

Modification of Household Refrigerator Energy Efficiency Standard in China

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Dec. 2nd, 2015



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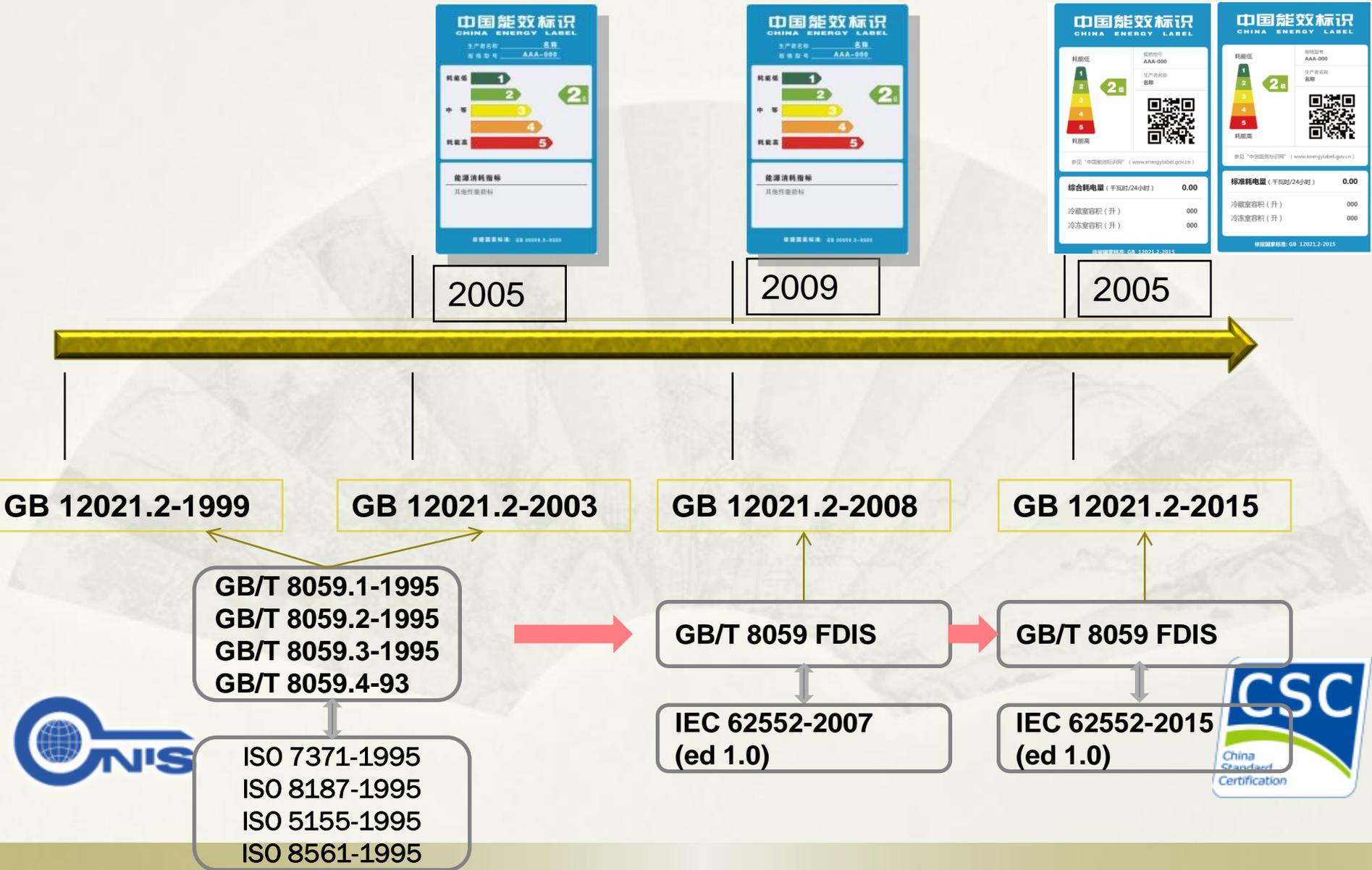
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1. History of Energy Efficiency Standard for Household Refrigerator



2. Background of Modification

- ① Demands of government
- ② Requirements of the policy
- ③ Demands of market
- ④ Demands of consumer
- ⑤ Needs of refrigerator manufacturers

- ⑥ Requirements of environmental protection + greenhouse gas emissions reduction
- ⑦ Modification of IEC 62552:2015 and consistent with the new international standard, and so on



2. Background of Modification

Targets of energy conservation and emissions reduction Requirements of the policy

General Office on the State Council's suggestions on strengthening standardization of energy conservation ([2015] No. 16 issued)

- Key areas

- The standards :key energy conservation technologies, products and service
- The areas: energy, construction, transportation, circulation field, public institutions, agriculture, etc.

