

# Japan Should Quickly Ratify the Kyoto Protocol!

~ Early action is beneficial to Japanese economy ~

In July 2001 the Bonn Agreement was reached. Japan, which holds the key to bringing the Kyoto Protocol into force, must ratify the protocol as soon as possible, and put into practice measures, which will result in substantial reductions of greenhouse gases in order to meet the 6% reduction target. In spite of this, recently in Japan there is opposition to ratification of the Kyoto Protocol. In this paper we will point out the problems with these arguments, and reconfirm the significance of ratifying the Kyoto Protocol.

## 1. Since 1990 Japan's CO<sub>2</sub> emissions have increased in spite of decreased production

Since the Japanese bubble economy burst in the early 1990's, even though there has been approximately 1% average annual economic growth in terms of GDP, CO<sub>2</sub> emissions have risen by more than 9%. This trend is much different from that of the EU, which has kept CO<sub>2</sub> emissions almost level, even though it had an annual average growth rate of approximately 1.5% (See Figure 1).

Since 1990, in the industrial sector, production in the steel and cement industries has fallen by about 10%, and the number of automobiles produced has decreased by more than 25% (See Figure 5 on page 3). Nevertheless, CO<sub>2</sub> emissions continue at the same levels. Industrial sector efficiency (unit of energy consumption per index of industrial production) has deteriorated by more than 17% since 1990 (For the buildings, households and services and transportation sectors see section 6).

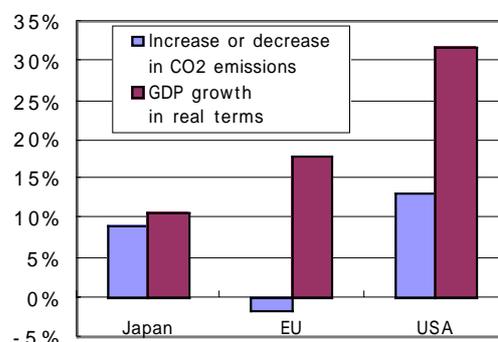


Figure 1 1999 CO<sub>2</sub> Emissions Volumes Compared to 1990

Industrial sector efficiency (unit of energy consumption per index of industrial production) has deteriorated by more than 17% since 1990 (For the buildings, households and services and transportation sectors see section 6).

## 2. Emissions increase since 1990 is due to inadequate countermeasures

Some people are of the opinion that because of emissions trends since 1990, the Kyoto Protocol is disadvantageous for Japan, which has increased emissions since 1990, compared to the EU, which has decreased emissions during the same period. This situation reflects the amount of effort each country has made during this time period. For countries whose efforts were inadequate, doesn't make sense to say they have a disadvantage in spite of insufficient effort.

This reasoning might be acceptable if global warming was not apparent in 1990. However, in 1990 scientists from the IPCC (Intergovernmental Panel on Climate Change) had already issued strong warnings about the threat of climate change and adopted their first report urging countermeasures to be taken. In addition, Japan in the same year, had already adopted the "Action Program to Arrest Global Warming". Since 1990, the reason why Japan's emissions have increased is most likely because the countermeasures taken were inadequate.

## 3. Japan's future emissions projections are based on excessive estimates

Some people are of the opinion that in a business as usual (BAU) scenario, when no global warming countermeasures are taken into consideration, Japan's CO<sub>2</sub> emissions will increase by about 20% by 2010. They argue that in order to meet the 6% reduction target, Japan will have to reduce emissions by 26%, which puts the country in a much more difficult position than the EU which has a BAU scenario which is level. However, the BAU scenario differs from country to country, and it is not really useful to compare these scenarios. For instance, CO<sub>2</sub> emissions in Japan's BAU scenario are overestimated because the GDP growth rate (which was calculated prior to the Kyoto Conference and inherits a 3% increase until 2000, and a 2% increase every year afterwards) and raw materials production volumes are excessively estimated. A recent report by the Central Research Institute of Electric Power Industry (CRIEPI) considers the BAU scenario to be around 13%, which is much more reasonable than the 26% figure.

#### 4. Since the 1970 ' s oil crisis, energy saving efforts has been similar for most countries

With regards to achievement of the Kyoto Protocol reduction target, which has a base year of 1990, some people are of the opinion that Japanese industry made great efforts to reduce energy consumption from the time of the oil crisis until the year 1990, and that further reductions will be impossible to achieve.

