbon emission reduction by 2020.

3. China: Focus on "Common but Differentiated Responsibilities" mechanism to distribute the responsibility of carbon reduction

China, on behalf of the developing countries, asserted its position on the Kyoto Protocol. China thought that the Secondary Phase of Commitment should remain the spirit of the First Phase of Commitment, distributing the work of carbon reduction internationally with a "Common but Differentiated Responsibilities" principle. The developed countries should take the historical responsibilities and work on carbon reduction activities, and save time and space for developing countries to work on carbon reduction. In a meeting of the National People's Congress held in March 2011, China proposed to reduce carbon emissions by 17% in all of China with the 12th five-year plan. However, considering that several provinces like Henan had policies of limited power in order to achieve the goal of carbon reduction through the 11th five-year plan, how this will be implemented and its effectiveness will be interesting to see.

4. EU: Support the Secondary Phase of Commitment in the Kyoto Protocol with conditions

Countries in the EU would like to set a goal of carbon reduction toward the Secondary Phase of Commitment under the condition that all "major economies" are included in the Kyoto Protocol.



Regarding setting a goal on carbon reduction, the CO₂ emissions of the EU in 2009 had been reduced by 17.3% compared to 1990 levels, which indicated that there is not much difference with the 20% reduction by 2020. Some members are promoting the goal of 30% reduction. In the long-term, it is expected to reduce emissions by 60-80% by 2050 compared to 1990 levels. Furthermore, the EU not only set a higher goal on carbon reduction, but also provided low-carbon techniques and funds to developing countries. Developing low-carbon industries is expected to increase the employment rate and GDP, thereby enhancing competitiveness.

5. Russia: A supporter on carbon reduction plans with considerations of the benefits of warming

Russia is a special case. Except responding to the statement that Japan made toward the Secondary Phase of Commitment in the Kyoto Protocol in COP16, another worthwhile point to focus on was that Russia might be the greatest beneficiary of global warming. Warming not only allows for an increase of food and the opening of channels to the Arctic Ocean, but Russia can also gain most of the resources from the Arctic Ocean to trade for great benefit. In recent years, Russia exported abundant gases and oil to adjacent and western countries, which resulted in a great improvement of its political and economic influence. If Russia could take over the resources of the Arctic Ocean, it could play an extremely important role in the future.

The COP17 at the end of this year carries a responsibility to regulate the standard of reducing greenhouse gas emissions in the post-Kyoto Protocol Era for every country. According to the status quo, being willing to reduce emissions is possibly a new solution. Under this presupposition, how do people establish a credible third party monitoring program? Is every country able to propose the direction of carbon reduction year by year? How do governments practice the “Measurable, Reportable, and Verifiable” (MRV) method proposed in the Cancun Agreement? How do people distribute and use the funds of green climates? These questions are tough tests for the future.

An Overall Strategy and Thinking are Necessary to Energy Saving and Carbon Reduction

The international situation regarding carbon emission reduction can be summarized as follows: China and the United States use cost of energy saving and national influence as strategies; the EU uses exporting techniques and promoting the area itself as long-term goals; arctic countries hope to capitalize on the abundant energy resources that could be available; and even the survival of small island countries needs to be considered. Everything is worth in-depth reflection and research. Promoting the goal of energy saving and carbon reduction are small steps. Being in the midst of intense competition among nations, sustainable development is an inevitable subject. In order to confront the post-Kyoto Protocol era, it is necessary to juggle the specific situations of different countries, while keeping to the directions discussed in COP17 and other COP meetings. Furthermore, global regulations related to rules of energy saving and carbon reduction are necessary to develop energy saving technologies that lead to intelligent living and an enhanced quality of life. Regulations should also help the governments think about an overall strategy based on national benefit.

References

- [1] IPCC fourth assessment report: Climate change 2007 (AR4). Geneva, Switzerland: The Intergovernmental Panel on Climate Change, 2007. Available: http://www.ipcc.ch/publications_and_data/ar4/syr/en/contents.html
- [2] Y. Murasawa, *TE NI TORU YOUNI CHIKYUONANKA GA WAKARU HON* (手にとるように地球温暖化がわかる本), Japan: Kaniki Publishing Inc., 2008.

