

PROPOSED TEMPORARY MANAGEMENT REGULATION FOR CORPORATE AVERAGE FUEL CONSUMPTION AND NEW-ENERGY VEHICLE CREDITS FOR NEW PASSENGER CARS IN CHINA

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On September 22, 2016, China's Ministry of Industry and Information Technology (MIIT) proposed a *Temporary Management Regulation for Corporate Average Fuel Consumption (CAFC) and New-Energy Vehicle (NEV) Credits* for public comment. This proposal was rolled out in the context of the Chinese central government's decision to phase out its decade-long subsidy program for NEVs in 2021. The proposal essentially would add a new NEV credit program to the existing corporate average fuel consumption regulation for passenger cars overseen by MIIT. The following summary provides an overview of the key elements of the proposal.

APPLICATION

This regulation applies to all enterprises selling passenger cars in China, including domestic manufacturers and importers (interchangeable with auto companies hereafter). All passenger cars sold in China, regardless of fuel type, will be taken into account. These include NEVs as defined in MIIT's NEV Market Entrance Regulation.¹

All auto companies will need to meet specific CAFC requirements, while large-scale companies—those with annual production or import volume of 50,000 or more traditional-fuel passenger cars—will need to fulfill both CAFC and NEV targets. Companies that do not reach this production or import volume need only to meet CAFC standards.

This integrated program aims to improve the fuel efficiency of traditional-fuel vehicles and to promote the deployment of NEVs in China. MIIT estimates that this program would save 35.5* million tons of fuel (equivalent to 114 million tons of CO₂ emissions) and generate a market of more than 5 million new-energy cars cumulatively from 2016 to 2020.

¹ The proposed amendment to the regulation was released by MIIT in August 2016 for public review. According to the current proposal, NEVs refer to those vehicles with new-type power systems, completely or mainly driven by new energies. These include plug-in hybrid electric cars (PHEV, extended-range electric cars included), battery electric vehicles (BEV), and fuel cell electric cars (FCV).

* As of 5/18/2018 this number been corrected from 3,546.7 tons to 35.5 million tons of fuel.

CAFC TARGET AND CREDIT

Each auto company is subject to a specific annual CAFC target, depending on its fleet mix, for each calendar year. If a company is both a manufacturer and an importer, then its CAFC target and actual CAFC performance should be calculated separately for domestically made and imported cars. Companies that fail to hit their targets will be subject to MIIT-imposed penalties as outlined on Page 8.

An auto company's CAFC target and actual CAFC are calculated by sales-weighting each car model's specific fuel consumption standard as prescribed in national standard GB 27999-2014 and its actual, certified fuel consumption. The detailed CAFC accounting method referred to in this regulation is also specified in GB 27999-2014 (Fuel Consumption Evaluation Methods and Targets for Passenger Cars).²

The fuel consumption standard for each vehicle model depends on vehicle curb mass (CM) as prescribed in GB 27999-2014. The standards are specified in Table 1.

Table 1. Weight-based fuel consumption standards by standard phase and calendar year

CM (kg)	Target fuel consumption (L/100km)			
	2012-2015 (Phase 3)		2016-2020 (Phase 4)	
	Regular cars	Special cars ³	Regular cars	Special cars ⁴
CM≤750	5.2	5.6	4.3	4.5
750<CM≤865	5.5	5.9	4.3	4.5
865<CM≤980	5.8	6.2	4.3	4.5
980<CM≤1090	6.1	6.5	4.5	4.7
1090<CM≤1205	6.5	6.8	4.7	4.9
1205<CM≤1320	6.9	7.2	4.9	5.1
1320<CM≤1430	7.3	7.6	5.1	5.3
1430<CM≤1540	7.7	8.0	5.3	5.5
1540<CM≤1660	8.1	8.4	5.5	5.7
1660<CM≤1770	8.5	8.8	5.7	5.9
1770<CM≤1880	8.9	9.2	5.9	6.1
1880<CM≤2000	9.3	9.6	6.2	6.4
2000<CM≤2110	9.7	10.1	6.4	6.6
2110<CM≤2280	10.1	10.6	6.6	6.8
2280<CM≤2510	10.8	11.2	7.0	7.2
2510<CM	11.5	11.9	7.3	7.5

² "Fuel Consumption Evaluation Methods and Targets for Passenger Cars," December 2014, China's Ministry of Industry and Information Technology, <http://www.miit.gov.cn/n1146285/n1146352/n3054355/n3057585/n3057589/c3616982/part/3616989.pdf>

³ Special cars here include those with three or more rows of seats and cars with automatic transmission.