However, is it true that since the oil crisis, Japan is the only country that has made efforts to save energy? A comparison of primary energy consumption to overall GDP since the first oil crisis in 1973, shows that Japan has improved efficiency by almost thirty percent, whereas other western countries (excluding France) are about the same with improvement rates of between about 20 - 30%. When we look only at the industrial sector, Japan, the United States, and European countries all have improvement rates of 40 – 50% (See Figure 2).

By looking at it this way, Europe and the United States have made similar efforts, and therefore it is not correct to claim as if Japan is the only country, which has made an effort to reduce energy consumption. It is important that all industries in all developed nations act now to make further efforts in order to solve the problem of global warming, in addition to their energy saving efforts prior to 1990.

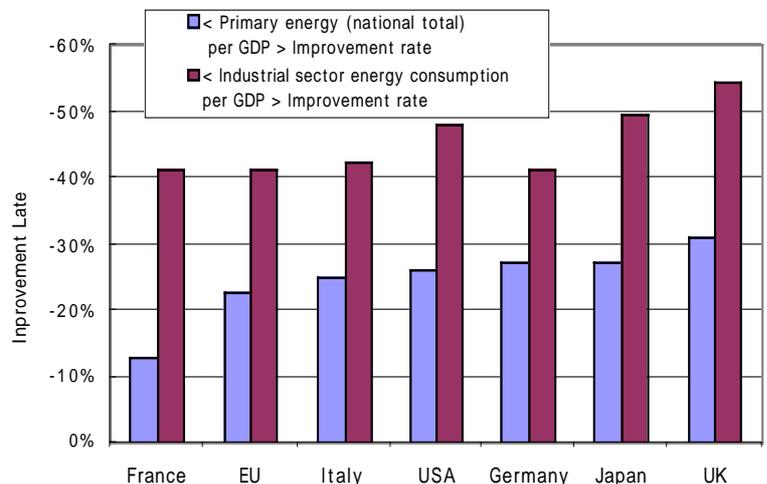


Figure2 Improvement Rate of Energy Consumption Per GDP From 1973 to 1990

#### 5. Japan ' s industrial sector energy efficiency is about the same as that of other countries

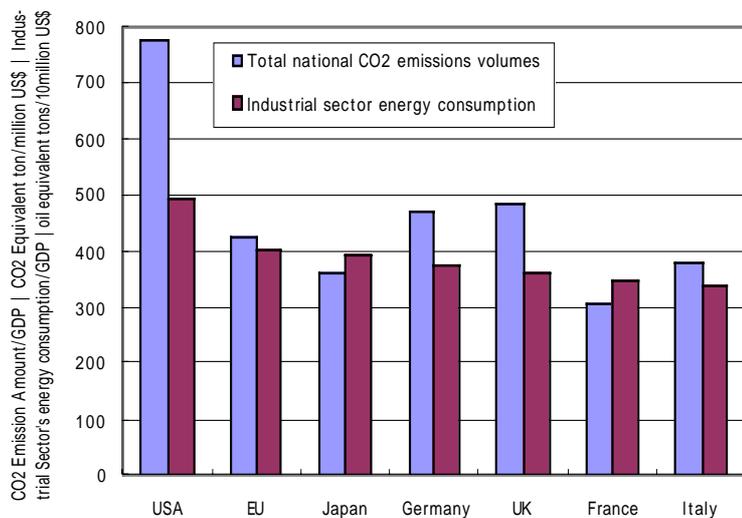


Figure 3 Total National CO2 Emissions Volumes and Industrial Sector Energy Consumption Per GDP

An international comparison of CO2 emission volumes per GDP, confirms that Japan has high energy-efficiency. However, just comparing industrial sector energy consumption will show that Japan's energy efficiency is below that of the four largest European countries (See Figure 3). The reason for Japan's total high efficiency rate is due to higher efficiency in the transport and buildings, households and services sectors compared to other European countries (See Figure 4 on the next page).

It is not correct to say that energy saving efforts by the industrial sector has reached their physical limits and that further energy saving efforts will be difficult to achieve. If one takes into consideration that the Japanese economy has been in a recession since 1990, there is a still room for increased efficiency improvements.

#### Japan Should Not Wait For the US ' s Participation

Some people are against Japan ratifying the Kyoto Protocol because they feel that the US's non-participation means that the Kyoto Protocol will be ineffective. However it was agreed as a major premise that advanced nations must promote measures to combat global warming, and it is unacceptable that Japan does not act until the US returns to the protocol. National Institute for Environmental Studies has conducted a study about CO2 emission reduction effects which compares outcomes of a scenario in which Japan and the EU go in advance and take action now, to if they wait until the United States returns and then take action. The findings show that it would be more effective to proceed with the Kyoto Protocol even without the USA's participation. Of course, the US is the world's largest emitter of greenhouse gases and therefore it goes without saying that all efforts should be made to call for its return to the protocol.

