経済産業省
Ministry of Economy, Trade and Industry

Japanese Government's Efforts in Developing Charging Infrastructures

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Goal of Next Generation Vehicles

○By 2020
- ・Maximum coverage of next generation vehicles*1 among the newly sold units to be 50%
- ・Set up 5,000 units of rapid battery chargers*2 , and 2 million units of normal battery chargers *2

○The current percentage of next generation vehicles among the newly sold units is approximately 16%
There are approximately 1,300 units of rapid battery chargers and approximately 20,000 units of normal battery chargers available.

*1 Next generation vehicles: Hybrid vehicles (HV), plug-in hybrid (PHV), electric vehicles (EV), fuel cell vehicles (FCV), clean diesel vehicles (CDV), and CNG vehicles and others

*2 Rapid battery chargers: Chargers using 200V outlets and can charge up to 80% for EV in 30 minutes.
Normal battery charger: Chargers using 100V or 200V outlets and can fully charge a EV in 14 to 28 hours (100V) or 7 to 8 hours (200V).

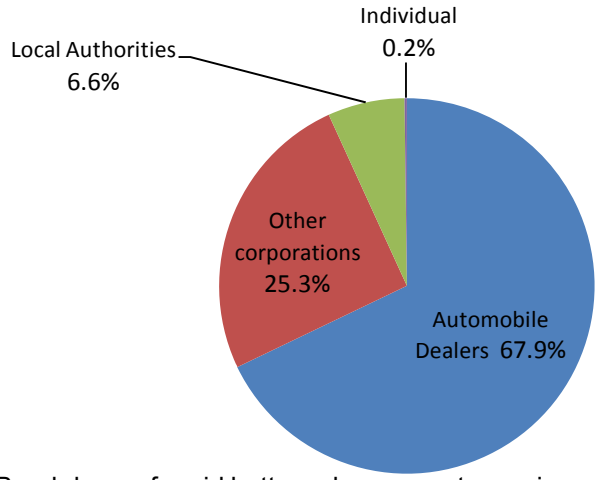
Example of EV and Charging Time

Manufacturer	i-MiEV by Mitsubishi	Leaf by Nissan
Photograph		
Normal charger	100V: fully charged in 14 hours 200V: fully charged in 7 hours	100V: fully charged in 28 hours 200V: fully charged in 8 hours
Rapid charger	80% charged in about 30 minutes	80% charged in about 30 minutes
Total electricity	16kWh	24kWh

((Based on official announcements made by each company)

Location for Rapid Battery Chargers

✓ The majority of rapid battery chargers will be set up at automobile dealers
✓ Approximately 7% will be set up at local authorities



Breakdown of rapid battery chargers set up using subsidies from METI (529 units in FY11)

Outline of the EV&PHV Town Concept

Outline

○The "EV&PHV Town Concept" is a model project for a demonstration experiment toward full-fledged dissmilation of EV/PHV, which is formulated in the "Action Plan for Achieving a Low-Carbon Society".

○Creating initial demand for EV/PHV requires the intensive development of charging infrastructure and public awareness activities. Thus, under the concept, local government that are taking the lead in the penetration of EV/PHV were selected as model regions ("EV&PHV Town").

○In each EV&PHV Town, intensive development of environmental infrastructure will be pursued for the introduction of EV/PHV in cooperation with local enterprises. From this, penetration models that take regional characteristics into account will be established and then applied to all areas of Japan.

Arrival point at 2011

○ Within the EV / PHV town planning, each EV and PHV town will carry out plan specification, plan execution, and result-sharing information to achieve each aim and objective.
○ Officially issue *Best Practices Handbook Volumes 1 and 2* as a deliverable of the EV / PHV configuration

Challenges in Promoting Battery Charger Infrastructures

Issue 1: Must be carried out systematically and efficiently (establish an organized method)

- There is no efficient organized method
- There are no agencies such as the local authorities that are taking part in a systematic development

Issue 2: Areas to set up normal battery chargers

- Difficult to set up in housing complexes such as condominiums
- Is important to promote normal battery chargers that users can use safely and are compatible to vehicles

Issue 3: Secure convenience for users

- Information is cluttered and is confusing for the users
- Billing business

Outline of Projects for Promoting Development of Next Generation Vehicle Charging Infrastructures

1. Project implementation period

Deadline for applications : March 19, 2013 to **February 28, 2014**

Performance report (Final) : By **October 31, 2014** (Deadline differs by application)

2. Subsidized costs and subsidy rates

(Subsidies will be provided to those **purchasing/installing new chargers** according to the following four categories.)

