Research on NEV Credits and Trade System

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Main Contents

I. Research Background and Purposes
II. Profile and Implementation Effects of California ZEV Regulation
III. Viability of NEV Credit Management in China by Learning from California ZEV Regulation
IV. Basic Idea of Implementing NEV Credit Trades
V. How to Calculate Enterprises’ Credits
VI. Establishment of NEV Credit Management System
The Third Plenary Session of the Eighteenth Central Committee decided that the trade system of energy conservation amount, carbon emission permits and emission permits shall be promoted and the market mechanism attracting the social capital investment in ecological environmental protection shall be established.

Endogenous mechanism to promote the industrialization of new energy vehicles in automobile enterprises could not be established under the current tax support policies.

With large vehicle production and sales amount, China faces the increasingly heavier pressure from energy conservation and emission reduction.

The research and establishment of credit trade system in China to promote the new energy vehicle shall be accelerated.

California ZEV mandatory provisions of the credit trade system contribute to the popularity of electric motors.

Automobile enterprises shall be required to meet new energy vehicle production and sales amount, and enterprises producing fuel vehicles shall be obligated to promote new energy vehicles.

The supporting credit trade system of new energy vehicles shall be established to provide more incentives for enterprises with cutting-edge technologies by the market mechanism.
I. Research Background and Purposes

According to California’s experience, the mandatory market mechanism that requires enterprises to promote new energy vehicles and implements the credit trade system of new energy vehicles shall be established, which is of great significance for the accelerating industrialization of new energy vehicles in automobile enterprises.

**Significance**

- **Reducing exhaust pollution**
  - The energy conservation and emission reduction can be promoted and enterprises producing fuel vehicles shall be required to promote new energy vehicles.
- **Promoting industrial development**
  - The development of new energy vehicles can bring about new economic growth points and promote the change from a big country to a powerful one in automobile industry. When the market fails to work (enterprises are unwilling to invest in new energy vehicles), governments shall stipulate the proportion of new energy vehicle production.
- **Building market mechanism**
  - Given insufficient incentives of the current financial and tax policies, it is of necessity to build the market environment that facilitates the development of new energy vehicles by combining mandatory provisions and policies and credit trade system. The policy mechanism of “Carrot and Stick” shall be established as well.
- **Realizing the promotion targets of new energy vehicles**
  - In order to realize the target of the accumulative production and sales of 5 million new energy vehicles by 2020, target decomposition shall be conducted.
- **Promoting industrial management innovation**
  - The change of industrial management from the prior management to the in-management and after-management shall be promoted: financial and tax policies shall be changed from R&D subsidy into market incentives; emphasis shall be switched from the prior elements (investment and market access) to the in-management and after-management.
The government stipulates the mandatory proportion of ZEV sales and requires enterprises with automobile sales in California reaching the scale to reach the credit target of zero emission vehicles.

In order to avoid the punishment from the government, automobile enterprises failing to meet the requirements can buy ZEV credits from other enterprises.

II. Profile of California ZEV Regulation
Ⅱ. Implementation Effects of California ZEV Regulation

- **Rapid Development of ZEV**
  Promoted by mandatory requirements and multiple policies, new energy vehicles have become popular in an accelerating way in California; California has become an important sales market for new energy vehicles where electric motor sales in 2013 accounted for 44% of that in America.

- **Promotion of Diversified Electric Motors**
  California’s stipulation about ZEV has become the strong impetus to the increasingly diversified electric motors; the risk of financial fines forces automobile enterprises to increase the plan of clean vehicles, which promotes the R&D and innovation of clean vehicles and provides more zero emission vehicles for California customers.

- **Development Soil and Compliance Flexibility for Manufacturers**
  Provisions of ZEV, especially credit trade system, offer innovative enterprises good development soil and automobile enterprises the compliance flexibility without effects on the overall mandatory target of zero emission vehicles.

- **Development of Related Industries**
  Construction of charging infrastructure and investment in electric motor sales and after-sales services harvest a rapid development due to the electric motor growth.

California’s policy of “Carrot and Stick” is positive in many aspects
Ⅲ. Viability of NEV Credit Management in China by Learning from California ZEV Regulation

- **Development of new energy vehicles** is a big concern of Party Central Committee and State of Council; the two surveys by Ma Kai; new energy vehicles are cultivated and developed more quickly as the strategic emerging; the road China must follow by Xi Jinping.

- **The international experience** from California’s ZEV Regulation provides us with important reference; the distinction between priorities and non-priorities, required percentages of ZEV, and ZEV score in the policy about California’s ZEV Regulation makes the policy easier to be implemented.

- **Promotion and application** of new energy vehicles in China gradually form a complete policy system; strong and powerful coordination between sectors; industrial management mechanism provides a good basis for the implementation of NEV credit management.

