

Research on the Construction of Green Transportation City Strategy

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Abstract: In order to effectively address urban environmental protection issues, implement a sustainable green economy, build a regional transportation and ecologically civilized city, and build a “smart, green, safe and efficient” green transportation system, how to give full play to “high efficiency and low energy” The comprehensive advantages of green transportation with low consumption and low pollution have increasingly become the focus of common concern of all sectors of society. On the basis of the existing transportation development, this paper proposes a green transportation system creation model that focuses on broadening urban space, taking green transportation development as the concept and using technology application as the guide, and strives to build a green transportation demonstration city and realize the urban economy. The organic integration and coordinated development of benefits, social benefits and ecological and environmental benefits.

Key words: green transportation, strategy, energy saving

1. Introduction

According to IEA data, in 2014, China has become a global “global” emission power in terms of total carbon dioxide emissions, accounting for 29.6% of the total global carbon dioxide emissions (2014 total global carbon dioxide emissions of 35.7 billion tons), the only Countries with annual emissions exceeding 10 billion tons. Studies have shown that the current transportation industry accounts for 25% of global carbon dioxide emissions, and is one of the three major “carbon sources” except thermal power and buildings. The Oslo International Center for Climate and Environment published a research report saying that the total global carbon emissions have increased by 13% in the past 10

years, while the growth rate from transportation has reached 25%.According to the analysis of the development trend of carbon emissions, it is estimated that global vehicle carbon emissions will increase by about 50% by 2050.

According to the statistics of the International Energy Organization, the carbon dioxide emissions of China's commercial road transport (excluding urban public transport) in 2016 was 180.6 million tons, accounting for 21% of the total carbon dioxide emissions of 840 million tons of oil consumption, exceeding the world average by 3 percentage points. International and domestic experience shows that transportation energy consumption and carbon dioxide emissions account for a large proportion and rapid growth. It is a long way to go to develop a green, low-carbon and sustainable transportation system. Therefore, it is of great significance to build a green transportation system in an all-round and multi-angle,

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improve the transportation energy-saving emission reduction management mechanism, and explore and promote green transportation science and technology to further reduce carbon emissions, save energy, and strengthen environmental protection.

In order to effectively deal with urban environmental protection issues, implement a sustainable green economy, build a regional transportation and ecological civilization city, build a “smart, green, safe and efficient” green transportation urban system, and give full play to the green transportation system. The comprehensive advantages of efficiency, low energy consumption and low pollution have increasingly become the focus of comprehensive urban governance that is of common concern to all sectors of society.

2. Current Status of Green Transportation Research in China

In 1994, the international community first proposed the concept of green transportation development, and evaluated the priority of traffic travel from the modes of travel, energy consumption, effective use of vehicles, travel purposes, and individual characteristics of travellers. Change the way people travel. 2003 China's national level proposed to launch a “green transportation demonstration city” activity, encourage all regions to accelerate the construction of urban transportation infrastructure and smooth engineering, break the bottleneck restricting urban transportation development, alleviate urban ecological environmental protection issues, and clearly propose the use of science. Methods, techniques and measures to promote urban traffic loops that are compatible with economic and social development territory. In 2008, the United Nations proposed to use a low-carbon economy to address the challenges of climate change, and to view the low-carbon economy as an important way to achieve global economic transformation. At the end of 2013, the Ministry of Transport of the People's Republic of China proposed to speed up the construction of integrated transportation, smart

transportation, green transportation and safe transportation. Among them, “green transportation” is the development trend proposed for climate change and energy conservation and emission reduction. The 2016 National Transportation Work Conference proposed that in 2020 China should build a modern comprehensive transportation system in accordance with the basic requirements of “safe and convenient, smooth and efficient, and green and intelligent”. Throughout the world, the low-carbon economy has risen to the height of national and regional development strategies and leads the world. Changes in production patterns, lifestyles, values, etc. As the transportation industry is closely related to environmental pollution, how to build a low-energy, low-emission green low-carbon transportation system has become a consensus for achieving sustainable economic and social development.

3. Development Experience of Foreign Green Transportation

The United Kingdom is the first country in the world to lead the construction of a green transportation system. In 2003, the UK released “The Future of Our Energy: Creating a Low-Carbon Economy” and began to use the low-carbon economy as the primary strategic goal of the country's economic transformation. A set of policy systems, such as carbon trading market, subsidy policy, and change tax, are used to control and guide carbon emissions from transportation. At the same time, London began to implement peak traffic congestion charges in several of the most congested streets in the city. Due to the significant effect, the toll area was gradually expanded, urban congestion was greatly reduced, and the speed of vehicles was significantly improved, which was widely supported by the public. British transport in 2007 The Ministry of Commerce issued the “Low-Carbon Transportation Innovation Strategy”, which analyzed and analyzed the low-carbon technologies in the road, aviation, railway and shipping sectors, and established a comprehensive

framework in terms of market instruments, enforcement measures, financial support, information promotion and awareness raising. And encourageive policy programs are proposed from low-carbon transportation technology research and development to commercial promotion. In 2009, the British Ministry of Transport introduced the transportation industry transformation plan “Low-carbon transportation: a greener future”, which describes the development direction and overall strategic planning of the low-carbon transportation system in the next 10 years, and is committed to providing a healthy society, economy and life. A harmonious and sustainable future.

