

Chapter 8 Popularization and Use of New Energy Vehicles

Section 1 Overview

The State highly values work to popularize new energy vehicles as a major component of urban green transportation systems. Accelerating the popularization and use of new energy vehicles is significant for relieving resource pressures, preventing atmospheric pollution, improving residents' standards of living, and spurring the upgrading of the automotive industry.

As a result of joint efforts by the government and the entire industry, the proportion of new energy vehicles in the public transit industry increased dramatically in 2015, and related policy and regulatory institutions were further improved. We established a new energy public transit operations subsidy mechanism, and construction of the auxiliary facilities was enhanced. Our work to popularize new energy vehicles saw substantial achievements.

First, we integrated the work to popularize new energy public transit vehicles with the effort to establish Transit Metropolises. A group of innovative cities, including Nanjing, Chongqing, and Qingdao, have achieved favorable outcomes in new energy public transit popularization and created a positive feedback loop. Second, we made stronger efforts to support finance and taxation, banking, land use, and pricing policies. Construction of charging facilities was supported using methods like enterprise bonds and earmarked funds, and fee-collection measures were formulated to allow charging service enterprises to collect fees from users. Meanwhile, we used sole private investment and PPPs to broaden market access and encourage private capital participation. We ensured capital investment in new energy public transit and associated facilities by intensifying investment and financing efforts and expanding financing channels, which provide a strong guarantee for new energy vehicle development. Third, we established a subsidy mechanism for new energy public

transit operations. We formulated related policy documents to increase new energy transit operations subsidies and progressively reduce the amount of price subsidies for refined oil every year. Price subsidies for refined oil and new vehicle transit operations were coupled with the popularization and use of new energy public transit. Meanwhile, we specified measures to evaluate the popularization and use of new energy public transit in provinces (or regions and municipalities). We developed detailed standards for subsidy fund applications, evaluation work, and quality and safety obligations for new energy vehicles. We further defined the development path for new energy public transit, quantified evaluation criteria, and established preliminary statistical and administrative systems, thereby providing institutional guarantees for the development of new energy public transit. Fourth, we broke open the infrastructure bottleneck in the popularization of new energy public transit. The State Council formulated related policy documents centered on specialized charging facilities built for public transit and rental vehicle lots and stations, to strengthen their planning, design, and guidance. We prioritized building charging facilities at parking lots and stations based on the demand of line operations, and building a reasonable number of stand-alone rapid charging and battery exchange stations along roadsides.

Section 2 Local Practices

I. Chongqing

Chongqing was the first city in the nation to popularize and use a fleet of new energy vehicles. It was a pilot city in the first Ten Cities, 1,000 Vehicles energy conservation and new energy vehicle demonstration and popularization project, a Transit Metropolis demonstration city, and a pilot city for building a low-carbon transportation and shipping system. Chongqing has used the development of new energy vehicles as a starting point for a series of highly effective efforts.

1. IMPROVING PUBLIC TRANSIT SERVICE STANDARDS

Chongqing promoted new energy public transit vehicles as a breakthrough point to actively improve vehicle standards. In 2015, Chongqing upgraded some of its transit vehicles to gas-electric hybrid rapid buses with larger compartment spaces and

more comfortable rides. The upgraded new energy transit vehicles use stepless shifting and can climb hilly road sections more easily. The vehicles' shaking is dramatically reduced on congested road sections, thereby effectively increasing ride comfort. The introduction and use of new energy vehicles has received favorable reviews from passengers.

2. MAKING NEW ENERGY VEHICLES AVAILABLE FOR RENT

In 2015, Chongqing launched a project for electric vehicle rentals, introducing an initial fleet of 300 all-electric vehicles. In Western New City, car rental locations were established at light rail stations, institutions of higher education, residential districts, and other locations from which more city residents travel, in order to facilitate the movement of city residents to and from Western New City and the Shapingba shopping district. Two types of vehicles, two-seaters and four-seaters, are provided. They can be rented by the hour or the month, and serve passengers with different needs. Meanwhile, the rental procedures have been simplified. City residents need only bring a driver's license, identification card, and bank card to be able to complete the rental paperwork. The launch of the new energy vehicle rental project dramatically increased travel convenience for city residents and set a positive example for other cities.

3. IMPLEMENTING NEW ENERGY VEHICLE POPULARIZATION SUPPORT POLICIES

In 2014, the *Work Plan for the Popularization and Use of New Energy Vehicles in Chongqing (2013–2015)* was introduced to plan for the popularization of 3,000 new energy vehicles between 2013 and 2015, and to construct five comprehensive charging stations, 11 rapid charging stations (or points), and 275 slow charging points. A total of 15 million yuan in municipal fiscal subsidies was provided. In addition, 267 million yuan in subsidy funds was designated for purchasing new energy vehicles. Related incentive policies were implemented and the vehicle purchase tax, value-added tax, and enterprise income tax for new energy vehicles were correspondingly reduced. New energy vehicles used for the postal and express shipping industries were given priority when issuing travel permits for trucks.