- **The basis for industrialization of NEV in China** provides the market for enterprises to fulfill credit targets; advantageous enterprises and newly-built NEV enterprises will provide sufficient credits for the market.
IV. Basic Idea of Implementing NEV Credit Trades

General Idea

A feeding mechanism that the automobile industry itself supports NEV development shall be established.

NEV credit market shall be built to allow the credit trade between enterprises.

When manufacturing one fuel vehicle, enterprises will owe the government the fixed credits and thus have to return them by manufacturing NEV (or by purchasing credits from enterprises with surplus credits), or enterprises will be punished by the government.

The market incentives shall be adopted so that NEV promotion cost can be borne in part by the society and enterprises with cutting-edge technologies can be encouraged to launch a long-term investment in NEV. The credit price shall be set so that enterprises can decide whether they should R&D NEV or purchase the credits from other enterprises.
Implementing Steps of NEV Credit Management

1. Large-scale enterprises shall be required to return the indebted credits.

2. The list of enterprises which are obliged to return the indebted credits shall be made according to the automobile production and sales scale during the recent three years.

3. The indebted credits will be based on production and sales amount of fuel vehicles.
   - Credit requirements for enterprises shall be determined and then gradually elevated in the unified proportion (for instance, 1% in 2015) and then gradually elevated.
   - Production accounting: differentiated accounting on production shall be made according to the application of cutting-edge technologies.

4. The earned credits will be based on NEV production and sales amount.

5. New energy vehicles mainly include BEV, PHEV, and FCV.
   - Differentiated calculation shall be adopted by combining earning credits through NEV and the current NEV subsidy policy.
   - Credit transfer and trade is allowed to encourage enterprises to promote NEV industrialization in advance.

6. When the indebted credits exceed the earned, enterprises shall purchase them from the government.

   - When the indebted credits exceed the earned, enterprises shall purchase them from the government.
   - The credit price shall be set by the government.
V. How to Calculate Credits in Enterprises and the Industry

Take the enterprise as an example:

Enterprise’s annual production: 150,600
Including ordinary CEV of 100,000, vehicles with advanced energy-efficient technologies of 30,000, and HEV of 20,000
The production of this year can be calculated as follows:
\[100,000 + 30,000 \times 0.5 + 20,000 \times 0 = 115,000\]
The indebted credits are: 115,000 × 1% = 1150

The earned credits of NEV can be calculated as follows:
PHEV: 500 × 1 = 500
BEV: 100 × 4 = 400
And NEV = 500 + 400 = 900

\[-1150 + 900 = -250\]

Whether automobile enterprises shall perform their obligations of returning the indebted credits based on the automobile production during the recent three years or the past 1 year, for instance, the production of above 100,000 fuel vehicles means the enterprise has to bear the credits at the proportion of 1%.

Previous credits can be carried forward
NEV credits can be bought from the government
NEV credits can be bought from other enterprises

Previous credits can be carried forward
**V. How to Calculate Credits in Enterprises and the Industry**

**Take the passenger vehicle industry as an example:**

Let's assume the total production of large-scale enterprises in the industry is \(30,000\) including vehicles with advanced energy-efficient technologies of \(2,000,000\) and HEV of \(1,000,000\). The effective production of this year is:

\[
12,000,000 + 2,000,000 \times 0.5 + 1,000,000 \times 0 = 13,000,000
\]

The indebted credits are:

\[
13,000,000 \times 1\% = 130,000
\]

The earned credits of NEV can be calculated as follows:

- **PHEV**: \(10,000 \times 1 = 10,000\)
- **BEV**: \(20,000 \times 4 = 80,000\)
- **And NEV**: \(10,000 + 80,000 = 90,000\)

The list of large-scale enterprises in the industry shall be made.

Previous credits can be carried forward.

NEV credits can be bought from the government.

Efforts shall be made to produce another 10,000 BEV.
VI. Establishment of NEV Credit Management System

Establishment of NEV Credit Management System shall be implemented from the following four aspects: the identification of punitive measures, the building of the credit management platform, the issuance of NEV credit management methods, and the improvement of supporting policies.

**Identification of punitive measures,**
Punitive measures for enterprises failing to perform NEV credit requirements shall be identified, for instance, those enterprises cannot enjoy the policy support.

**Building the credit management platform,**
Management responsibilities of different sectors: to make credit trade rules, build credit market, conduct credit management, and supervise the government in punishing enterprises.

**Issuance of NEV credit management methods,**
To decide the scale threshold, annual proportion requirements, and calculating methods of credit target, and model-credit setup and to calculate the credits for annual NEV production; credit transfer and trade rules shall be formulated.

**Improvement of supporting policies,**
The charging infrastructure development plan and technical standards, urban plan and the standards, electricity price, and land use policy shall be improved to speed up the construction of the charging infrastructure.
Thanks!

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