

EVOLUTION OF CHINA'S CITY-LEVEL NEW ENERGY VEHICLE POLICIES

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Overview

Diffusion of new energy vehicles (NEVs) is regarded as an important strategy for controlling the CO₂ emissions. A series of policies have been released at city level in China to promote the deployment of EVs, especially after the establishment of the promotion and demonstration cities (hereafter, "pilot cities"). Those NEV promotion policies are diverse and complicated. Some researchers are interested in revealing the logic law of NEV policy developing process. Several earlier studies have contributed to trace the evolution of NEV policies enacted by China's national authorities from different perspectives. Former studies neglected municipal NEV policies, but Zhang and Qin (2018) conducted an analysis of the number of China's municipal NEV policy and the NEV policies promulgated by Shenzhen government from 2015 to 2016. However, detailed evolution characteristics of NEV promotion policies enacted in different cities or city groups have not been revealed. Heterogeneity of the policy evolution exists among different cities and it is necessary to grasp the evolutionary law of NEV policies at city level to provide the municipal governments targeted implications for designing more effective EV promotion policies.

The framework of this study is as follows. In Section 1, we make an introduction on the research background including the literature review. Then the methods and data are described in Section 2. In Section 3, we show the results and discussions. Policy suggestions are provided in the final section.

Methods

1. Models

We use text mining and content analysis methods in this paper.

2. Data sources

We collected the policy documents during 2009 to 2018 of all the 88 EV pilot cities in China mainly from the city governments' official websites and some other websites and materials related to NEV policies are referred to as well. 250 policy documents issued by the pilot cities are collected and 16 cities did not release any policies during this period.

Results

NEV promotion policy development have passed through 3 main stages since 2009. The first one is the introduction stage (2009-2012), during when the main policy enacted by most pilot cities is subsidy policy. The second one is the rapid growth stage (2013-2015). During this period, a large quantity of policies are released by more and more cities and the core policies are charging infrastructure construction policy and subsidy policy. At last, NEV policy development is in its steady development stage (2016-). Cities are placing more emphasis on the operation of the charging infrastructure beyond the infrastructure construction during this period.

Cities in the Yangtze Delta area, Fujian province and Jiangxi province are more active in releasing the relevant policies, but there is no direct correlation between the NEV diffusion and the number of policies. Abolishment policies of traffic restriction enacted by Beijing, incentive policies on NEV time-share rental model and mini bus diffusion released by Hangzhou etc. were made with full consideration of those cities' local situation. On the contrary, some municipal governments ignored local development characteristics, which made a contribution to the inconsistency between the number of policy documents/ instruments and NEV diffusion.

Conclusions

NEV promotion policies has been through three development stages. As the policies are becoming more diverse, charging infrastructure construction incentive policies have been focused on over all these three periods and local governments are paying more attention to NEV market operation rather than governments' direction. After the classification and analysis, we found more than 31 kinds of policy instruments have been designed. Evolution of those policy instruments, matched with 3 policy objectives and different policy objects were analyzed in chronological order. Based on the three-dimension analysis, we extract the special policies of different cities. Many local governments ignored local situation and characteristics when making policies. It is suggested that municipal

governments can not rely on the number of policy instruments to promote NEV. On the other hand, more targeted and innovative policies need to be made by different cities.

References

Zhang, L., Qin, Q. D., China's new energy vehicle policies: Evolution, comparison and recommendation. *Transportation Research Part A*, 2018, 110: 57-72.