



Aiming for a Thriving Low-Carbon Society; Toyota City



Toyota City



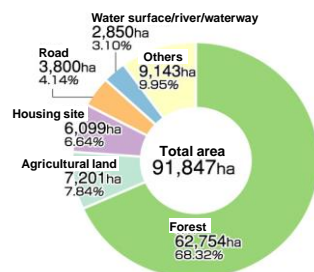
Overview of Toyota City



Aichi Prefecture



- ◆ Population: 422,787 (as of September 1, 2013)
- ◆ Area: 918.47 km² (18% of Aichi Prefecture)
- ◆ Industrialized urban areas and hilly & mountainous depopulated areas coexist.



Specialties of Toyota City



Pear



Peach



Prius

1





Recent status of designation, etc. by government

2008 (H20)	2009 (H21)	2010 (H22)	2011 (H23)	2012 (H24)	2013 (H25)	2014 (H26)	2015 (H27)
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Environment

Challenge to reduce greenhouse effect gas (balancing the environment with vitalization of the industry & region)

Designated on January 23, 2009

Environmental model city
(Fiscal 2009 - 2013)

Traffic (ITS)

Realization of environmentally friendly traffic society utilizing ITS

Designated on April 8, 2010

Next-generation energy and social system verification area
(Fiscal 2010 - 2014)

Energy

Construction and overseas deployment of Japanese-version smart grid in the Strategy for Becoming an Environment and Energy Power through "Green Innovation" in the Growth Strategy

Designated in December 2011

General special area for regional vitalization
<Special district for next-generation energy/mobility creation>
(Fiscal 2011 - 2015)

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Efforts for "Environmental model city"

Traffic

- Realization of eco-friendly car life through smart use of car and road
- Construction of human- and environmentally-friendly public transportation system

ハイブリッドシティ
環境モデル都市 とよた

Industry

- Prevalence of environmental management by building the Toyota City Environmental Management Network
- Promotion of transition to sustainable plants

Hybrid

[Target for CO₂ reduction]
2030: 30% reduction
2050: 50% reduction

Residential

- Promoting widespread use of photovoltaic generation systems
- Energy saving of lighting/home electric appliances/architectural structures
- Improving environment-related knowledge and raising environmental awareness through visualization
- Cooperation structure with residents, etc. in each region

Forest

- Maximization of CO₂ absorption amount by strengthened thinning
- Promotion of use of regional lumber
- Educational activities to citizens and forest environmental education

Urban center

- Upgrading low-carbon society model districts
- Building urban center where "human" and "green" coexist

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Efforts in traffic field (existing efforts)

Constructing whole-city bus network



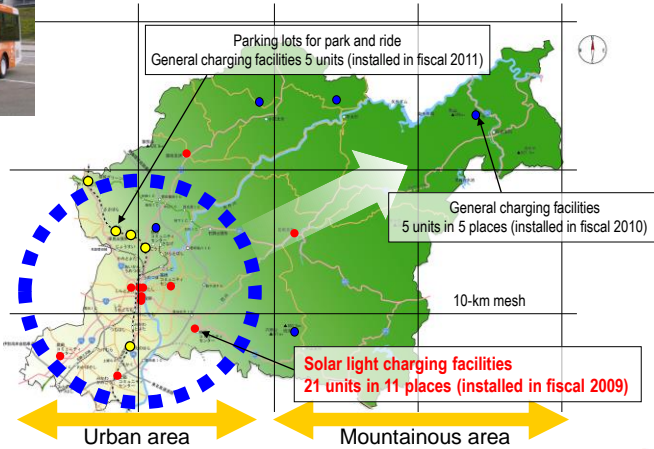
Bus ridership in fiscal 2011:
approx. 2.2 million
 Core bus: 1.94 million
 Regional bus: 0.23 million



Solar light charging equipment

Subsidies for next-generation vehicle purchase (up to 150,000 yen for EV and PHV)
 Subsidies for charging equipment installation (addition of 50,000 yen)

