Mayor Toshihiko Ota, Toyota City

Creating the Future Standard

SDGs and Toyota – the City of the Future

Mayor Toshihiko Ota, Toyota City
Introducing Toyota City –
A miniature version of Japan incorporating urban and rural areas

Urban/suburban areas (30% of the city area)
Population: 401,000 (95.0%)

Rural areas (70% of the city area)
Population: 21,000 (5.0%)

Toyota City merged with 6 towns and villages in 2005

A city famous for manufacturing

A major center for industrial manufacturing

Toyota Motor Corporation

Next-generation vehicles

One of Japan’s largest industrial cities

Japan’s top city in terms of the value of shipments of manufactured goods every year since 2002.

Value of manufactured goods shipments
(2014, unit: millions of yen)

Yokohama City: 4,332,961
Kawasaki City: 4,548,439
Kurashiki City: 4,659,257
Tokyo Metro: 8,159,350
Toyota City: 13,084,732

70% of the city’s land area is covered by forest

[Land Use in Toyota City]

Total Area 91,832 ha
Forest 62,615 ha 68%

Roads 3,618 ha 4%
Residential land 6,602 ha 7%
Agricultural land 6,740 ha 7%
Bodies of water, rivers, waterways
Other 9,428 ha 10%
Our Vision for 2030:
Toyota City – Connect and achieve a fun city to live in, Toyota
(Vision for Toyota City from the 8th Toyota City Comprehensive Plan)

Concept: A future-focused Smart City that connects everyone and everything
We will become a Smart City by focusing on the rapid implementation of our integrated initiatives (economic, social, and environmental) in line with the SDGs. These efforts will build independence and create connections between a diverse range of people and organizations.

We are utilizing the urban and rural elements of our city to implement integrated initiatives to benefit the environment, society, and the economy.

Our 3 priority areas:
- Energy
- Mobility
- Wellness
## Toyota City’s CO₂ Emissions – FY2013 - FY2017

<table>
<thead>
<tr>
<th>Emissions: 10,000 tons of CO₂</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
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<td>352.82</td>
<td>345.45</td>
<td>329.60</td>
<td>323.90</td>
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</tbody>
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| Year-on-year                  | -2.1%  | -4.6%  | -1.7%  | -2.0%  |

### Bar Chart
- **Unit:** 10,000 tons of CO₂
- **Reduction of 64,000 tons of CO₂**
- **Industry**
- **Transport**
- **Commercial**
- **Energy Conversion**
- **Household**

(Financial Year)
Achieving Net-Zero CO₂ Emissions

Anticipated Technological Innovations

- **[Renewable Energy]** Higher efficiency, lower costs
- **[Energy Saving]** Even more high-performance equipment and materials
- **[Hydrogen]** Utilizing CO₂-free hydrogen
- **[Fossil Fuels]** Transition away from fossil fuel dependence
- **[Carbon Capture]** Establishing CO₂ capture, utilization, and sequestration technologies, artificial photosynthesis technologies, etc.

Ambitious target: a 70% reduction in CO₂ emissions

**Industry:** Horizontal deployment of zero emission initiatives at major companies

**Homes & Businesses:** Increasing ZEHs and ZEBs

**Transport:** Expanding use of next-generation vehicles, promoting public transport

Boosting initiatives: 70% reduction + Technological innovations: 30% reduction = Net-zero
Overview of our Net-Zero Carbon Initiatives

- Promoting more ZEHs
- Promoting the establishment of more Smart Towns
- Improving the health of plantation forests
- Promoting the use of more next-generation vehicles
- Promoting more renewable energy facilities
Promoting initiatives through Public-Private Partnerships
Certification and sales of biomass environmental value – the SDGs and Toyota City’s Renewable Energy Challenge

◆ We will acquire green power certification for value produced by biomass (captive consumption) at recycling plants, and then sell these certificates to automotive plants in Toyota City.
◆ This will effectively create CO$_2$-free automotive manufacturing and boost income for the city.