⁴ Special cars here refer to cars with three or more rows of seats.

The Phase 3 and Phase 4 standards both include a phase-in schedule, shown in Table 2. According to this phase-in plan, manufacturers will need to meet their annual CAFC target—a product of MIIT’s prescribed annual target ratios and the manufacturer’s end-year CAFC target. The end year for Phase 3 is 2015 and for Phase 4, 2020.

Table 2. Annual target ratios by standard phase and calendar year

Standard phase	Calendar Year	Annual target ratio
Phase 3	2012	109%
	2013	106%
	2014	103%
	2015	100%
Phase 4	2016	134%
	2017	128%
	2018	120%
	2019	110%
	2020	100%

The calculation method is formulated into the following equations. For a given calendar year, the actual CAFC value (A_{CAFC}), the target CAFC value (T_{CAFC}) and annual CAFC target (R_{CAFC}) of an auto company producing or importing N models of passenger cars is calculated in the following way:

$$A_{CAFC,j} = \sum_{i=1}^N \left(A_{FC,i,j} \times \frac{V_{ij}}{\sum_{i=1}^N (V_{ij} \times W_{ij})} \right)$$

$$T_{CAFC,j} = \sum_{i=1}^N \left(T_{FC,i,j} \times \frac{V_{ij}}{\sum_{i=1}^N V_{ij}} \right)$$

$$R_{CAFC,j} = T_{CAFC,j} \times R_j \times AF$$

Where:

$A_{FC,i}$ refers to the actual fuel consumption of model i in calendar year j.

$T_{FC,i}$ refers to the target fuel consumption of model i in calendar year j.

V_i refers to the annual production or import amount of model i in calendar year j.

W_i refers to the supercredits given to model i in calendar year j (only applying to energy-saving cars and new energy cars).

R_j refers to the annual target ratio in calendar year j.

AF refers to the adjustment factor (only applying to small-volume enterprises).

The standards provide supercredits to energy-saving vehicles and NEVs. Energy-saving vehicles are defined as conventional-fuel vehicles with fuel consumption (measured on NEDC test cycle) not exceeding 2.8L/100km. The supercredits for energy-saving vehicles and NEVs decline gradually from 2016 to 2020. Table 3 provides the full detail of the supercredits by calendar year.

Table 3. Supercredits for energy-saving and new energy passenger cars

Calendar year	BEV	FCV	PHEV ⁵	Energy-saving vehicle ⁶
2016-2017	5	5	5	3.5
2018-2019	3	3	3	2.5
2020	2	2	2	1.5

Small-volume enterprises (SVEs) that produce or import fewer than an annual average of 2,000 cars in the past three years and also remain independent in vehicle production, R&D, and operation are eligible for relaxed CAFC requirements if they submit a fleet fuel consumption improvement plan to MIIT. SVEs committed to improving their fleet fuel efficiency by at least 6% annually may benefit from as much as 1.3 times their original annual CAFC targets in 2016-2020 (Table 4). Those that commit to at least an 8% annual gain can benefit from 1.6 times the original target.

Table 4. Adjustment factors for small-volume enterprises in 2016-2020

Committed annual improvement in fleet fuel efficiency	Adjustment factor
≥ 8%	≤ 160%
≥ 6%	≤ 130%

Following the calculation specified above, If an auto company’s actual CAFC is lower than its annual CAFC target for a given year, the company will generate CAFC credits. On the contrary, a company will face a CAFC deficit if its actual CAFC is higher than its target. In calendar year *j*, *CAFC Credit/deficit_j* (unit: L/100km) of a company is calculated using the formula below.

$$CAFC\ Credit/deficit_j = (R_{CAFC,j} - A_{CAFC,j}) \times \sum_{i=1}^N V_{ij}$$