Project	Outline	Subsidized costs	Subsidy rate
Project category 1	Installation of charging facilities based on visions for installing chargers drawn up by municipals, etc., and which has the public nature. *	Charger purchasing costs, installation costs	**2 / 3**
Project category 2	Installation of charging facilities with the public nature ※ but is not based on any visions.	Charger purchasing costs, installation costs	**1 / 2**
Project category 3	Installation of charging facilities installation in the carparks of residential complexes and monthly carparks, etc.	Charger purchasing costs, installation costs	
Project category 4	Installation of charging facilities other than the above.	Charger purchasing costs	

*To have “public nature”, all the following requirements must be satisfied <Applicable to projects of project categories 1 and 2>

①The charging facility is located at a place which can be freely accessed from an entrance facing a public road.
②Use of other services (dining, etc.) is not a requirement for using the charger.
③Users are not restricted. (This condition is considered satisfied if the charger can be used by paying the charge there on the spot.)

Outline of Projects for Promoting Development of Next Generation Vehicle Charging Infrastructures (2)

3. Subsidized Installation Work and Upper Limit of Subsidy

Type of project		Project category 1 projects Subsidy rate 2/3			Project category 2 projects Subsidy rate 1/2		
Subsidized construction work		Installation work of rapid charging facilities	Installation work of normal charging facilities	Construction work based on special specifications	Installation work of rapid charging facilities	Installation work of normal charging facilities	Construction work based on special specifications
Upper limit of subsidy per construction work	**①Installation of high-voltage substation facility**	1,330,000	1,330,000	14,000,000	1,000,000	1,000,000	10,500,000
	②Electric cable wiring	1,660,000	1,000,000	6,200,000	1,250,000	750,000	4,650,000
	③Power supply support	800,000	NA	800,000	600,000	NA	600,000
	④Installation of charger	400,000	130,000	400,000	300,000	100,000	300,000
	⑤Construction work of charging space	1,330,000	1,330,000	1,660,000	1,000,000	1,000,000	1,250,000
	⑥Incidental facilities	2,230,000	2,230,000	2,830,000	1,670,000	1,670,000	2,120,000
	⑦Costs for other construction work	2,000,000	2,000,000	2,000,000	1,500,000	1,500,000	1,500,000
Upper limit of subsidy according to construction work category		7,630,000	6,690,000	25,430,000	5,720,000	5,020,000	19,070,000

PR for Condominiums

補助金申請の手続きと交付までの流れ

申請受付期間

平成25年3月19日～平成26年2月28日

申請書類一式の提出

充電設備の設置検討を行い、見積書などを入手してから、申請書や必要書類をすべて揃えた上で、申請書類一式を郵便または特定信書便で一般社団法人 次世代自動車振興センター（以下「センター」という）に送付してください。申請書類は「信書」に当たることから、郵便または特定信書便で送付をお願いします。