The SDGs and Toyota City’s Renewable Energy Challenge

- Chubu Electric Power
- Local generation & local consumption of renewable energy (electricity)
- Renewable energy sources owned by the City (Mennoki Wind Farm, Solar, Tokari Clean Center)
- Demand within the city (including residents)
- Public Facilities
- Next-gen vehicles
- Other factories, offices
- Automotive plants, etc.
- Reducing CO$_2$ from industry & transport for a low-carbon life cycle
- Local generation & local consumption of environmental value

29 Jan: JQA facility certification (green energy certification)
23 March: Committee certification for equivalent CO$_2$ reduction
[Promotion of ZEVs]

- Basic value of ZEVs (environmental value) x ZEV added value (social value, economic value)
  = providing solutions to issues in society (COVID-19 prevention, disaster prevention, medical care and welfare)
Problem:
Slump in the food and beverage industry, reduced use of taxis

Solution:
Food delivery service provided by a local taxi company
Use of environmentally-friendly compact EVs for delivery

Start date: November 2020

Participating stores: 30

Organizer: Hoei Kotsu (local taxi company)

Overview:
Users order via the app and use their smartphone to pay
Users pay 10% of the total price as a fee + 110 yen (max. 330 yen)
Restaurants pay 25% of the total price

Feedback: “I’m grateful because delivery orders now account for over 10% of my business.” (Restaurant owner)
Preparing for Natural Disasters with ZEVs

The SAKURA Project
◆ Using EVs as power supplies = ensuring power supplies for evacuation shelters and allowing residents to evacuate safely at home

◆ Problems:
Ensuring adequate power supplies in natural disasters, avoiding crowding at evacuation shelters during the COVID-19 pandemic

◆ Solution:
Public-private partnership to create a system to expand the use of EVs as external power supplies

More EVs = Further expansion of the use of EVs as external power supplies

More connected = Optimum placement and connection of a wide range of vehicles to evacuation centers

More accessible = Ensuring that external power supplies are available for use in natural disaster situations

◆ Start date: September 2020

◆ Organizers: Toyota City, Toyota Motor Corporation, Toyota Home, and 8 Toyota dealers in Toyota City

EV batteries can be used to power home appliances
1. More EVs: utilizing a diverse range of vehicles

[Problem]
Not many EVs are suitable for use as external power supplies
(Vehicles with larger power supply capacities are needed, vehicles also need to be useful when not needed as backup power supplies)

[Solution]
Providing a diverse range of multi-purpose vehicles that can be used where they are needed most

- Large Capacity FCV Bus
- FCV Power Supply Truck
- FCV Food Van
- FCV Office Van
2. More Connected, More Accessible: Matching EVs with Evacuation Centers

**[Problem]**

Finding the optimum locations for EVs used as power supplies  
(Difficult to determine which evacuation centers have lost power, not sure where to send EVs to provide power)

**[Solution]**

▲ Building a vehicle dispatch support system to ensure that the right vehicles are sent to the right locations to provide support
EV House Calls
◆ Reducing the burden on medical professionals by using ultra-compact EVs for house calls

◆ Problems:
  Difficulty in securing hospital beds, increasing demand for medical care at home
  Vehicles used for house calls are too big for narrow roads, difficult to find parking spaces
  Excess noise during visits at night (engine noise)
  Difficulty in managing vehicle dispatch manually

◆ Solutions:
  Using ultra-compact EVs to reduce driving stress
  Eliminating noise through the use of EVs
  Reducing the burden on staff through the introduction of a vehicle dispatch and navigation system

◆ Medical facility: Toyota Regional Medical Center

◆ Start date: February 1, 2021

◆ Number of vehicles: 5
◆ Feedback: “The EV fits all the equipment I need.” (Occupational therapist)
  “It’s easy to drive and quiet, too.” (Doctor)
  “I hope other medical facilities will adopt the same system.” (Doctor)
Village Mobility Life Project

- Using EVs to support residents’ mobility needs in mountainous areas, encouraging elderly people to go out more and promoting more rewarding lifestyles for elderly people

- Problems:
  
  **Securing adequate transport in mountain villages**
  
  Elderly people need to be encouraged to go out more, but they also need support to drive safely

- Solution:
  
  Adapting ultra-compact EVs to suit the needs of mountain village residents, thereby providing easy-to-use vehicles for elderly people

- Feedback: “The EVs are easy to drive and available when we need them.” (Elderly resident)
  
  “The EVs are compact and don’t go too fast, so we can have peace of mind when our elderly family members go out.” (Resident with elderly family members)
Promoting the SDGs at Toyota ecoful town

Toyota ecoful town showcases our efforts to create a sustainable society, including our environmental initiatives.

*Refurbished in April 2019

[Visitors] 300,000 visitors from more than 100 countries and regions (as of December 2019)

[Features] Cutting-edge technology displays
Information about SDG-related initiatives
Mobility test drives, etc.