

Efforts for Improving Cooling Efficiency in China and suggestion for international collaboration on global cooling efficiency

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1. Transforming Markets in China

68 energy efficiency standards

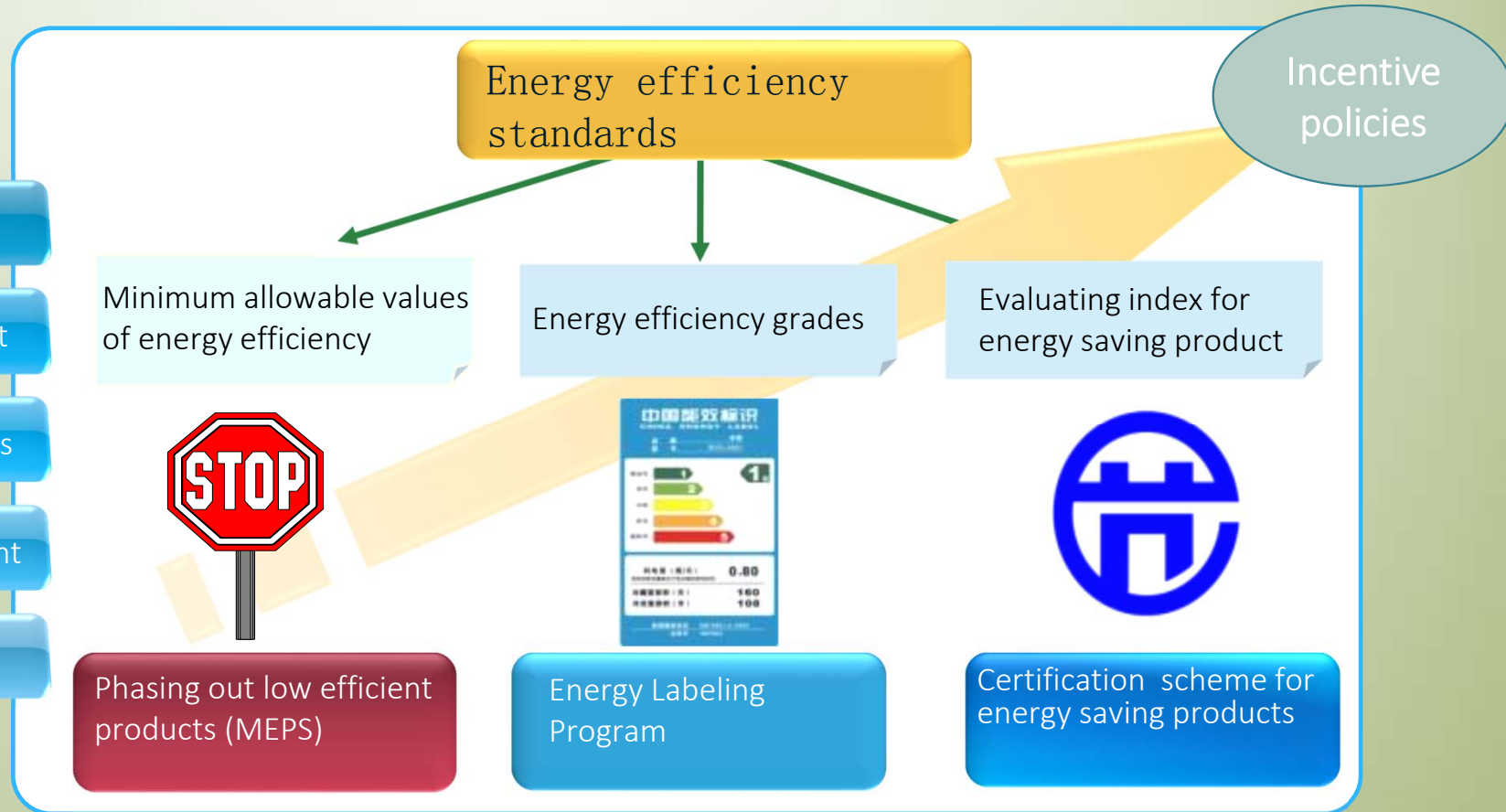
18 for household appliances

14 for Lighting equipment

12 for commercial devices

18 for industrial equipment

6 for office equipment



2. MEPS for cooling appliances in China

1) More products are covered

a. Household refrigerating appliances

- refrigerator-freezer
- freezer
- refrigerator
- wine storage appliance

d. Cold chain

- refrigerated display cabinets
- vending machine
- walk-in freezer

b. Heating and heat water

- Heat pump water heater
- Solar hot water system assisted by air source heat pump
- Low ambient temperature air source heat pump unit

c. Air-conditioners

- Room air-conditioners
- Unitary air-cons
- Water chillers
- Multi-connected air-conditioners
- Water-source heat pumps
- Lithium bromide absorption chillers