## 6. Achieve buildings, households and services and transport sector reductions by implementing appropriate policies

The reason why Japan's overall energy efficiency is high is because energy efficiency of buildings, households and services and transportation sectors is higher than that of the United States and various European countries (See Figure 4). This is partially because of Japan's particular conditions, such as high population density, warm climate, small houses which require less energy for cooling and heating, and widespread passenger train services.

However, since 1990, CO<sub>2</sub> emissions in the buildings, households and services and transportation sectors have drastically increased due to utilization of larger size automobiles and other electric appliances. Therefore, appropriate measures to increase efficiency and reduce emissions volumes, such as strengthening of energy saving regulations and implementation of various inducement policies, must be taken as soon as possible.

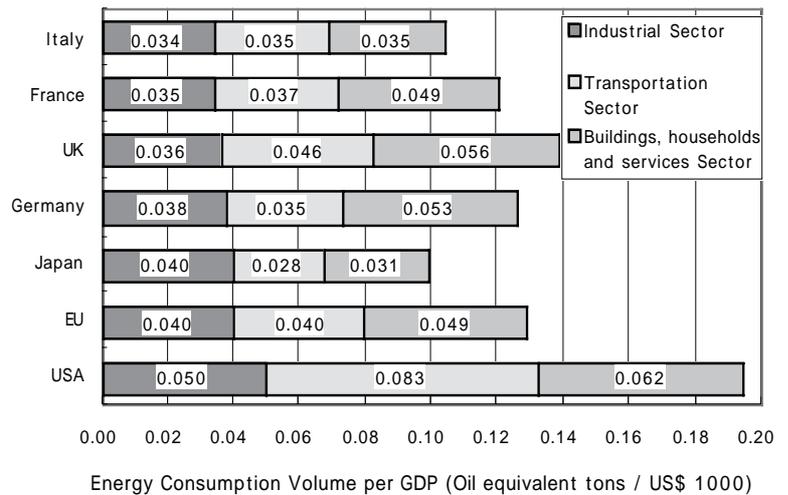


Figure 4 Energy Consumption by Sectors Per GDP (1998)

## 7. The base year being in the height of the bubble period is advantageous for Japan

Some people believe that the base year of the Kyoto Protocol (1990) is disadvantageous for Japan. However, 1990 falls at the peak of the bubble economy, and in actuality, this works out favorably for Japan. As of 1990, the Japanese economy became stagnant, and manufacturing industry production volumes have decreased (See Figure 5). For this reason, the 1990 base year is advantageous for Japan.

In 1988 Japan's CO<sub>2</sub> emissions were 6% less than 1990. This shows how fast CO<sub>2</sub> emissions were increasing during the bubble period.

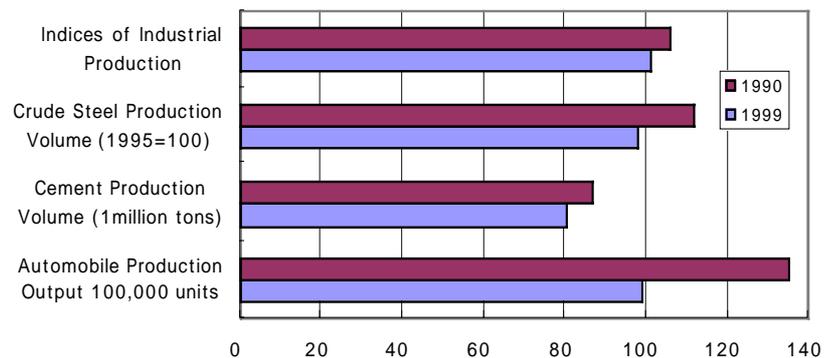


Figure 5 Comparison of 1990 and 1999 Manufacturing Industry Production Volumes

### The impact of global warming countermeasures on the economy

Some people feel that implementing measures to prevent global warming under the Kyoto Protocol will have a bad effect on the Japanese economy (GDP).

According to calculations by environmental NGOs, the opposite is true. By implementing energy saving countermeasures, the industrial sector will be able to cut costs, and make a profit at the same time. Also, there are reports, which show that by developing energy saving products companies will become more internationally competitive. Therefore it can be said that prevention of global warming will lead to a sound Japanese economy.

Even in National Institute for Environmental Studies report, which does not take into consideration the positive benefits of global warming countermeasures, the negative effect of these countermeasures is assumed to be very little; even in the event that the United States does not participate in the protocol. As consumers become more environmentally aware, companies, which take the lead in developing products and equipment which prevent global warming will gain market share, and a technically stronger Japanese manufacturing industry can be expected.