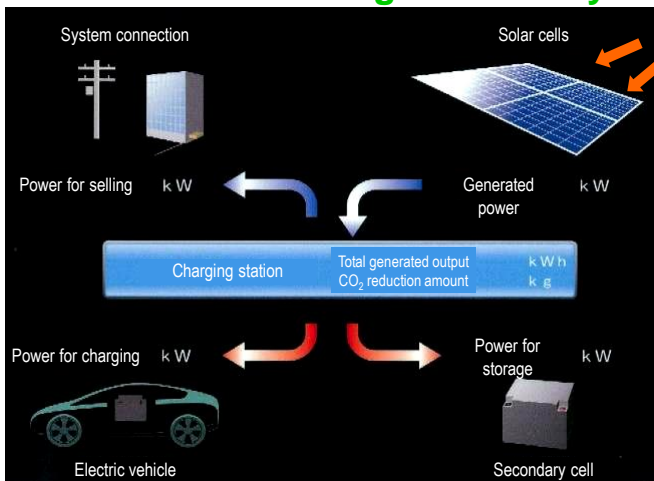
Charging network connecting public facilities (33 units in 22 places)
 Private fast/normal charging units (30 units; increasing)



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Efforts in traffic field (existing efforts) Expansion of use of mechanism for driving vehicles by natural energy



Charging at home

- Storing power through photovoltaic panels during the day and charging a vehicle during nighttime
- Moving a vehicle through solar energy within a short distance



Charging at a parking lot while away from home

- Using the charging network of public facilities and supermarkets
- Since the vehicle has another power source, a driver feels safe even if a vehicle is running out of electricity.

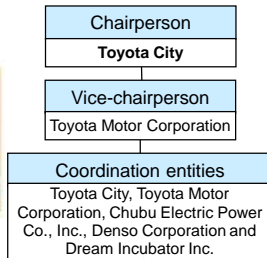
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Next-generation energy and social system verification area

Efforts jointly by citizens, universities, companies and the city government



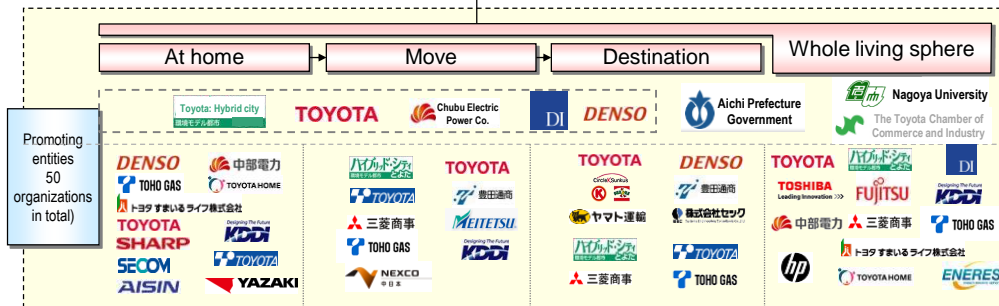
Establishment: August 5, 2010

Description of activities

1. Planning, promoting and coordinating communication of the Low-Carbon Social System Verification Project
2. Coordinating communication of related agencies and organizations
3. Publicizing information to the public and PR activities
4. Other activities needed to achieve objectives of this council

Project participants

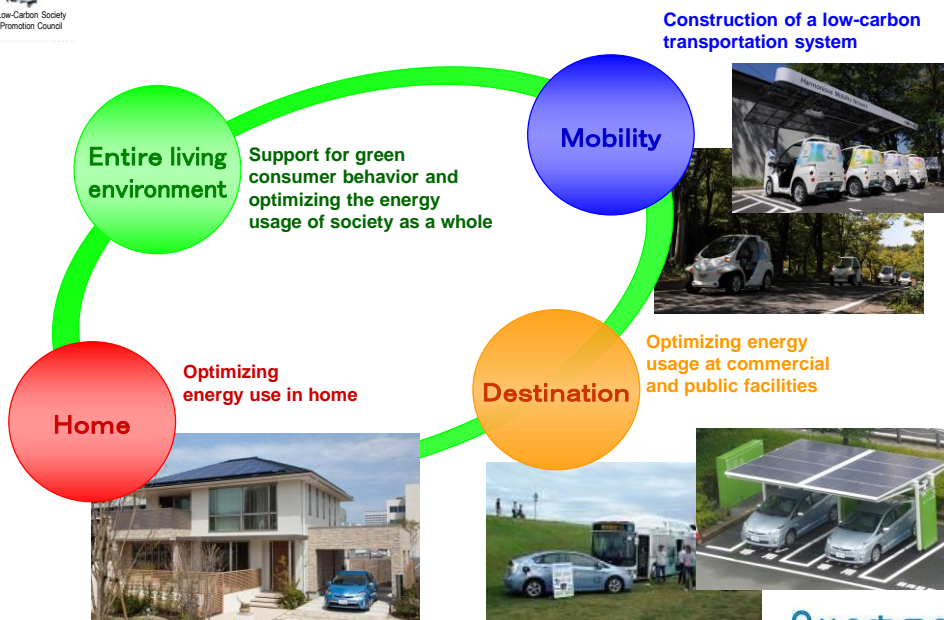
(as of the end of September 2013): **50 organizations**