II. Nanjing

Nanjing is a national new energy vehicle popularization and use city and a Transit Metropolis model city. It has benefited from the successful implementation of its model projects, which have built a good foundation in Nanjing for the popularization of new energy transit vehicles.

1. USING MAJOR EVENTS AS JUNCTURES FOR PROMOTING NEW ENERGY VEHICLES

In 2014, Nanjing used the Youth Olympics as a juncture to build a new energy vehicle fleet consisting of public transit vehicles, rental cars, and shuttles. Three auxiliary electric vehicle charging stations and 1,200 charging points were also built, providing an effective transportation guarantee for the Youth Olympics. Publicity was also given to the concept of Nanjing's green, sustainable development. Thereafter, Nanjing successively held events such as "green travel months," using major events as junctures to spur the use of new energy vehicles. This gained the approval of numerous city residents and provided an example to other cities for the work of popularizing new energy vehicles.

2. NEW ENERGY VEHICLE POPULARIZATION EXPERIENCE GAINS INTERNATIONAL RECOGNITION

Nanjing highly values energy conservation and emissions reduction in its urban passenger transport and transit, and has achieved positive results. By the end of November 2015, 2,305 new energy public transit vehicles of various types and 940 rental cars were in use across the city. In 2014 alone, carbon dioxide emissions were reduced by 24,600 tons. Because of its outstanding performance in new energy vehicle popularization and use, energy conservation, and emissions reduction, Nanjing was the second Chinese city after Shenzhen to be awarded the Global Urban Transport Leadership Award from the Cities Climate Leadership Group (C40) in November 2015, during the United Nations Climate Summit in Paris. The success and experience of Nanjing in reducing carbon dioxide emissions by turning to electric power for its urban public transit provides an inspiration for resolving global climate change.

3. FORMULATING DETAILED SUBSIDY RULES, DEFINING SUBSIDY PROGRAMS

In June 2015, to thoroughly implement the subsidy fund application and redemption work for new energy vehicles, Nanjing followed the spirit of documents like the *2015 Detailed Rules for the Implementation of Provincial Fiscal Subsidies for the Popularization and Use of New Energy Vehicles in Jiangsu Province* (Jiang Cai Gong Mao (2015) No. 19), and introduced the *2015 Detailed Rules for the Implementation of Fiscal Subsidies for Popularization and Use of New Energy Vehicles in Nanjing*. It defined the subsidy amounts, criteria, and incentive methods for urban passenger transport enterprises engaged in public transit and rentals, as well as for their consumers. This further mobilized the enthusiasm of enterprises for using, developing, building, and producing new energy vehicles and the auxiliary infrastructure, while guaranteeing the realistic issuance of subsidies and incentive funds, with a positive effect.

4. ESTABLISHING A PATH FOR NEW ENERGY VEHICLE DEVELOPMENT BASED ON LOCAL CONDITIONS

In 2015, Nanjing introduced the *Opinions of the Nanjing Municipal Government on Further Supporting the Popularization and Use of New Energy Vehicles* (Ning Zheng Fa (2015) No. 143), which defined a path for development that combined market leadership and government support. With government as the guide, it uses market operation methods to uphold the principles of innovative power, research and development, manufacturing, and business coordination and development to steadily popularize new energy vehicles. Incentive policies to purchase and use new energy vehicles were implemented more robustly by accelerating the demonstration, popularization, and use of new energy vehicles and by planning and building charging facilities.

III. Shijiazhuang

Shijiazhuang achieved good results by making government the guide, using public transit and rental enterprises as models, and promoting new energy vehicles in the urban passenger transport field by means of multiple methods.

1. RESEARCHING AND FORMULATING IMPLEMENTING OPINIONS ON THE

POPULARIZATION OF NEW ENERGY VEHICLES

In May 2015, the *Implementing Opinions on Accelerating the Development, Popularization, and Use of New Energy Vehicles in Shijiazhuang* (Shi Zheng Fa (2015) No. 10) were issued to encourage replacing rental cars with electric vehicles and assist the new energy vehicle industry to develop by leaps and bounds. These opinions proposed cultivating localized industries for new energy vehicles and their auxiliary facilities by strengthening efforts to popularize new energy vehicles, building the auxiliary facilities, and establishing a comprehensive monitoring and service guarantee system. These Opinions assigned the duty of fulfilling each related measure to a government department to effectively guarantee the implementation of each measure.