申請書類の送付先

〒105-0001
東京都港区虎ノ門1-6-12 大手町建物虎ノ門ビル2階
一般社団法人 次世代自動車振興センター

補助金申請から交付までの流れ

センター　申請者

募　集

↓

交付申請書類一式提出

↓

審査・交付決定通知

↓

設置工事実施

↓

実績報告書一式提出

↓

補助金額確定通知
補助金交付 振込み

詳しい内容については、
下記へお問い合わせください。

一般社団法人 次世代自動車振興センター
Next Generation Vehicle Promotion Center

充電インフラ補助コールセンター
TEL：03-5501-4412
（平日のみ 9：00～17：00）

http://www.cev-pc.or.jp/

分譲マンション用

EV/PHV充電設備 導入補助について

一般社団法人 次世代自動車振興センター
Next Generation Vehicle Promotion Center

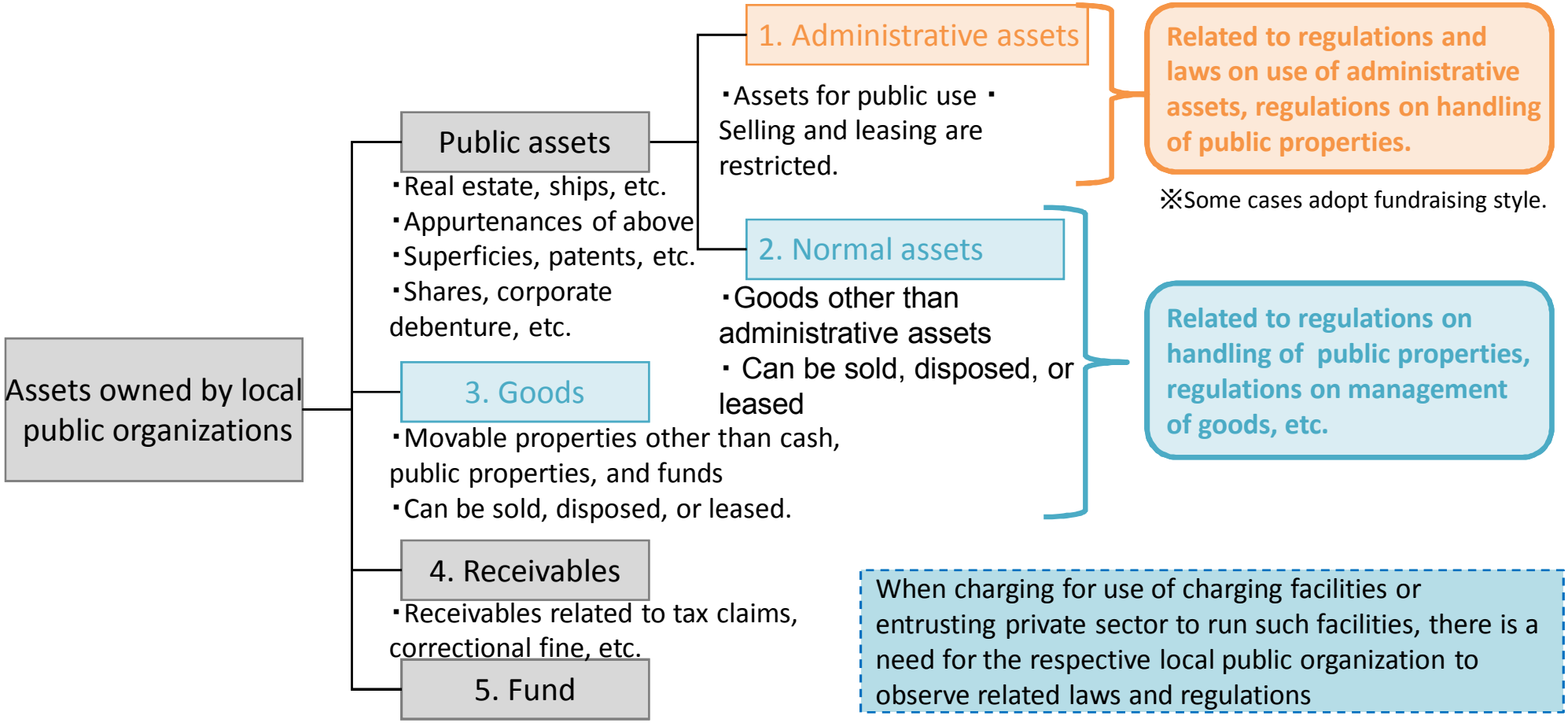
Outline of Survey on Rights of Municipals to Charge for Use of Charging Facilities (1)

Legal liquidations related to charging for use of charging facilities owned by local public organizations.

Charging facilities owned by local municipals are to be liquidated as public assets (administrative assets/normal assets) or liquidate as goods.

- Assets owned by local public organizations are prescribed by Article 237 of the Local Autonomy Law of Japan.
- Legal liquidations for charging differ by the asset categorization of the concerned charger.

Overall image of assets owned by local public organizations.