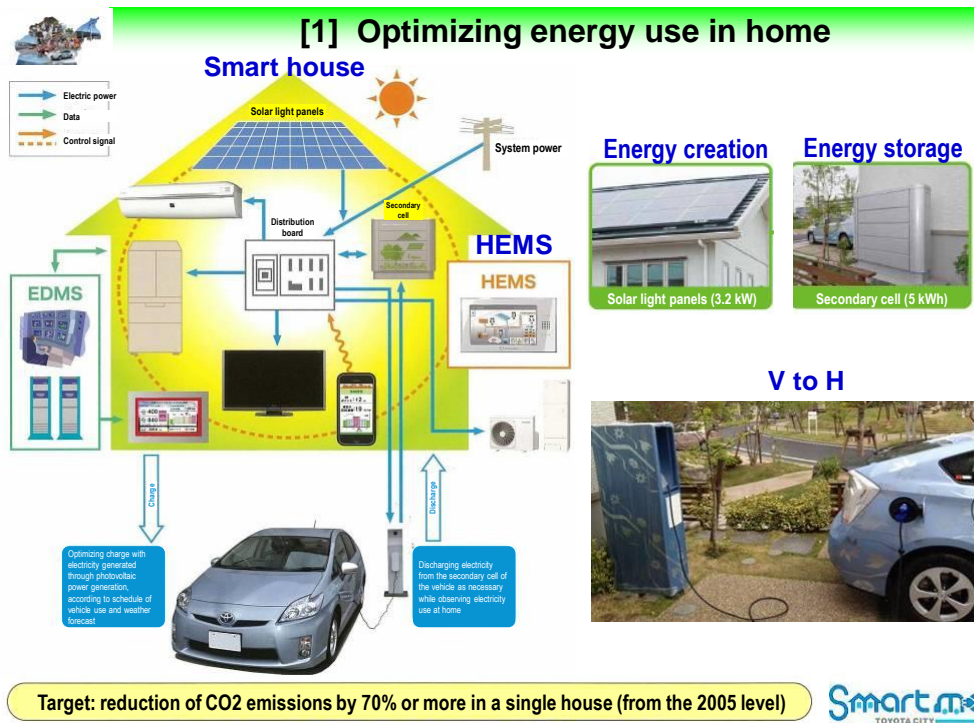


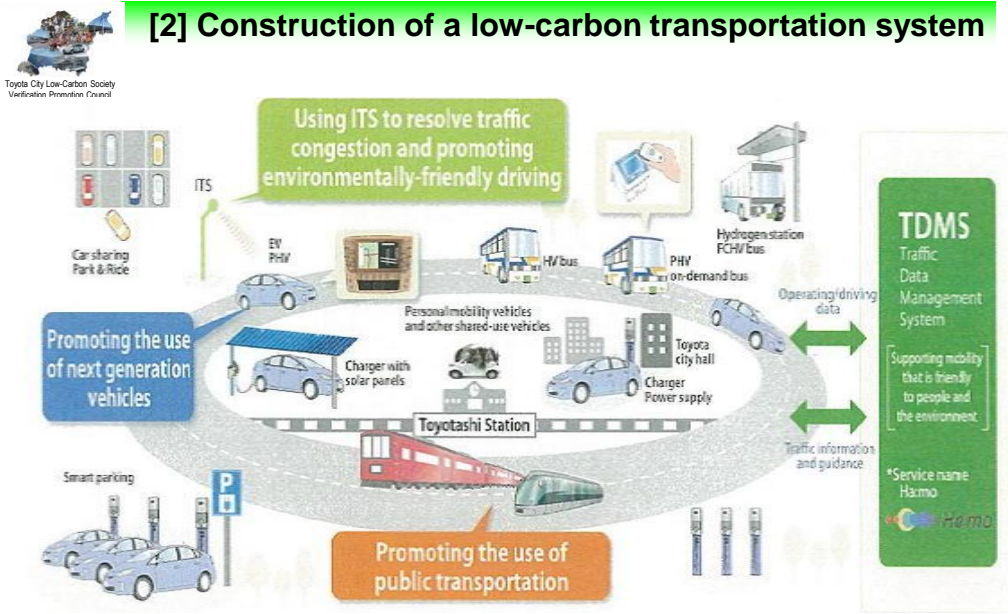
Construct the promotion structure by establishing the "Toyota City Low-Carbon Society Verification Promotion Council"