2. INCREASING GOVERNMENT SUBSIDY EFFORTS

Shijiazhuang intensified its efforts to subsidize new energy vehicles in the urban passenger transport field. In addition to central government and provincial fiscal subsidies, enterprises purchasing vehicles were given subsidies based on the central government fiscal subsidy standard of a 1:1 ratio, dramatically reducing the vehicle purchasing burdens of public transit enterprises. Meanwhile, Shijiazhuang also incorporated the construction of charging (or battery exchange) facilities into urban project planning and encouraged the construction of public, private, and dedicated charging (or battery exchange) facilities. It encouraged specialized transportation vendors to invest in the construction and operation of new energy vehicle charging (or battery exchange) facilities, with municipal financing providing a subsidy of 5% of the total investment in equipment, which guaranteed the introduction and operation of new energy vehicles.

3. REPLACING TRANSIT VEHICLES THAT FAIL EMISSIONS STANDARDS WITH NEW ENERGY TRANSIT VEHICLES

Shijiazhuang explicitly prioritized stronger support for the popularization and use of new energy vehicles in urban passenger transport fields such as public transit vehicles and rental cars. Obsolete public transit vehicles that failed emissions standards were to be completely replaced with new energy vehicles. Newly added or

updated public transit vehicles were to primarily be new energy vehicles. Updating rental cars with electric cars was also encouraged.

IV. Qingdao

Since the Twelfth Five-Year Plan, thanks to the Transit Metropolis model projects and the popularization and use of new energy vehicles, Qingdao has vigorously developed its new energy public transit and obtained great results in the energy conservation and emissions reduction arena of the public transportation industry.

1. WIDESPREAD USE OF NEW ENERGY VEHICLES IN THE PASSENGER TRANSPORT FIELD

The city of Laixi in Qingdao has vigorously popularized new energy public transit. In May 2015, it introduced 110 all-electric public transit vehicles in its urban district to connect operational networks including route-based buses, inter-city public transit, and urban-rural public transit, becoming the nation's first city to have an entirely electric-based inter-city and intra-city public transit vehicle fleet. In addition, based on the requirements of the *Shandong Provincial Measures for Fiscal Support of New Energy Vehicle Demonstration and Popularization*, four public transit routes in the Laoshan Scenic Area were converted to all-electric public transit vehicles. This not only improved the ride experience; it also embodied the concept of environmental protection in a scenic area.

2. INNOVATION IN MODELS FOR NEW ENERGY VEHICLE POPULARIZATION

For its new energy vehicle popularization effort, Qingdao proposed the model of “driving vehicle popularization with charging facilities, and driving private vehicle use with group-based use.” In other words, a virtuous cycle of “interaction between cars and points” has gradually resulted by building the necessary charging facilities at sites such as government agencies, institutions of higher education, and major shopping centers, as well as residential districts meeting certain criteria.

Section 3 Essentials for Development

New energy vehicle popularization efforts in urban passenger transport have

obtained early results. Challenges remain, however, such as an imperfect legal and statutory system and the lack of a policy standards system. To further popularize the use of new energy vehicles, our focus will next be placed on the following efforts.

I. Further optimize the policy environment for popularizing new energy vehicles

First, broaden the sources of funding by further researching innovative financing channels for new energy public transit and rental vehicles and building related charging facilities. Second, accelerate the construction of charging stations, prioritizing the guarantee of available land to use for charging stations, and integrating charging facility planning into overall urban planning. Third, simplify the workflow for the approval and plate registration of new energy public transit and rental vehicles, and tilt policies toward new energy vehicles in terms of transportation demand management measures like parking fees, plate number-based use restrictions, and congestion fees. Fourth, provide electricity price subsidies or incentives for charging new energy vehicles, and research linking inter-province and inter-city charging cards. Finally, refine new energy public transit operations subsidy policies, and research and formulate subsidy policies for new energy public transit vehicles in the inventory before 2015.

II. Accelerate the improvement of policy standards systems for new energy vehicles

Research and formulate policy regulations and standards for the maintenance, operations management, safety and emergency response, and obsolescence and recycling of new energy vehicles and charging facilities. Incorporate standards for new energy vehicles into urban passenger transport standards systems, improve the standards for new energy public transit and rental vehicles, and create a favorable policy environment for the popularization and use of new energy urban passenger transport vehicles.

III. Draft Thirteenth Five-Year Plan development plan for urban passenger transport new energy vehicles

Draft a development plan for urban passenger transport new energy vehicle

popularization and charging station construction during the Thirteenth Five-Year Plan period and do well the top-level design for popularizing new energy vehicles in the Thirteenth Five-Year Plan period. Organize the thinking for developing new energy vehicles in the urban passenger transport field, summarize the issues that arise during the popularization of new energy vehicles, and specify the work focus, difficulties, solutions, development objectives, and implementation path for our next steps.

IV. Enhance policy and technology research for the popularization of new energy vehicles

Engage in theoretical and technological research in the areas of new energy vehicle operations monitoring, effectiveness assessments, quantitative assessments for energy conservation and emissions reduction, cost-benefit analyses, and production technology innovation. Provide technological support, theoretical bases, and policy reserves for the popularization of new energy vehicles.