# Research on NEV Credits and Trade System

Liu Bin
Auto Industry Policy Research Section
China Automotive Technology & Research Center

2014/11/21

# **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

# I. Research Background and Purposes



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.

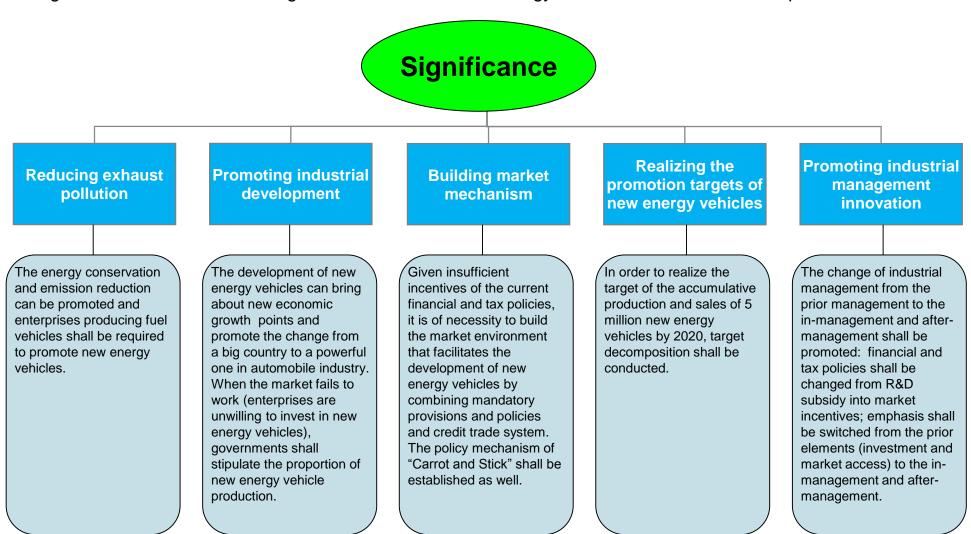
Automobile enterprises shall be required to meet new energy vehicle production and sales amount, and enterprises producing fuel vehicles shall be obligated to promote new energy vehicles.

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.



# **II.** Profile of California ZEV Regulation





# California Zero Emissi Vehicle Regulation



Mandatory
Proportion of
ZEV Sales

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.



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

### **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.

California's policy of "Carrot and Stick" is positive in many aspects

# • 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.

# III. Viability of NEV Credit Management in China by Learning from California ZEV Regulation



California's provisions of ZEV

### **Viability**

China's NEV Credit Management



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

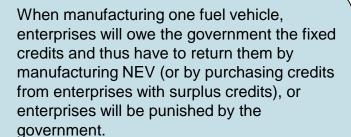


A feeding mechanism that the automobile industry itself supports NEV development shall be established.



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







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.

# IV. Basic Idea of Implementing NEV Credit Trades

### Implementing Steps of NEV Credit Management









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

- •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.
- 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.

- 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.
- 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:

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%

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\*0.5+20,000\*0=115,000 The indebted credits are:115000\*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** 

Previous credits can be carried forward

NEV credits can be bought from other enterprises

NEV credits can be bought from the government

# V. How to Calculate Credits in Enterprises and the Industry



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

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

Let's assume the total production of large-scale enterprises in the industry is 15,030,000 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\*0.5+1,000,000\*0=13,000,000
The indebted credits are: 13,000,000\*1%=130,000

The earned credits of NEV can be calculated as

follows: PHEV: 10.000\*1

PHEV: 10,000\*1=10,000 BEV: 20,000\*4=80,000

And NEV=10,000+80,000=90,000

-130000+90000=--40000 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!

LIU Bin

Auto Industry Policy Research Section

China Automotive Technology & Research Center

Tel:+86-22-84379390 13820500929

Fax:+86-22-84379387

E-mail: liubin@catarc.ac.cn newbring@163.com