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Sustainable Approach to Car-society in Japan

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Discussed here are issues of standardized measures toward Low Carbon Society in Japan, through depicting future “Electric-vehicle (EV) Society”. In Japan, many activities regarding EV have pervasively spread into society. These activities include an improvement in battery performance, an increase in the number of battery chargers, grants for purchasing EV, and so on. However, these activities are based on the simple idea that “EVs replace current gasoline vehicles”, and have not considered future possible changes. Will the current “car society” continue in the future? Japan has entered into an aging society with a low birthrate. The population rate of senior citizens over 65 was 22.1% in 2008, and is estimated to reach 31.8% by 2030. Traffic accidents caused by senior citizens have increased remarkably. Furthermore, depopulated areas in which senior citizens live alone has been expanding in the country side. On the contrary, young people are not buying as many cars as previous generations. The number of shipped cars from 2003 to 2007 fell from its peak, even though GDP growth rate stayed around 2% in Japan market. Young people's change in purchasing behavior was considered one major factor for the decrease in the number of car shipments. These facts suggest that CO2 emission caused by car driving is decreasing naturally due to a reduction in car-users, and the social cost of constructing new transportation methods required in depopulated areas. A new design of a car society from a holistic perspective may be strongly required in order to achieve a “Sustainable society” in Japan. Scenario-planning and brainstorming methods were used in order to depict an “extreme” EV society (100% EV society). “Extreme” thinking was necessary for avoiding “conventional thinking”, that existing technologies simply replace “low-carbon” ones in order to decrease CO2 emissions. The two chosen uncertain factors were distance traveled by a car (no change or shortened) and functional value of a car (no change or having new value). These two uncertain factors were expressed by two axes and four quadrants. The future society scenarios below were then placed in each quadrant. One of these scenarios was “Green Compact-city” in which it was not necessary for an EV to have high mileage and high speed performance. Instead of these, “low speed”, which didn't harm people in a collision with a car and made autopilot and auto-parking of a car possible, were needed for an EV. The senior citizens can utilize a car and walk around safely in a “silent” town due to EV's functional performance. Furthermore, an auto-parking system makes “Park & Ride” more convenient. These technologies are extremely different to current technological developments regarding EV's in Japan. “Conventional” approaches, which have been constrained by current conditions haven't made any large impact

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on any of the social problems facing us today. It may be more effective to start investigating more 'unconventional' approaches which broaden our horizons. We have to possess a holistic view of social issues (global warming, poverty, explosion of world population, and economic climate), and understand the causality between them. The integration of social science perspectives, such as human behavior and culture, with technology may be inevitable.



Fig. "Green Compact-city" Scenario