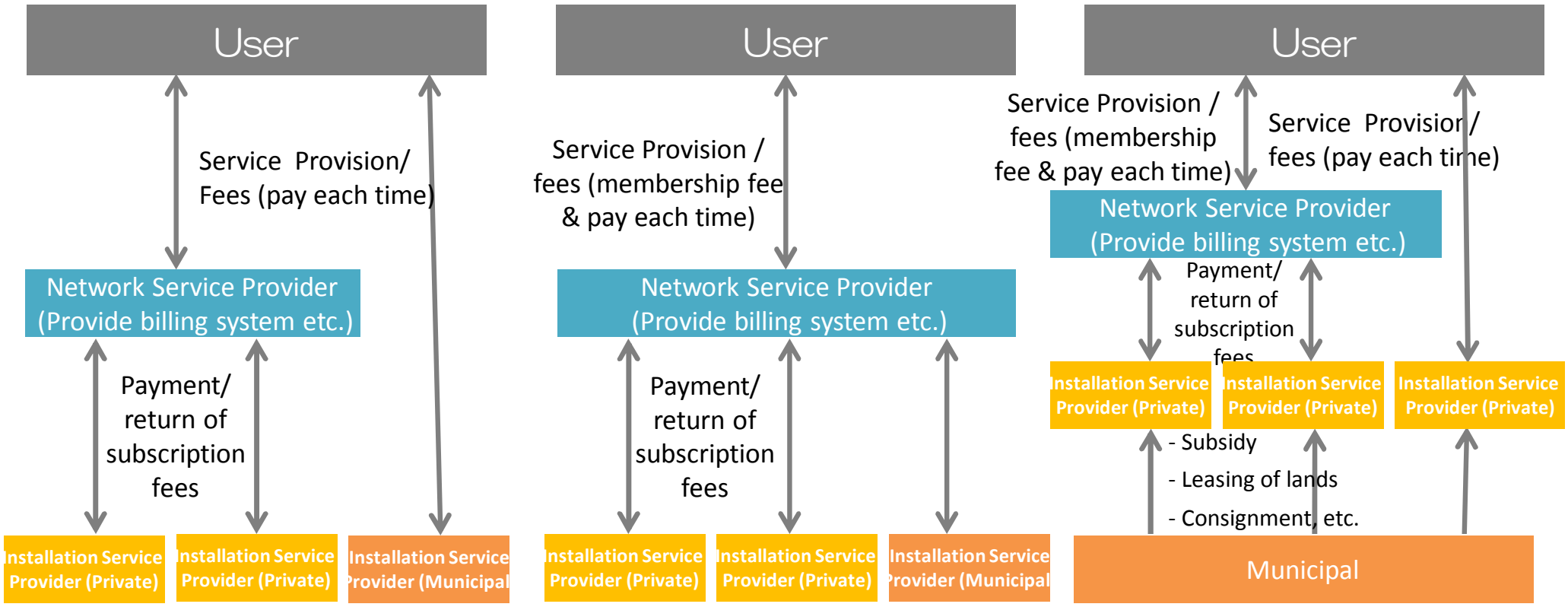


When charging for use of charging facilities or entrusting private sector to run such facilities, there is a need for the respective local public organization to observe related laws and regulations

Outline of Survey on Rights of Municipals to Charge for Use of Charging Facilities (2)

Method of participation of local public organizations in charging infrastructure businesses

(1) Independence (2) Network participation (3) Supporting installer



*There exist chargers installed directly by network providers

- Owned and charged by municipal themselves.
- Not subscribed to private billing systems nor information networks
- Methods in the local places with premature private charger networks

- Owned and charged by municipal themselves.
- Member of private billing systems and information networks
- Methods in cities with mature private charger networks

- Owned and operated by private companies with profits
- Municipals provide only support and receive no direct profits
- Each installer decide independently to subscribe to networks or not

Surveys Leading to Development of Model Plan

1. Basic Concept

Through traffic simulation, have EVs run in a certain district, and install charging facilities at points where the probability of electrical shortage is the lowest.

Taking into account situations where the probability of electrical shortage falls under 1%, verify how charging facilities are set up.

2. Main Preconditions of Traffic Simulation

○At the point where the remaining battery becomes 8kWh, determine if the EVs can get to the destination or not.

If able to reach destination, go to destination.