Overall picture of the Toyota City Low-Carbon Society Verification Project







Achieving lower-carbon human movement through a variety of means of transportation

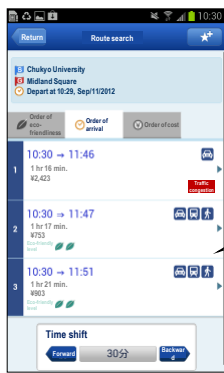
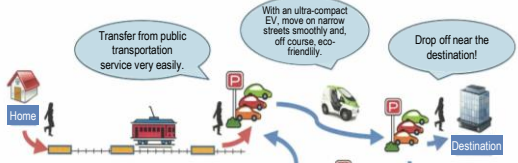


Our new efforts



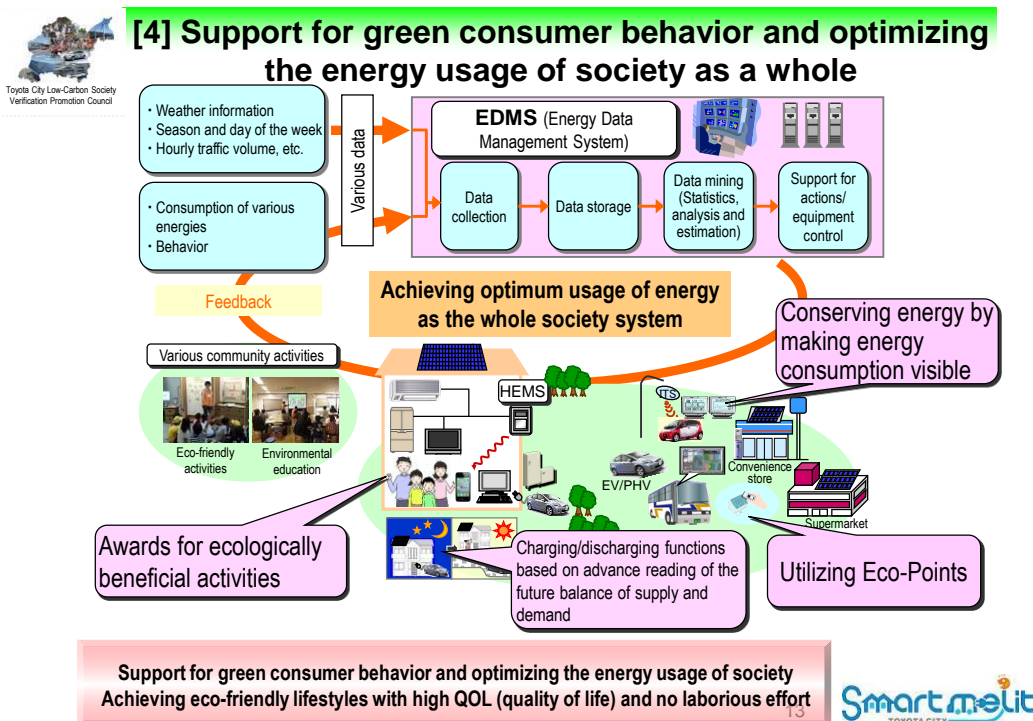
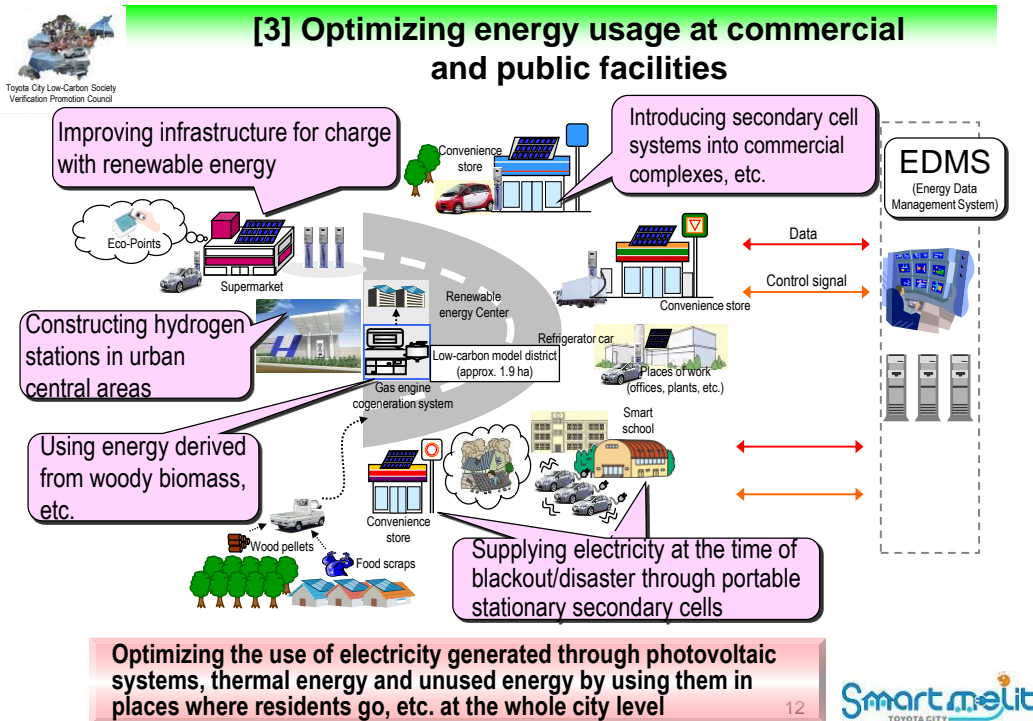
<Objectives>
 Promote use of public transportation systems while securing the convenience of movement.
 Contribute to regional energy management by charging time control, etc.