The United States is a country with a large global carbon dioxide emissions. Over the years, the United States has been committed to implementing energy conservation and consumption reduction in the whole society, and vigorously developing green energy, and achieved remarkable results in energy conservation and emission reduction. Especially in the development of green transportation, the United States has undergone major changes in transportation policy since the 1990s, and successively introduced the Intermodal Ground Traffic Efficiency Act and its follow-up bills, the 21st Century Traffic Equity Act, and Safe, Responsible, The flexible and efficient Traffic Equality Act and other policy guidelines to guide the transformation of green transportation, and for the first time put forward the concept of “Intermodal”, which is considered to be relatively independent of aviation, railway, sea, road and public transport. Effectively connecting transportation methods into a safe, efficient, fair, economical and environmentally friendly integrated transportation system can effectively alleviate the contradiction between the growing transportation demand and the environment and energy resources.

Japan has always been at the forefront of global green transportation construction. Japan is a country with a severe shortage of energy resources. Over the years, Japan has been committed to building a

low-carbon society, and always regards energy conservation and emission reduction and new energy development as a national strategy. In 2006, based on the initial “Japan Biomass Energy Integrated Strategy”, we further adjusted and improved the low-carbon society construction strategy, accelerated the utilization of transportation system biofuels, reduced dependence on oil, diversified energy consumption, etc. The six aspects have been adjusted accordingly. In 2008, the Japanese government issued the “Low Carbon Social Action Plan”, proposing to significantly increase the popularity of electric vehicles by 2020, and promote the use of electric vehicles through a series of policy measures, such as implementing the government subsidy policy for electric vehicles and establishing half. Measures such as hourly fast charging facilities further reduce vehicle carbon emissions. In 2009, the Japanese government proposed an economic stimulus plan of up to 100 billion US dollars to promote environmental protection projects including the promotion of electric vehicles to achieve the “low carbon revolution”.

4. Trends in Green Transportation at Home and Abroad

The main development trends of green transportation in cities at home and abroad can be summarized as three points:

4.1 Improve Public Transportation

Advocating public transportation strategy is an important measure to realize the development of green transportation. There is almost no exception for the development of public transportation systems at home and abroad. Public transportation is the preferred mode of urban transportation. It is built with rapid, large-capacity, intermodal public transport system, with rail transit as the backbone and regular traffic as the main body. A multi-level public transportation service system that is well connected to the new car.

4.2 Promoting the Application of Low-Carbon Green New Transportation Technology is a Powerful Driving Force for Energy Conservation in Transportation

Promoting the application of low-carbon green technology is an important means to achieve energy conservation and emission reduction in transportation, and an inevitable trend in the transportation industry to achieve sustainable development. The first is to optimize the transportation energy structure, improve energy efficiency, reduce the oil dependence of the transportation industry, and reduce traffic emissions. Second, we will continue to improve the repayment of transportation vehicles, eliminate outdated transportation vehicles with high pollution and high energy consumption, and actively promote energy-saving and emission reduction technologies. Third, guided by mobile Internet technology, it actively promotes the promotion and application of big data, cloud computing, and Internet of Things technologies, and promotes the coordinated connection and interconnection of various modes of transportation. Establish a comprehensive transportation management and public information service platform to enhance data sharing between various modes of transportation.

4.3 Giving Priority to the Development of Public Transportation and Modest Adoption of Fiscal and Taxation Policies Is an Effective Means of Regulating Energy Conservation and Emission Reduction in Transportation.

Establish a green travel structure for "bus + slow travel". On the one hand, priority is given to the development of public transportation and slow traffic, and reducing dependence on small cars is a strategic choice to optimize the traffic structure, alleviate traffic congestion, and build a resource-saving and environment-friendly society. Through the priority protection of road rights and funds, it is better to organize in the hubs, nodes and other places to form a synergy to improve the competitiveness of "bus + slow

travel" and cars. On the other hand, take necessary transportation demand management measures to guide the rational use of vehicles with policy and economic means.

5. Establish and Improve the Development Mechanism of Green Transportation Cities

5.1 Establish and Improve the Statistical Monitoring and Evaluation System for Transportation Energy Conservation and Emission Reduction

Comprehensively improve various statistical indicators such as road transportation, waterway transportation, and urban passenger transportation to ensure that the indicator data is available, comparable, detectable, and measurable. Implement the energy consumption monitoring and reporting system for key enterprises in the transportation industry, strengthen the statistical monitoring and information reporting of energy consumption of enterprises, fully utilize intelligent and informational means, and steadily promote online declaration and monitoring of energy consumption and carbon emissions, and improve data. Source credibility reliability, improve the automation and informationization level of statistical monitoring, and strengthen the investigation, analysis, prediction and release of statistical indicators for energy conservation and emission reduction.