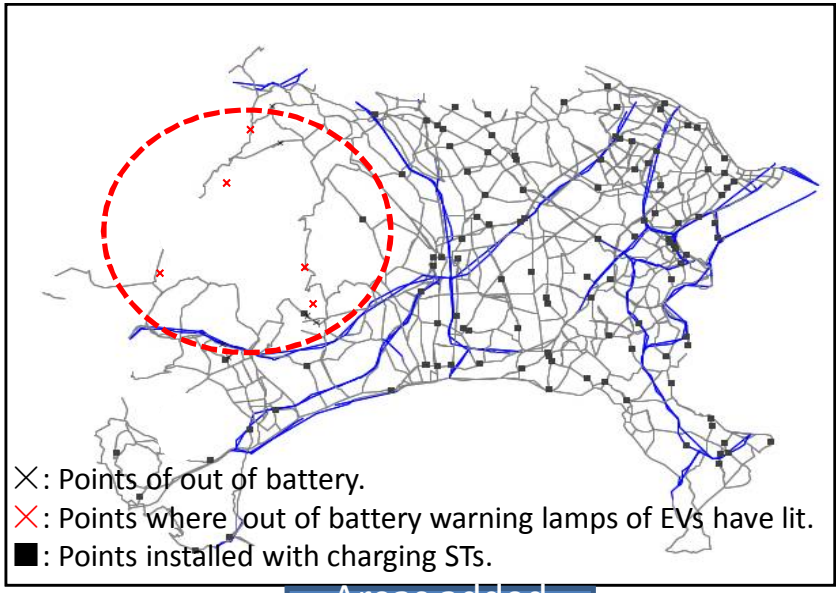
If not able, aim for the nearest charging facility.

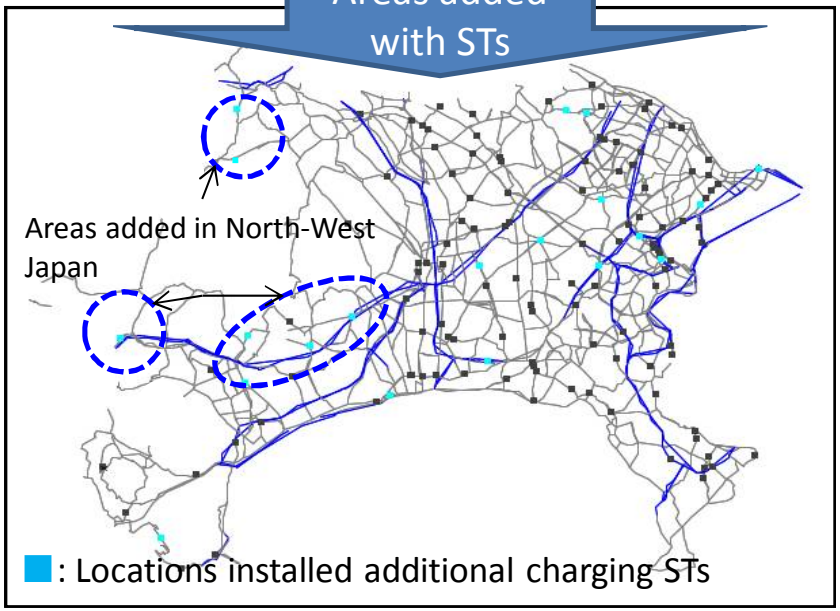
(Electrical shortage is the situation where the nearest charging facility was aimed at, but could not reach it.)

○ As for the running quality of EVs, use the running data of about 500 cars.

○Take also into account road grades, state of traffic congestion, and whether accessories are used.

○Charging facilities can be used 24 hours, without no waiting time for charging.





Model Plan for Development of Charging Infrastructures

【Procedure for placing charging stations】 Recommended step to place the charging station(ST) in prefecture 1. Large city 2. Main road 3. medium and small cities

Procedure 1. Large city	Procedure 2. Main road	Procedure 3. Medium and small cities
More than 1 ST per mesh of 5-10 km	More than 1 ST for 10-30 km space	Proportional to population and area

【Definition of large city】

○Large population and large number of business establishment
○Relatively high concentration of population and business establishment in a prefecture
○e.g. A city having a standard deviation score of the following urbanization index more than 150

Urbanization index
＝(population density [person/km^2])×
(business establishment density[company/km^2])×
(area[km^2])

【Definition of space of ST】

①Major national road(N-rd.) ： 10km space
②Provincial N-rd. with a large city ： 10km space
③Provincial N-rd. with a core city ： 20km space
④Provincial N-rd. only with small citis ： 30km space
⑤Provincial N-rd. in highland area ： 10-15km space