## 8. Is the theory about “special circumstances”

for the UK and Germany being advantageous for the EU really true?

Some people feel that the UK and Germany have “special circumstances” and therefore the Kyoto Protocol is more advantageous for the EU than for Japan. These “special circumstances” can be explained as follows.

The UK’s “special circumstance” refers to a fuel shift away from coal to natural gas, which began in about 1990. This fuel shift, along with energy saving measures resulted in an 8% emissions reduction by 1998. Some people point out that the aim of this policy was not to prevent global warming. However, the UK has agreed to reductions of 12.5%. This target is more than double that of Japan, and aims to return CO<sub>2</sub> emissions to 1947 levels. In 1990, average CO<sub>2</sub> emissions from all fossil fuels per unit were about the same in the UK and Japan, (See Figure 6) and there was sufficient room for Japan to make a similar fuel shift during this same time period.

The “special circumstance” of Germany is that since German unification, efficiency improvements from industries in the former East Germany has made emission reductions easier to achieve. However, it should be noted that Germany has accepted a reduction target of 21%, which is more than 3.5 times Japan’s reduction target, and will reduce emissions volumes to 1960’s levels. Moreover, Germany has invested enormous amounts of capital into the rehabilitation of the former East German region, and the political and social cost of domestic reconciliation has also been high.

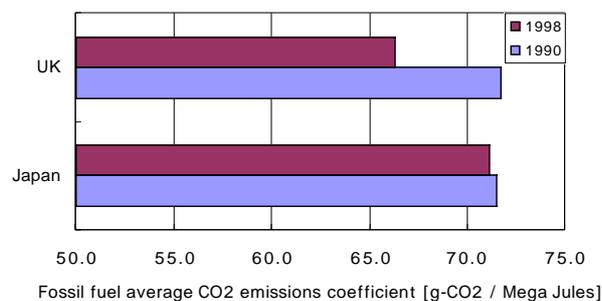


Figure 6 Comparison of Fossil Fuel Consumption in Britain and Japan (1990 and 1998) (Fuel average CO<sub>2</sub> Emissions Coefficient)

The ratification of the Kyoto Protocol and the achievement of its reduction targets are an important first step in building a society, which prevents global warming. Japan's ratification will not only ensure entry into force of the Kyoto Protocol in 2002 - thereby advancing international measures to prevent global warming - but it will also speed up the implementation of domestic global warming countermeasures. Global warming countermeasures are also indispensable for shifting to an environmentally friendly economy, and will bring about beneficial results for Japan. Climate change is occurring as we speak. Time is limited; Japan should ratify the Kyoto Protocol as soon as possible.

### Explanation: With regards to GDP data

- Figures 2, 3, 4 energy and GDP data were taken from “Energy Balance of OECD Countries”. This book uses unified values for 1990 rates (prices of goods, and exchange rates). Furthermore, by using purchasing power currency values rather than simple foreign exchange rates, Japan’s GDP becomes relatively smaller than other major advanced countries, so energy and CO<sub>2</sub> volume per GDP becomes larger (gets worse).
- In this type of comparison, it should be noted that “per GDP” refers to national economic figures. It should be taken into consideration that each country’s industrial composition and natural conditions differ.

### Footnotes

- Central Research Institute of Electric Power Industry (CRIEPI) “Effect on Japanese Economy and Energy Demand Due to Environmental Tax Implementation” (September, 2001)
- National Institute for Environmental Studies, AIM Project Team “The Effects of Global Warming Prevention as a result of Entry Into Force of the Kyoto Protocol” (June 8, 2001)
- Kiko Network “Policies and Measures to Achieve 6% Reductions - From an Environmental NGO Perspective” (October 29, 2000)
- WWF Japan “Will Ratification of the Kyoto Protocol Bring About Economic Loss?” Yasuhiro Murota and Kae Takase (July 6, 2001)
- National Institute for Environmental Studies, AIM Project Team “The Effects to GDP of the year of 2010 as a result of Entry Into Force of the Kyoto Protocol” (June 8, 2001)
- With regards to the UK and Germany’s “special circumstances”, the information is taken from a summary of a think tank drafted report, commissioned by the German government. According to the report, the UK and German reduction volumes by the year 2000 have surpassed the reduction volumes of these countries’ “special circumstances”. The summary was submitted as reference materials to the Central Environmental Council Domestic Institutions Subcommittee (October 19, 2001 Reference Material 4)

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