NEV CREDIT AND ACCOUNTING

Large-scale auto companies must also meet their NEV target score. A large-scale auto company generates NEV scores by producing or importing NEVs. An auto company’s NEV score is calculated by summing up the products of the annual manufacturing or import volume of each NEV type and the per-NEV score (see formula below). Different per-NEV scores are assigned to each type of NEV (Table 5). Note that only NEVs meeting certain minimum electric-drive range requirements are assigned per-NEV

5 PHEV here refers to a plug-in hybrid electric car whose driving range in electric mode is no less than 50km.

6 Energy-saving vehicles here refer to passenger cars whose fuel consumption is no higher than 2.8L/100km.

scores. The actual NEV scores (A_{NEV}) of an auto company for a given calendar year are calculated by :

$$A_{NEV,j} = \sum_{i=1}^N (C_i \times V_{NEV,i,j})$$

Where:

C_i refers to the per-vehicle NEV score of model i .

$V_{NEV,i,j}$ refers to the annual production or import volume of a qualified NEV model i in calendar year j .

The per-vehicle NEV score varies by technology and electric driving range as specified in Table 5. The per-NEV score does not change during the regulatory period.

Table 5. Per-vehicle NEV score for BEVs, PHEVs and FCVs with different driving ranges in electric mode⁷

NEV TYPE	Per-vehicle NEV score of NEVs with different driving ranges in electric mode				
	80≤R<150	150≤R<250	250≤R<350	R≥350	R≥50
BEVs	2	3	4	5	-
PHEVs ⁷	-	-	-		2
FCVs	-	-	4	5	-

The NEV target score of an auto company is defined as a percentage of its total annual conventional-fuel passenger car production or import in each year. The percentage requirements for each calendar year between 2016 and 2020 are specified in Table 6.

Table 6. Percentage requirements for calculating NEV target score

Calendar year	Percentage requirement
2016	-
2017	-
2018	8%
2019	10%
2020	12%
2021 and subsequent years	To be formulated separately

Here is an example assuming that a large-scale auto company produces 100,000 gasoline passenger cars and 3,000 NEVs (including 2,000 BEVs with an electric range of 200km, and 1,000 BEVs with an electric range of 300km) in 2018. The company’s actual NEV score for that year is 2,000 x 3 + 1,000 x 4 = 10,000. And the company’s NEV target score is 8% x 100,000 = 8,000.

⁷ Extended Range Electric Cars included in PHEVs.

A company generates NEV score credits (or NEV credit hereafter) if its actual NEV score is greater than its target NEV score. It will face an NEV score deficit if its actual NEV score falls short of its target (as shown in formula below).

$$NEV\ Credit/deficit_j = A_{NEV,j} - R_{NEV,j}$$

Using the same example above, since this company's net NEV score is 10,000 - 8,000 = 2,000, the company generates 2,000 NEV credits in 2018.

CAFC AND NEV CREDIT TRANSFER, TRADE, AND MANAGEMENT

CAFC CREDIT MANAGEMENT

CAFC credits can be banked and carried forward for as many as the next three years, with different weighting factors applied to the credits (Table 7). The credits cannot be carried back, meaning auto companies cannot borrow their future CAFC credits to help offset a current year's CAFC deficit or non-compliance. Also, CAFC credits can only be transferred among shareholding/affiliated manufacturers.⁸ The transferred CAFC credits can be used only in the current year and cannot be transferred again.

Table 7. Weighting factors of carry-forward CAFC credits

Calendar year	Weighting factor for calculating carry-forward credit value
2013-2015*	80%
2016-2018	80%
2019 and after	90%

* Auto companies that meet the national fleet target of 6.9L/100km between 2013 and 2015 may generate CAFC credits. When calculating CAFC credits generated between 2013 and 2015, use the lower value between a company's CAFC target and the national fleet target of 6.9L/100km as the company CAFC target.

NEV CREDIT MANAGEMENT

NEV credits can be traded among auto companies, but cannot be banked or carried forward. Purchased NEV credits can be used only in the current year and cannot be sold again.

COMPLIANCE PATHWAY

For any regulated auto companies, both the CAFC deficit and the NEV score deficit from the previous year (reported in the current year) must be zeroed out by the end of the current year. Table 8 summarizes the compliance pathway of various scenarios.

