

technological means of further controlling the emission of NO_x .

Other means of reducing emission levels which are being used by a number of Japanese industries include the recycling of inert gases as a coolant, two stage combustion, and the introduction of catalytic denox facilities.

However, the NO_2 problem has not been solved, particularly in urban areas. Automobile and urban pollution has left Japan at double its target emission levels. Currently the Japanese are concentrating on developing methods of alleviating the this problem.

CO_x Emissions

Significant progress has been made in the development of technology to reduce CO_2 and CO emissions. Japan first set strict CO_2 emission standards in the early 1970's. These standards were primarily designed to reduce automobile emissions which were causing significant problems, particularly in urban areas. These strict standards led to considerable technological innovation, including the development of the dimensional catalyst converter for the automobile engine. By the end of the 1970s, the problem was largely corrected, and by the late 1980s, levels of CO_2 emissions in Japan compared

very favourably with those in other developed countries (see next page).

In 1990, the Japanese government decided to commit to a further reduction. It set as its goal the stabilization and reduction of CO_2 emissions on both a per capita and net basis. Toward that end, 1990 CO_2 emission levels were established as a target for maximum CO_2 emissions in the year 2000. Based on Japan's average annual growth rate of 4%, this would constitute a 50% reduction in real terms.

Generally speaking, this goal is being pursued in five ways, all of which could be utilized in an attempt to reduce the emission of other pollutants as well. They are:

1. Urban structure change;
2. Changes to the transportation system;
3. Production systems that produce low levels of CO_2 ;
4. Changes to the energy production supply system; and
5. Lifestyle changes.

From a purely technological perspective, there have been a number of innovations related to reducing CO_2 emissions that could have global application. For example, it was discovered that by condensing CO_2 and adding hydrogen (H_2) through a catalyser, it is possible to produce