- Main principles

- Standards are the impetus for industrial transformation and upgrading

- Main goals

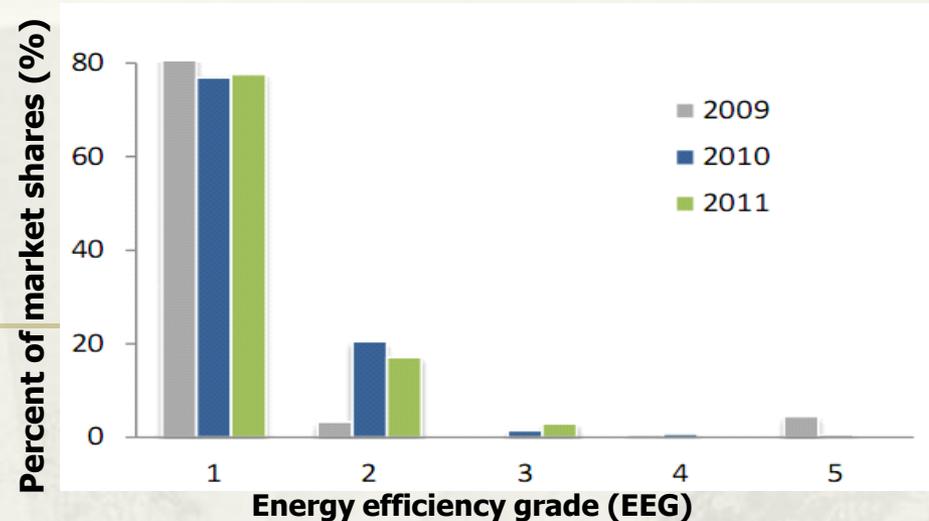
- MEPS for all high energy consumption industries and international advanced level energy efficiency index for more than 80% productions
- elimination for more 20% outdated industries and high energy and water consumption industries, etc.



2. Background of Modification

Demands of market

- ① EEG is 1 for more than 80% products
- ② The products with high energy efficiency technology can't be recognized in the market accord to the EEG



Distribution of EEG for refrigerator models in China 2009-2011

2. Background of Modification

Demands of consumer

- ① Distinguish: it is hard to distinguish between high energy efficiency products and low energy efficiency products according to current standard
- ② Doubt: it is large difference between the energy consumption according standard and the energy consumption in the real life
- ③ Hardly understand: It is hard to understand what is the relationship between high price and high EEG for products



2. Background of Modification

Needs of refrigerator manufacturers

- ① Normative market management
- ② Reflection of energy saving technology and new function for improving energy efficiency
- ③ Elimination of international trade barriers and technology barriers



2. Background of Modification

Needs of government

- ① Select the high energy efficiency product
- ② Support incentive policy
 - Top runner (first list: refrigerator, variable speed air-conditioner, plat-screen TV)
 - Energy efficiency star
 - Energy conservation certification, government procurement
- ③ Harmonize the international standard



3. Introduction of New Energy Efficiency Standard

General information

① Scope

- upright refrigerator- freezer
- upright freezer
- refrigerator
- built-in appliance
- chest refrigerator- freezer
- chest freezer
- wine

② Implement schedule

- publish on Sep. 29th, 2015
- entry into force on Oct. 1st, 2016



3. Introduction of New Energy Efficiency Standard

Target of modification

No.	Item	Realize or not
1	Distinguish different EEG	√
2	Eliminate 20%-30% high energy consumption products and improve energy efficiency level of products	√
3	Agree the declared energy consumption with the real energy consumption	partly
4	Consistent with international standards	√
5	Keep the characters of continuity and comparability	√
6	Consider the features of products in China	√
7	Improve the evaluation system of energy efficiency	√

3. Introduction of New Energy Efficiency Standard

Deviation from IEC 62552:2015

Items	IEC 62552: 2015	GB 12021.2-2015
The ambient factor for annual energy consumption	In the sample: 16°C : 170 days 32°C : 195 days	16°C : 192 days 32°C : 173 days
Thermostat setting of variable temperature compartment	The position of maximum energy consumption	The middle position according to the range of variable temperature
Auxiliary energy consumption	Auxiliary energy consumption in the annual energy consumption is for tank type automatic icemaker + ambient controlled anti-condensation heaters	Without tank type automatic icemaker in auxiliary energy consumption
Load processing efficiency test	Do it according to manufacturer's declaration	Included in the total energy consumption for upright refrigerator-freezer



3. Introduction of New Energy Efficiency Standard

Features of energy efficiency evaluation system

- ① Consider the characters of product in China
- ② Consider the new products, new functions and new technology
 - additional appliance type: wine, built-in appliance
 - additional modification factors: multi-door appliance, glass door appliance
 - higher value of modification factors: frost-free appliance, appliance with variable temperature compartment
- ③ Without closing and opening doors test

4. Impact of New Energy Efficiency Standard on Manufacturers in China

- ① More than 80% products need to improve their refrigeration system and be certificated again
- ② Laboratory need to be reformed
- ③ Do the energy efficiency labelling registration for all products
- ④ Apply the new technology for energy efficiency improvement:
 - variable speed compressor or high efficiency compressor
 - high efficiency refrigeration system matching
 - high efficiency fan motor
 - system control



Thank you!