⁸ If two enterprises meet any one of three conditions, they can be regarded as affiliated enterprises. (1) Both are domestic enterprises and hold no less than 25% of shares in each other directly or indirectly. (2) Both are domestic enterprises and a third domestic enterprise owns both of them or holds no less than 25% of shares in both of them. (3) One is a domestic enterprise while the other is a sales agent of an importer of passenger cars. The foreign enterprise producing these imported passenger cars must hold no less than 25% of shares in the domestic enterprise.

Table 8. CAFC and NEV compliance pathways

	CAFC credit	CAFC deficit
NEV CREDIT	In compliance.	A. Use banked CAFC credits from own company. B. Transfer CAFC credits from shareholder (affiliated companies). C. Use NEV credits from own company. D. Purchase NEV credits from other companies.*
NEV DEFICIT	Purchase NEV credits from other companies.	A. Use banked CAFC credits from own company. B. Transfer CAFC credits from shareholder (affiliated companies). C. Use NEV credits from own company. D. Purchase NEV credits from other companies.

* Note: In 2016 and 2017, 1 NEV credit = 1 CAFC credit. For 2018 and subsequent years, the offset ratio will be separately determined.

REPORTING AND DISCLOSURE

MIIT requires two reports from auto companies for overseeing CAFC and NEV performance. Auto companies need to submit a pre-report on CAFC and NEV credits for the coming year to MIIT no later than December 20 of each year. The pre-report should include the projected target CAFC value, CAFC value, CAFC credits, and NEV credits, among other specified information..

Companies then need to submit an annual report on CAFC and NEV credits of the previous year no later than February 1 of each year. The annual report should include the target CAFC value, the actual CAFC value, CAFC credits, NEV credits, and the plan for using various credits, among other specified information.

MIIT will publicly disclose CAFC and NEV compliance and credit information for all companies no later than March 20 of each year and allow 20 working days for auto companies and the public to review and provide comments.

By July each year, MIIT, together with relevant regulatory agencies, will verify the data and reports submitted by auto companies and release the “CAFC and NEV Credits Accounting Report for Passenger Vehicles” (Accounting Report hereafter) for the preceding year.

Any company with CAFC or NEV deficits must submit a compliance plan to MIIT within 20 working days after MIIT’s publication of the Accounting Report, detailing the number of credits that the company plans to transfer or purchase to get into compliance. Formal agreement on credit transfers or purchases needs to be attached to the compliance plan.

MIIT will then process the CAFC and NEV credit adjustments based on the compliance plans and agreements via an online credit information platform. Note that MIIT does not play a role as the credit trading broker and does not oversee the actual transactions.

ENFORCEMENT AND SUPERVISION

Failure to meet CAFC targets (after adopting all possible compliance pathways), in other words noncompliance, will lead to:

- i. MIIT's denial of "type approval" for new models that cannot meet their specific fuel consumption standards, and
- ii. Suspension of production of certain existing high-fuel-consumption models until the recalculated CAFC based on the adjusted production plan is in compliance.

Failure to meet NEV targets will also lead to suspension of production of certain existing high-fuel-consumption models until the company's recalculated CAFC credits based on the adjusted production plan can offset its NEV-score deficit.

MIIT will adopt a number of measures to supervise the CAFC and NEV credit system. These include requiring auto companies to submit commitment letters, blacklisting deceitful companies and informing other regulatory agencies and the public, and establishing a public complaint system. MIIT urges other regulatory agencies to consider depriving blacklisted companies of favorable policies or imposing restrictions such as blocking market entrance or withdrawing fiscal incentives, pursuant to their respective regulatory authority.

MIIT will also work with other agencies and establish an inspection and supervision system including random checks of auto makers' CAFC and NEVs, publicly disclosing the results.

Auto companies failing to properly disclose the relevant CAFC and NEV data will face warnings from MIIT, recalculation of their CAFC or NEV credits based on MIIT's investigative findings, or treatment as "deceitful companies." These sanctions may be imposed related to the following six circumstances:

1. The auto companies do not report their vehicles' fuel consumption data and NEV data.
2. The vehicles' reported fuel consumption data and NEV data are inconsistent with the MIIT's inspection results.
3. The production or import data of vehicles are not consistent with the true totals.
4. A company does not submit CAFC and NEV credits reports on time.
5. Submitted CAFC and NEV credit reports are not consistent with the facts.
6. A company does not meet its commitments.

The proposal is released for public comments until October 20, 2016.