

2002: Opinions on *Japan's Third National Communication Under the United Nations Framework Convention on Climate Change*

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I. Introduction of People's Research Institute on Energy and Environment

The People's Research Institute on Energy and Environment (PRIEE) is a non-governmental research organization established in 1978 to carry out a wide range of activities. Since 1991, we have especially devoted efforts to review the government's "*The Long-term Energy Supply and Demand Outlook*," which serves as the basis of Japan's energy policies. We were the first NGO that made policy recommendations (published reports in Japanese and English in 1992 and 1993, and a report in book form in 1994) based on our review of the "*Long-term Energy Supply and Demand Outlook (1990)*" and simulations of the supply and demand of energy.

We then reviewed the "*Long-term Energy Supply and Demand Outlook (1994)*" and the "*Very Long-term Energy Supply and Demand Outlook (December 1996)*." Prior to the 1997 Kyoto Conference, in particular, we analyzed the government's estimated amount of CO₂ emissions and pointed out the problem areas in the "*Very Long-term Energy Supply and Demand Outlook*" which served as the backbone of the Japanese government's policy for the reduction of CO₂ emissions. At the Kyoto Conference, we also presented our simulation of cutting CO₂ emissions by 20% of the 1990 level by 2005.

In the Joint Meeting of Coordination Subcommittee and Energy Supply and Demand Subcommittee held to review the "*Long-term Energy Supply and Demand Outlook (July 2001)*," we, the People's Research Institute on Energy and Environment presented the simulation with the conclusion that "it is possible for Japan to achieve CO₂ reduction by 2010 and to free itself from an energy-wasting society by 2020." We offered a concrete vision of energy policies that would realize CO₂ reduction without any dependence on nuclear power. We will point out the problem areas of the Report (*Japan's Third National Communication Under the United Nations Framework Convention on Climate Change*) based on our practical experiences mentioned above.

II. About the Report "*Japan's Third National Communication Under the United Nations Framework Convention on Climate Change*"

1. Problem Areas in Chapter 3 "Policies and Measures"

Chapter 3 of the Report advocated the following: "provides an overview of the specific

measures to achieve the 6% reduction commitment” (p.73, English version); “we will steadily quantify how to achieve the 6% reduction commitment” (p.75); and “...policies to promote such measures to evaluate and review based on objective factors.” (p.75). These messages are not in keeping with the description in section 3.4.2 “Promotion of a reduction in Carbon Dioxide Emissions focused on measures related to energy supply and demand,” the contents of tables 3.1 to 3.5, or the description in the table.

The tables show the “target amounts,” and the quantitative amounts of the energy-saving effect and the estimated emission reduction. However, they are just target values, not reduction amounts that can be achieved with certainty. It is clear that the target values are unlikely to be achieved under the current policy scheme. This is also evident from the fact that they are to be reviewed in 2004 and 2007 to incorporate additional policies and measures deemed necessary, as well as the fact that the introduction of carbon tax has not been incorporated in the measures taken this time and that there are discussions on its introduction in 2005.

While claiming that it provides specific and quantitative measures, the Report states that it is necessary to “reverse the trend for ever-increasing total amounts of greenhouse gas emissions to the downward trend at an early stage.” Here, the Report failed to clarify when this “reversal” of the trend would take place. It is also unclear whether the present state of leveling off is brought about by implementation of policy measures, and therefore emissions would eventually turn to decline, or whether it is a result of a recession, which was notable in 1997 and 1998.

2. Section 4.2.1 “Future outlook for CO₂ from energy sources”

The section 4.2.1 “Future outlook for CO₂ from energy sources” repeats some of the contents of the paragraph in section 3.4.2 <Reduction in Carbon Dioxide Emissions from Energy Sources> (p.78). Its explanation as a future outlook is inadequate.