※e.g. a ST space less than estimated from the following formula

ST space [km]
≦－0.00064×（traffic flow[car/day]）＋38.8

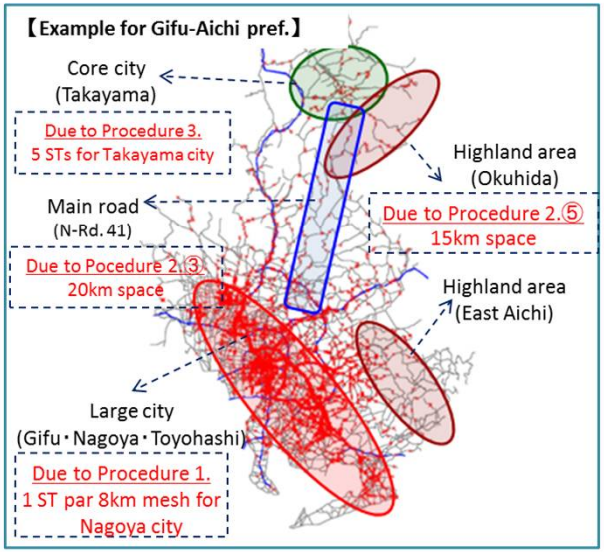
【Definition of number of ST】

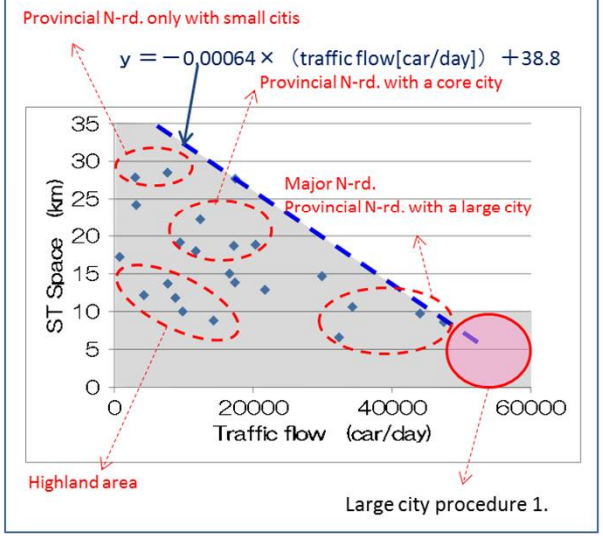
○No. of ST proportional to the are, population, and business establishment in a city
○e.g. No.of STs more than estimated from the following formula

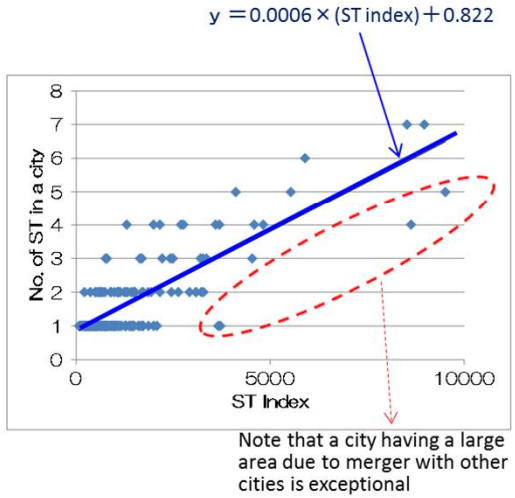
No.of ST in a city
≧0.0006×(*ST index*)＋0.822

ST index
＝（area[km^2]）$^{0.68}$×
（population[person]）$^{0.2}$×
（business establishment[company]）$^{0.19}$

【Example for Gifu-Aichi pref.】







Note:This model plan is proposed by Ministry of Economy, Trade and Industry based on"Analysis research on optimized layout of charging station" which Next Generation Vehicle Promotion Center commissioned Central Research Institute of Electric Power Industry in the framework of the clean energy vehicle promotion program. This analysis research is based on a simulation result to minimize the No.of EVs running out of electric power under an assumption. Hence, this model plan dose not always ensure the charging station layout enough to keep EVs from running out of electric power. Other strategy for developing charging infrastructure is also acceptable, because this model plan is based on just one simulation result.

Information Provided by METI to Municipals, etc.