

BUSINESS DIRECTORY

Benefits of creating eco-friendly cities

GIFF JOHNSON

“The future is now” is the best way to think about the convergence of technology, vision and determination in Japan’s emerging “eco-cities.” Pacific island journalists were treated Friday to a ride in a hydrogen-powered sedan, toured “smart houses,” viewed vertical wall panels used for growing fruits and vegetables specially designed for crowded urban areas, and were introduced to one- and two-passenger electric vehicles increasingly in use for city transport.

Toyota City is one of 27 environmentally friendly cities recognized by the national government of Japan. To promote the concept, Toyota City government established “Ecoful Town,” a showcase campus where local residents and visitors can see the vision and the technology that supports it in action.

The big picture, said Kasuya Tadahiro, Toyota City’s vice director of the Model Environment City Promotion Division, is this city of 420,000 aims to reduce its greenhouse gas emissions by 30 percent of 1990 levels by 2030, and 50 percent by 2050 — an ambitious climate mitigation agenda that Pacific island leaders have called on nations of the world to adopt.

This city grew as an “automobile city” around the Toyota motors headquarters and a large vehicle production plant, which not surprisingly by the 1980s and 1990s produced a negative impact of pollution from carbon emissions of heavy vehicle use. Despite this background, Toyota City was one of the first cities in the country to tackle its environmental problems head on, produce an action plan to mitigate climate change, and begin implementing the new vision for the city, said Ecoful Town tour guide, Aiyumi Nagamatsu.

“In 2009, Toyota City was selected as a ‘smart city’ by the national government,” she said. “This is a pioneering low-carbon city.” A city government pamphlet enthusiastically describes its plan for the area as “programs to accelerate the creation of a vanguard environment city.”

At the family level, this has produced designs for a “smart house,” the centerpiece of which is the Home Energy Management System (HEMS), technology that informs residents of their energy consumption patterns at home through a wall monitor and allows them to minimize use of fossil fuel-generated power.

Nagamatsu showed how an energy-efficient smart house could operate in the evening from power provided from the leftover energy in solar-charged



Toyota City electric vehicles: Ecoful Town tour guide Aiyumi Nagamatsu shows visitors the one passenger electric vehicles that the Toyota City government rents to residents and visitors for local transport. Photo: Floyd K. Takeuchi/Waka Photos.

batteries of a family’s electric vehicle. As this power source declined overnight, the city’s grid power system kicks in for a few hours to ensure power stability through the night. The smart house concept integrates multiple power sources to reduce costs to the household, while reducing greenhouse gas emissions.

To date, there are 67 smart houses in Toyota City, and the city government is aggressively promoting expansion of the program to local residents through a combination of public relations and, more significantly, tax cuts and subsidies to those who adopt clean energy options. “We provide a subsidy to those who introduce HEMS to their homes as well as cutting property taxes,” said Tadahiro. Families can accumulate “eco-points” for environmentally friendly behavior, such as recycling that result in prizes or subsidies from the local government.

“The reason we created ‘Ecoful Town’ was to demonstrate to our citizens in the urban area what can be done,” said Tadahiro, whose enthusiasm for the Smart City program is obvious. The city’s action plan covers environmentally friendly planning for transportation, forestry and the every day life of local residents, he said.

Nagamatsu explained that Toyota City has established 45 charging stations for one- and two-seat electric vehicles that the city government rents to anyone who signs up to become a member. Four thousand people have joined, and the cost to use these vehicles while higher than a bus fee is less than a taxi fare, she said. “There isn’t a

lot of public transport in Toyota City,” she said. “So this is a convenient way to get around.”

The city government also has two hydrogen-powered vehicles, built by Toyota, that it uses largely as demonstration of the technology. Two hydrogen service stations service these vehicles that can drive 650 kilometers on a full tank, and take just three minutes to “gas up.” Toyota is producing three of these vehicles per day at its plant and though still in its infancy, there are about 100 hydrogen service stations nationwide in Japan.

Of particular interest to visiting Pacific journalists at the Ecoful Town area was a vertical panel system for urban agriculture production. The panels, roughly six-feet wide by 10 tall, contain space for dozens of potted plants, which offer businesses or local residents options for growing food plants in congested areas.

Now in its third year, the Ecoful Town demonstration campus has been visited by over 150,000 people from Japan and 90 nations, said Tadahiro. It is introducing visitors to the advantages and power efficiency of the HEMS system. He acknowledged that it is not yet widely used in ordinary households. But with 67 smart homes already in operation and an active program of promotion and financial incentives to those who change to environmentally friendly lifestyle, Tadahiro is confident the concept will continue to gain traction with urban residents as Toyota City marches on its plans for a 50 percent cut in carbon emissions over the coming 35 years.

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