The Report shall present a future perspective to correspond to Table 2.3 “Carbon Dioxide Emission and Removals” and Table 2.4 “Carbon Dioxide Emissions” on p.41. However, it did not use the sector-based outlook shown in tables 2.3 and 2.4 but merely described them in the text as the industrial sector, residential/commercial sector, and transportation sector. The trial calculation was based on the report compiled by the Advisory Committee for Natural Resources and Energy, which makes decisions on energy policies. It is believed the Report tried to hide the fact that the Committee’s report only showed the estimated total amount of CO₂ in 2010 and did not disclose the estimated amounts for each sector.

In the actual results, most industries are included in the 1A2 Manufacturing Industries and Construction; however, industries of agriculture, forestry, and fisheries are included in the 1A4 Other Sectors (Residential/Commercial Sector and Agriculture/Forestry/Fisheries Sector). As a result, it is not possible to compare the

numerical values in the Report, which was prepared in such a way as to make it impossible to review the validity of the future outlook.

By making a comparison of the actual results of FY 2000 and the targets for FY 2010 as shown in the following table, the unnaturalness of making the Residential/Commercial sector shoulder a great portion of the required CO₂ reduction becomes evident.

CO₂ Emission from Energy Sources and Future Outlook

(Unit: million tons of CO₂)

Sector	Base Year	FY 2000 Actual Emissions	FY 2010 Projection Cases with Additional Measures	Required Amount of Reduction based on FY 2000 Actual Emissions
Industrial	490	495	462	33
Transportation	212	256	250	6
Residential/ Commercial	262	318	260	58
Residential	138	166	NA	?
Commercial	124	152	NA	?
Fuel Switching	77	86	80	6
Total	1,041	1,155	1,052	103

The base year and the FY 2000 actual results are derived from GHG Emissions in FY 2000 (Ministry of the Environment).

There is also the “Other “ sector and its emission for the base year is 11.

3. Section 4.3 “Estimation methods” and section 4.3.1 “CO₂ emission from energy sources”

Here in this section, only simple explanation and a table showing the eight premises used in estimating future outlook are given. No information on reference materials is provided, making it impossible for readers in Japan and overseas to evaluate the validity of the method used in the estimation.

4. Japan’s Energy Policy and CO₂ Reduction after the Kyoto Conference

In order to achieve the reduction commitment of 6% compared to Japan’s base year level as stipulated in the Kyoto Protocol (COP3), it is necessary to achieve an additional reduction of 13% (equivalent to approximately 165 million tons of CO₂) in addition to the current measures undertaken. In regards to the “*Long-term Energy Supply and Demand Outlook*,” which serves as the basis of Japan’s energy policies, “case with measures” identified in the June 1998 “*Outlook*” were designated “BAU case” in the July 2001 “*Outlook*.” However, it still failed to reduce CO₂ emissions to

the base year level. Thus, “target case,” which is classified as the “case with additional measures” in this Report, was set up this time. It is doubtful, however, that these measures will be effective.

Issues Concerning New Energy

With regard to the introduction of new energy, although the Report gave the impression that various policies have been taken for photovoltaic power generation, wind power generation and other new energies; in reality, there were few policies for the introduction of new energy. The national budget was too scanty to carry out any large-scale diffusion and promotion, and the policy for introduction lacked a long-term perspective. For example, photovoltaic power generation was 4.82 million kW (including photovoltaic power generation for housing: estimated approximately 1 million units) as described in the additional measures and their effects in Table 3.4 “New Energy Measures” (p.102). However, in reality, the amount of subsidy provided to households that used photovoltaic power generation was cut to one-third in 1997 from one-half of the amount when the policy stipulating subsidization was first adopted in 1994. The amount of subsidy in 1999 diminished to 330,000 yen. Furthermore, in the year 2000 the subsidy amount was cut three times in one year (270,000 yen/kW, 180,000 yen/kW, then 150,000 yen /kW). The amount dropped to 120,000 yen in 2001 and to 100,000 yen in 2002, resulting in many people declining subsidization from 2001. Since the installation cost is about 2 million yen for 3 kW, the current subsidization system discourages the introduction of photovoltaic power generation. Also, with the allocated budget unused, the current system cannot be said as a viable measure for CO₂ reduction.