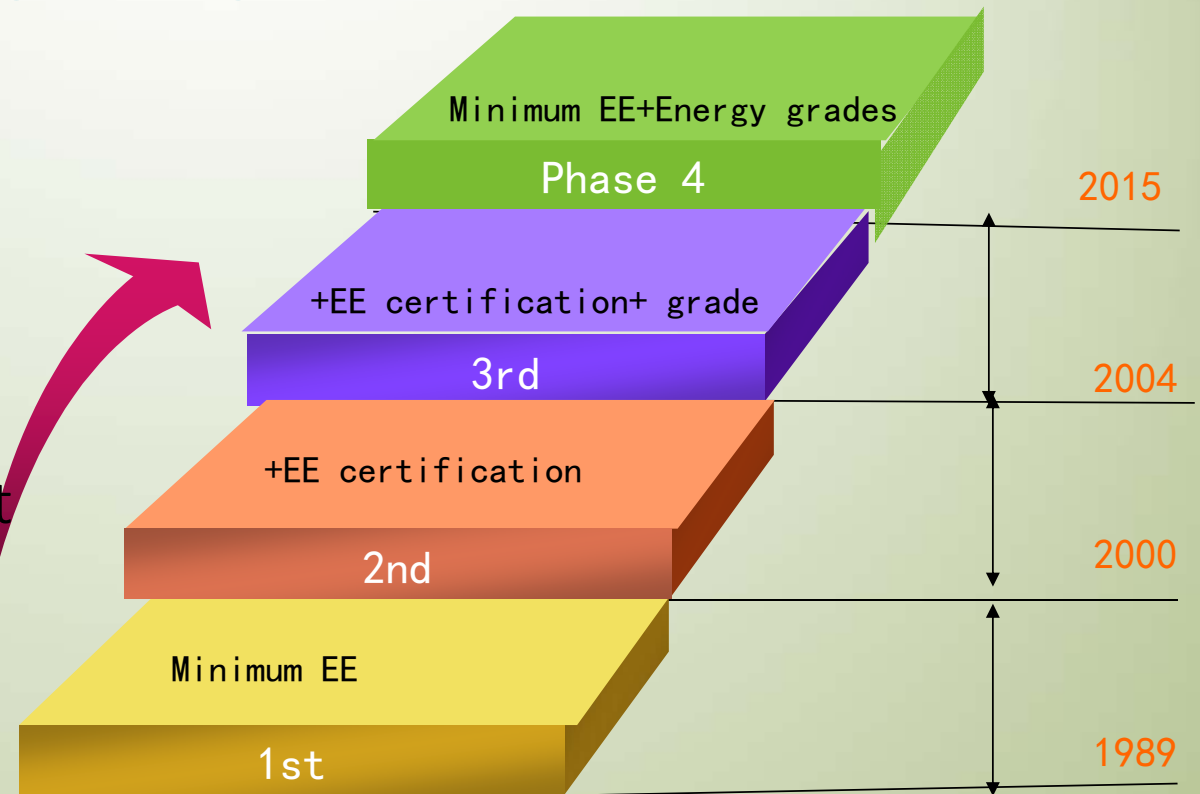
e. Parts

- Compressor for room air conditioners



2) ways to enhance role of MEPS

- Mandatory
- Revised per 4-5 years
- Market inspection strictly
- Chang along with the market and policies
- Matching with Energy labeling, Certification label, Energy saving procurement, incentive polies



3) Energy efficiency & phasing down HFCs

- climatic change: to promote market penetration of high efficient and low GWP products
- Demonstration: MEPS for RAC , MEPS for Multi-connected air-conditioners(VRF)
- ✓ improving energy efficiency
- ✓ phasing down HFCs

refrigerant alternative

Reducing the amount of recharge

3. China EE Label

- 1) Mandatory since 2004
- 2) Covering till 2017
 - 37 types of energy-used products in 5 categories
 - over 14,000 manufacturers
 - over 1.36m models of products
- 3) Revised, add QR code since 2014 to provide more information
 - cover: "choose, use, repair, replace and supervision"

中国能效标识
CHINA ENERGY LABEL

生产者名称 _____ 名称 _____
规格型号 _____ AAA-000

耗能低 1 2 3 4 5 耗能高

2级

制冷季节能源消耗效率 (W·h/W·h) 0.00

额定制冷量 (W)	00000
制冷季节耗电量 (kW·h)	00000

(按照全年制冷运行1136小时计算)

依据国家标准: GB 21455-2008

V1.0 2004~2014

中国能效标识
CHINA ENERGY LABEL

耗能低

1 2 3 耗能高

1级

生产者名称: 广东美的制冷设备有限公司
规格型号: KFR-26GW/BP3DN1Y-YA100(B1)

全年能源消耗效率[(W·h)/(W·h)] 4.75

额定制冷量(W)	2600
额定制热量(W)	4300
制冷季节耗电量(kW·h)	312
制热季节耗电量(kW·h)	211

依据国家标准: GB 21455-2013

- V2.0 2014~now
- Add QR code

4) Success and lessons in enforcing Energy labels in China

- **Consumer cognition level reached 98.1%**
 - Prefer the more efficiency products
 - Think EE label is necessary for products
 - More info for consumers
- **Market inspection strictly**
 - quality supervision and inspection
- **Incentive policies for Consumers**

5) the challenges for export from China

Difference of MEPS in countries

to promote harmonization and mutual recognition of MEPS & labels

Countries in the Belt and Road

Develop the same/comparable testing protocols

Establish technical working group (TWG)



4. International cooperation

- Test methods
 - Encourage to adopt ISO/IEC testing methods
 - promote harmonization or comparable in testing methods
 - Promote mutual recognition of laboratory test result by conduct round robin test among energy efficiency labs and enhance the lab capacity
- MEPS
 - methodology for MEPS development
 - Conduct benchmark analysis among the EES in different members
 - promote harmonization or comparable in MEPS



4. International cooperation

- Label
 - Strengthen information communication.
 - More info
 - electronic label such as QR code
 - Service to facilitate global trade of efficient products
 - Promote the application of electronic label such as QR code in energy efficiency label to facilitate global trade of efficient products.

Thank you for your attention!

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