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*Regional Workshop:
Fuel Quality and Alternative Fuels*

**Alternative Fuel Vehicle
in CHINA**

**Office of the State Clean Car
Steering Committee
MOST, SEPA**

May 2-4, 2001, New Delhi

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Clean Energy Policy

- **Chinese government encourage to develop clean energy:**
 - China is a big country with biggest population and relatively poor nature resources;
 - To develop clean alternative fuel is very important for adjusting energy resource structure, improving air quality in urban area and sustainable development of China auto industry;
 - “Production and consumption of clean energy vehicle shall be promoted”, regulated in the year 2000’s <Air Law>;

Clean Air Project — Clean Vehicle Action

- **Clean Air Project — Clean Vehicle Action**
 - In early 1999, 13 national departments, such as Ministry of Science and Technology (MOST), SEPA, SDPC, SETC, SAMI etc., established a joint leading group and an office to implement the “Clean Air Project--Clean Vehicle Action” .

Clean Air Project — Clean Vehicle Action

- Main tasks:
 - Accelerate improvement of oil fueled vehicles;
 - Promote application of gas fueled vehicles;
 - Develop electric vehicles (EV) and hybrid vehicles (HPV), and demonstrate the project.

Development of the Gas Vehicles

- 12 cities or regions were selected as “State Demonstration Cities for Clean Vehicle Action”, such as: Beijing, Shanghai, Tianjin, Chongqing etc.;
- The Demo Cities focus on developing gas vehicles (CNG & LPG) and clean alternative fuel vehicles;
- Especially focus on the city buses and taxis at current stage;

Development of the Gas Vehicles

- **By the end of 2000, there have been gas vehicles more than 80,000, gas stations 228, in which;**
 - **Vehicles: 65000 LPG ; 15000 CNG**
 - **Gas station: 130 LPG; 98 CNG**
- **To evaluate the environmental benefit brought about from the Clean Vehicle Activity, <Study on Vehicle Emission Contribution to Air Pollution> organized by SEPA and MOST in 12 demonstration cities;**

Development of the Gas Vehicles

- To develop the single-fueled EFI gas engine actively, a few auto manufacturers (such as: FAW, DMC, SAIC, TAIC etc.) were designated as key gas fueled auto makers;
- An inspection and test center for special parts/ components for LPG or CNG vehicles was established;

Development of the Gas Vehicles

- To speed up localization of gas charging facilities, and set up complete service network for the gas charging stations, a few key manufacturers for gas charging equipment were designated;
- The formulation of the standard system for gas fueled vehicles was accelerated:
 - 13 standards have been issued;
 - more than 20 standards are underway.

Accelerate Development and Application of EV and HPV

- In 1996, EV project has been established as a key state project in the “ninth-five year plan”;
- In June of 1996, “Shantou--Nanao state EV demonstration zone” was formally put into operation, and 17 EVs from local and abroad were being tested;
- Development of 3 different kinds of drive systems (AC/DC/SR) and 5 kinds of batteries are in process;

Accelerate Development and Application of EV and HPV

- The first concept EV will be presented in October this year;
- Actively to do pre-research and prepare for development of HPV during tenth-five year plan;
- The standard systems of EV and HPV to be formulated.

Ethanol Gasoline to be Promoted

- China is a big agricultural country with overproduction of grain in some area;
- To consume the more grain and increase the peasants' income, production of ethanol by grain will be promoted;

Ethanol Gasoline to be Promoted

- As an alternative fuel, ethanol will be put into gasoline with some small percentage (such as: 5%, 10% or 15%), which will
 - Save more oil fuel resources;
 - Reduce CO and HC emissions from vehicle.
- The related feasibility research on ethanol gasoline application is under going;
- Some demonstration program will start soon.

Summary

- Chinese government make great effort to develop clean alternative fuel for vehicles;
- Clean Air Project--Clean Vehicle Action has made big progress:
 - LPG and CNG gas vehicles have been developed in 12 demonstration cities;
 - By the end of 2000, there have been gas vehicles more than 80,000, gas stations 228;
 - EV and HEV will make more progress in the next 5 years plan;
- Ethanol gasoline will be promoted in the near future in China.