5.2 Improve the Laws, Regulations and Standards for Green Transportation

5.2.1 Improve the Laws and Regulations on Green Transportation

Based on the laws and regulations on energy conservation, emission reduction, environmental protection, and energy resource utilization at the national and provincial levels, and in conjunction with the actual situation in Lanzhou, we will actively study and formulate local laws and regulations on energy conservation and emission reduction, and improve investment, finance, taxation, finance, and subsidies. Relevant regulations on land use, price, service,

information, science and technology, etc., focus on strengthening fiscal and investment, subsidy compensation, land security, operational supervision, market mechanism and other aspects of regulation and policy research, and speed up the promotion of transportation by the mandatory regulation of laws and regulations. Energy conservation and emission reduction work, strengthen the implementation of green and low carbon requirements in the entire process of transportation infrastructure construction.

5.2.2 Improve the Standard of Green Transportation Standards

In combination with the development goals and key tasks of green transportation cities, we will study and formulate a standard system for energy conservation and emission reduction of transportation, further improve local and enterprise-level standards, and solve major common problems and key technical problems in the industry's energy conservation and emission reduction work. Study and formulate the fuel consumption, carbon emissions and major pollutant discharge grading limits and access standards for transportation construction machinery and other equipment; specify the requirements for green recycling and low carbon in the technical specifications for transportation infrastructure construction. Improve the energy conservation assessment and review system for transportation fixed assets investment projects, and use energy conservation requirements as rigid indicators in project establishment, preliminary design, construction and acceptance. Promote the structural optimization of transportation equipment in the direction of high energy efficiency, low emission and cleanliness.

6. Develop an Intelligent Transportation System

6.1 Speed up the Construction of the Coordination Center for Urban Traffic Operations

Promote the top-level design of urban transportation management and service informatization, and build an

integrated traffic operation monitoring coordination and emergency command center, which will become the backbone of the city's comprehensive transportation coordination, traffic safety emergency command, data sharing and information release, covering bus rental monitoring and transportation supervision, highway waterway management, road administration, travel information services, etc., to achieve traffic operation monitoring, integrated passenger transport coordination command, traffic travel information services and other functions, to promote the mode of transport development, from the independent operation of various industries to the comprehensive transport coordination "transformation" into one The integrated and intelligent transportation command and support system will improve the overall traffic efficiency of the city, alleviate urban traffic congestion and improve the level of safety and security services.

6.2 Construction of a Public Information Service Platform for Logistics

Focusing on the logistics business of logistics information service, operating vehicle and employee qualification inspection, freight transaction information service, transportation resource integration and dispatch, etc., accelerate the construction of Lanzhou logistics public information service platform. The logistics public information service platform will provide an information management and decision support platform for regional logistics, strengthen the development and utilization of freight and logistics information resources, and provide reliable and effective services to transportation and logistics enterprises, suppliers, industry authorities and the public. Real-time information service.

6.3 Create a Passenger Transportation Network Ticketing Service Platform

Construct a unified passenger transportation online ticketing service platform, realize return route, off-site

ticket sales, public water network ticket sales and public information services, etc., conduct online ticketing settlement for stations, and carry out clearing and settlement with other stations, and classify and collect information on station ticket sales. It provides assistance to all levels of management to make decision-making, provide passengers with information services for the public, and realize online booking. By providing a unified channel ticketing interface, the Internet, mobile phones, agent points, self-service terminals and mobile terminals can be used to arrange transportation capacity and facilitate people's travel, further improve operational efficiency, industry supervision level, standardize market order, and apply advanced. Information technology to achieve road passenger transport linkage management, statistical analysis, decision support and integrated travel services.

6.4 Strengthen Green and Low-Carbon Public Travel Information Services

Construct a public travel information service system covering various modes of transportation such as roads, waterways, railways, aviation, urban passenger transport, etc., covering the travel needs of different groups of residents, passengers, tourists, etc., and promoting the integration of urban and rural passenger transport information and cross-regional transportation information. Inter-communication and traffic travel information support, to achieve traffic-related information (highway, high-speed road conditions information, water transport information, public transport, long-distance, meteorological information, etc.) collection, processing, query, release and management, to complete various information resources integration and information sharing. Use the portal, TV, transportation service hotline, broadcasting, variable information board, mobile terminal and other media to provide timely and accurate integrated traffic

information services to the public to provide safe, convenient, comfortable and low-carbon travel solutions.

In brief, to effectively deal with the urban environment protection, sustainable development of green economy, the construction of regional ecological civilization city transportation, building intelligent, green, safe, efficient, "green transportation system", give full play to the high efficiency, low energy consumption, low pollution green transportation comprehensive advantage is more and more become the focus of common concern from all walks of life, realize the green transportation system, to actively improve the ecological environment to the survival of humans and the protection of natural resources is of important value.

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