



## Key Issue I Managing CO<sub>2</sub> Emissions

### Reducing CO<sub>2</sub> from Our Business Operations

Nissan regards carbon dioxide (CO<sub>2</sub>) emissions management to be one of the most pressing challenges we face today. In connection with the continuous growth we are experiencing in our production volume, the key challenge is how we can best approach this issue on a global scale and with a long-term perspective.

To this end, we make a concerted effort to reduce emissions of CO<sub>2</sub> in each of our business operations including planning, engineering, production, and logistics. In production, for example, by implementing energy-saving measures such as replacing older equipment with newer, more efficient equipment, we are able to manufacture various models on single integrated lines. This means that, rather than shutting down and restarting the assembly line for each different model, it is much more efficient to assemble all vehicles in one single line, thereby minimizing any potential time loss and reducing CO<sub>2</sub> emissions.

In logistics too, we promote an energy-efficient "modal shift", which means whenever possible we are moving away from conventional truck transport toward the use of railroads and ships, as these generate lower CO<sub>2</sub> emissions. Parallel to these measures, since beginning with overseas production, we have reduced our logistics volume considerably by localizing our production worldwide reducing our exporting from Japan.

### Reducing CO<sub>2</sub> from Vehicles in Use

CO<sub>2</sub> emissions are released throughout the various stages of a vehicle's lifecycle, from the raw material stage to production and finally to recycling. Most of these emissions occur while the vehicle is in use, making emissions reduction at this stage our highest technical priority.

At Nissan, we take a comprehensive approach to CO<sub>2</sub> reduction by developing highly efficient engines, continuously variable transmissions (CVTs), electric-powered 4WDs (e-4WDs), lightweight vehicle bodies as well as more aerodynamic design with low air resistance. Nissan is making in the development of clean energy vehicles, and we will launch the Altima Hybrid in the US market, starting late 2006.

Ultimately, it is only by introducing these technologies more widely that they can lead to significant reductions in CO<sub>2</sub> emissions. The key is to place as much emphasis on diffusion of environmentally friendly technology as on the development of that technology. To offer more customers the benefits of CVT, Nissan plans to sell around 1 million CVT-fitted models worldwide by fiscal year 2007, up from an estimated 250,000 in fiscal year 2004. If around 1 million CVT-fitted models were sold, we estimate this would have nearly the same effect in terms of CO<sub>2</sub> emissions reductions as selling 200,000 hybrid electric vehicles.

As well as reducing CO<sub>2</sub> emissions from vehicles sold today, the fuel cell vehicle (FCV) is expected to play an increasingly important role as a clean energy vehicle in the near future. The environmental advantage of the FCV is that its sole emission is water, produced through the generation of electric energy in a chemical reaction of hydrogen and oxygen. In March 2004, Nissan delivered the first X-TRAIL FCV to Cosmo Oil Co., Ltd., and currently carries out joint research and development on the use and supply of hydrogen.

Whether for the present or for the future, realizing sustainable mobility requires more than technological development alone, it requires collaboration with other stakeholders in society. An example of this is our continued participation in the ITS (Intelligent Transportation System) project which, in cooperation with the Japanese government and other companies, aims to make roads safer, less congested and thereby help to better manage CO<sub>2</sub> emissions.