<Objectives>
 Connect individual traffic services with each other to promote their use according to traffic conditions. Provide support to realize a low-carbon and seamless transportation system.



Multi-modal route guide through smartphone





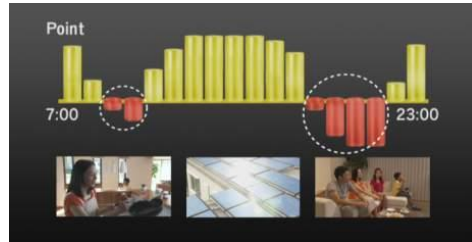


Encouragement of change in behavior through Eco-Points

When much electricity generated by the photovoltaic generation system is supplied and less electricity is in demand, **plus points are added.**

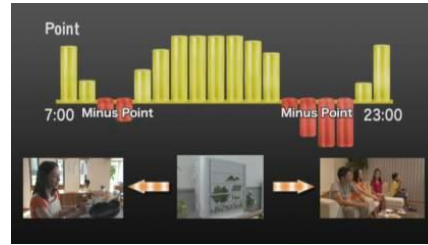
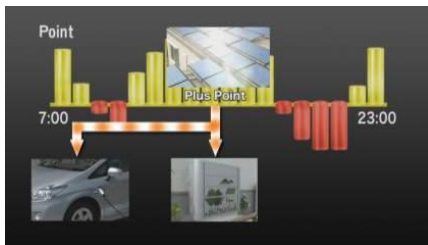


When less electricity generated by the photovoltaic generation system is supplied and much electricity is in demand, **minus points are added.**



When plus points are added, use/store points.

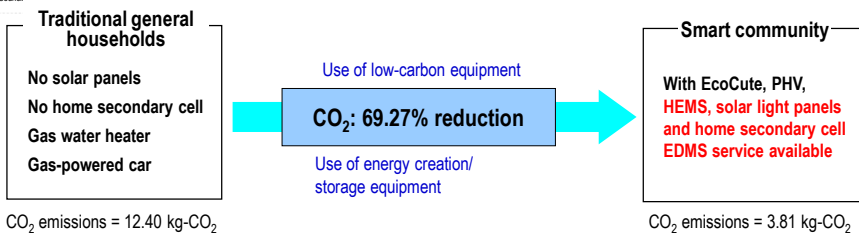
When minus points are added, use the stored electricity.



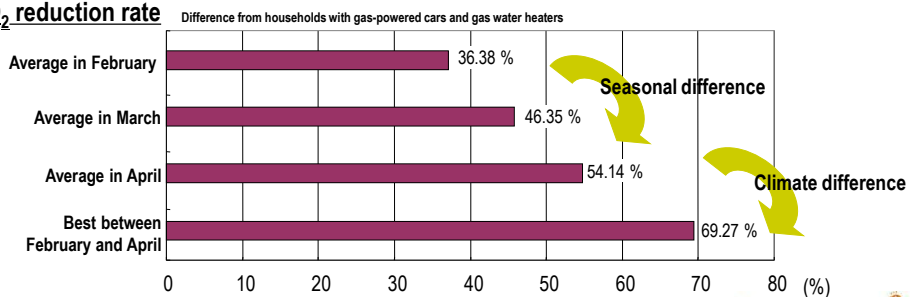
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CO₂ reduction effect of the verification project so far