The Issue of Nuclear Power

In section 3.4.2 “Promotion of a reduction in Carbon Dioxide Emissions focused on measures related to energy supply and demand,” (p.78), under <Promotion of energy supply side Carbon Dioxide Emission reduction>, (3) “Promotion of nuclear power” (p. 104), the Report stated “...the construction of new nuclear power plants is required with the aim of increasing nuclear-generated electricity by around 30% by fiscal 2010 compared to fiscal 2000.” This claim is quite impossible.

The amount of nuclear-generated electricity in FY 2000 was 322 billion kWh. (The capacity of power generating facilities was 45.24 million kW and the utilization rate of facilities was 81.7%). A 30% (96.6 billion kWh) increase will make the amount of nuclear-generated electricity to 418.6 billion kWh. However, the facilities’ power-generating capacity as of the end of March 2002 was 45.74 million kW. Assuming the three generators currently under construction will be completed in 2005, adding the 3.56 million kW, they will produce a total amount of 49.3 million kW. Given the capacity of these facilities, when they generate 418.6 billion kWh, the utilization rate of the facilities will be 97%. Assuming another two generators will be added in 2008, the utilization rate of the facilities will be 93% (estimated using

information materials from the 4th Electric Power Development Committee under the Advisory Committee for Natural Resources and Energy. Such hypothesis is quite unreasonable.

Any CO₂ reduction plan that relies on nuclear power shall be abolished. Increasing nuclear power generation as a measure for CO₂ reduction is beyond consideration. Nuclear power shall not be used because it will create radioactive waste. The lack of viable solution to deal with nuclear waste will only burden our environment.

III. Our Projection

In April 2001, we presented the scenario and simulation for energy policies—under the theme of “it is possible for Japan to achieve CO₂ reduction by 2010 and to free itself from an energy-wasting society by 2020—to the Joint Meeting of Coordination Subcommittee and Energy Supply and Demand Subcommittee for reviewing the “*Long-term Energy Supply and Demand. Outlook*” We conducted the simulation of a case (in which GDP is 0%) that would achieve zero nuclear power by 2025 as well as cut CO₂ emission by 7.7% compared to the 1990 level by 2010. In light of Japan’s economic situation today, the FY 1998 GDP turned out to be minus 2% compared to the previous year, just as we projected. Due to a lack of energy policies, it was quite impossible to cut energy consumption and CO₂ emission. Thus, besides steadily pursue energy conservation; we must actively introduce new energy-saving technology, micro gas turbine, co-generation, fuel cell, etc.

- (1) Control energy consumption: The GDP shall be kept at 0%. Efforts shall be made to refrain GDP from expanding, to maintain the current condition, and to institute changes in lifestyle and industrial structure.
 - In the industrial sector, other than those energy-consuming industries, all other industries together shall make an extra 1% annual saving in energy. Industries shall strive to realize their voluntary action plans.
 - The commercial sector shall incorporate energy-saving measures such as insulation in newly constructed buildings.
 - The residential sector shall pursue energy saving by increasing the insulation of existing housing and upgrading the efficiency of electrical appliances.
 - For the transportation sector, improving fuel efficiency is not sufficient. Efforts shall be made to reduce the number of vehicles and to reduce energy consumption by actively promoting the use of smaller cars.
- (2) In terms of the supply side, the government shall adopt new and drastic energy policies, and back them up with a national budget large enough to set up a new

industry. The “*Long-term Energy Supply and Demand Outlook*” estimated 40 million kl in 2020 and 80 million kl in 2030. Measures shall be taken to accelerate the realization of these targets.

Nuclear power-generation shall be abolished on a per capital basis (-5.5%) by 2025. Efforts shall be made to effectuate a shift to a new mix of electricity sources. Without a daring change in energy policy as mentioned above, reducing CO₂ emission in Japan will not be possible.