CO₂ reduction rate

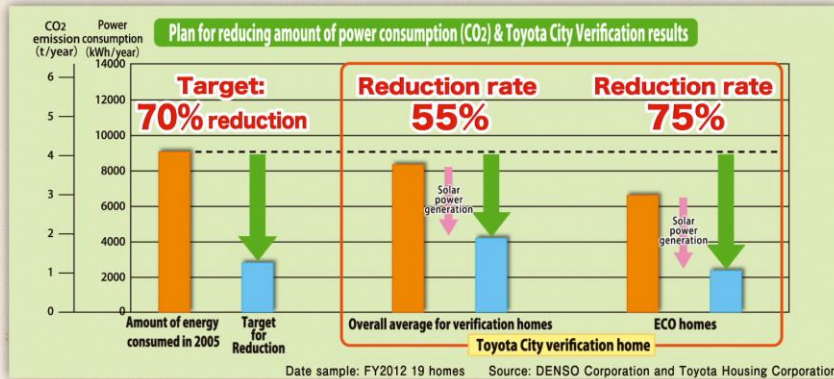


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Verification results



Furthermore, a reduction of approximately 75% was achieved in households with high eco-awareness, thus achieving the verification goal.

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Voices from residents in smart houses

Opinion exchange session with
Governor of Miyagi Prefecture (July in 2012)

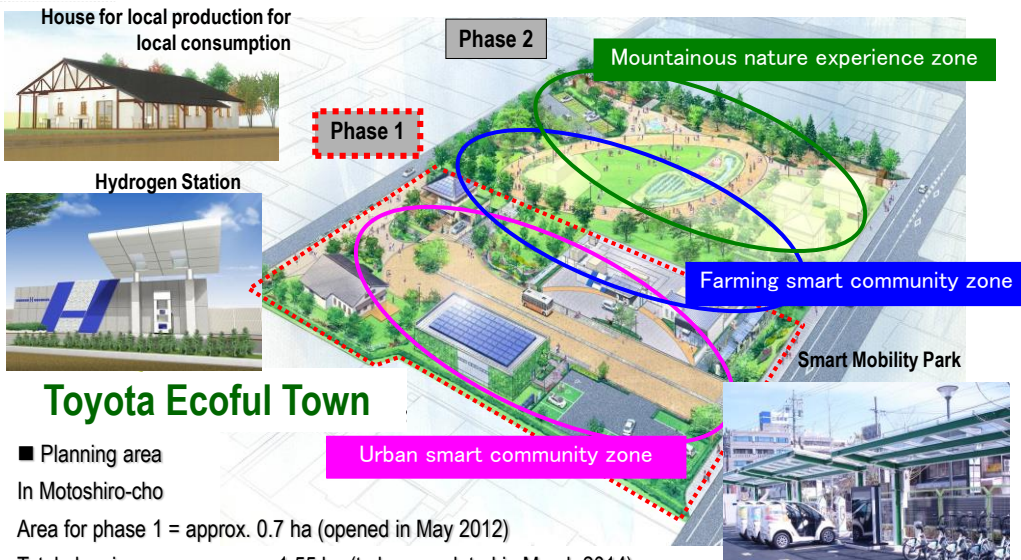


- “It is enjoyable to check with HEMS how much effect we have by each way of energy saving.”
- “I try to clean and wash when the EDMS display is blue. Difficult operation is not necessary at all.”
- “I commute by PHV to work every day and there is still gas left without filling it up with gas for three month.”

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Ecoful Town: an area to visualize efforts in Toyota City

Toyota City Low-Carbon Society
Verification Promotion Council



House for local production for local consumption



Hydrogen Station



Toyota Ecoful Town

- Planning area
- In Motoshiro-cho
- Area for phase 1 = approx. 0.7 ha (opened in May 2012)
- Total planning area = approx. 1.55 ha (to be completed in March 2014)



Toyota City Low-Carbon Society
Verification Promotion Council

Mr. Ota, Mayor of Toyota City, reported about Toyota City Low-carbon Society Verification Project at Implementation Forum organized by ECOSOC=United Nations Economic and Social Council in Geneva and made the presentation at the Innovation Fair to Secretary-General Ban Ki-moon of UN, in July,2013

