Lessons Learned from International Energy Labeling Programs for Strengthening the China Energy Label Program
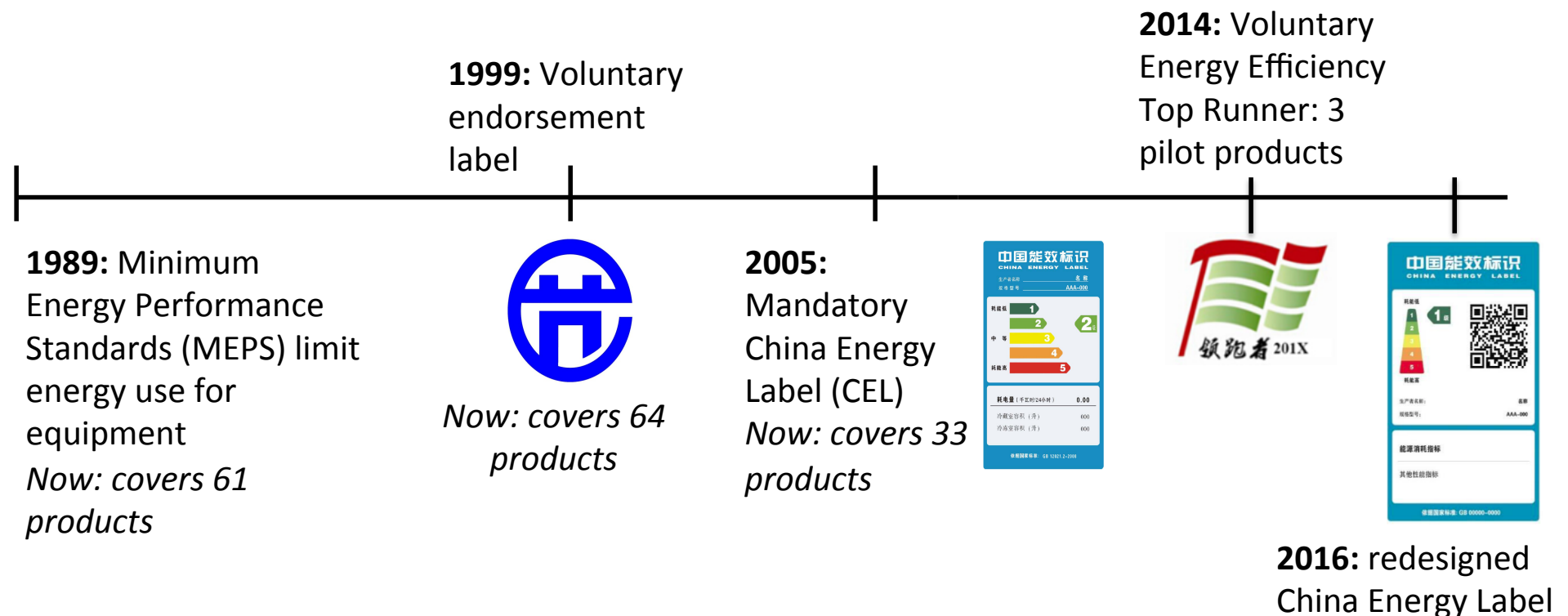
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Overview of China's Standards and Labeling (S&L) Programs

- China's mandatory standards and labeling programs have grown rapidly, served basis for subsidy programs between 2009-2012, certification programs, and other programs.
- Yet, random product check-testing of 9 popular products found discrepancies between the nameplate energy performance rating and the actual testing results.
- Policy and technical barriers to implementation of China Energy Label exist, including in legal basis and institutions, compliance and verification, and program resources

2014: Voluntary Energy Efficiency Top Runner: 3 pilot products

1999: Voluntary endorsement label

1989: Minimum Energy Performance Standards (MEPS) limit energy use for equipment
Now: covers 61 products

Now: covers 64 products

2005: Mandatory China Energy Label (CEL)
Now: covers 33 products

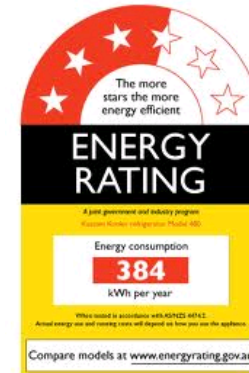**2016:** redesigned China Energy Label

We reviewed key international labeling programs to identify gaps in the CEL and recommendations for improvement

◆ International Programs reviewed:

- ❑ United States ENERGY STAR and EnergyGuide
- ❑ Australia Energy Label
- ❑ European Union Energy Label
- ❑ Japan: Top Runner and Energy Label

◆ Programmatic elements reviewed:

- ❑ Legal Basis and Institutions
- ❑ Technical Specification and Development
- ❑ Implementation, Verification and Compliance
- ❑ Enforcement and Penalties
- ❑ Financial and Human Resources
- ❑ Technical Capacity
- ❑ Information Sharing
- ❑ Program Evaluation
- ❑ Stakeholder Participation and Involvement

Step 1: Provided Legal Basis

◆ **Strong legal basis for label program creation:**

- ❑ Mandatory energy labeling programs in U.S., EU and Japan were all created out of national energy conservation laws (eg. air quality law, the Clean Air Act in the U.S.)

◆ **Defined regulators by laws help strengthen implementation**

- ❑ U.S. and Australian laws clearly define regulatory responsible for implementation and enforcement
- ❑ EU calls on member states to implement and enforce labels, resulting in different implementation and enforcement schemes and regulators

Step 1: China Gap Analysis and Policy Recommendations

◆ Strong legal basis exists, but relevant laws are of low statue, outdated and do not reflect rapid changes in CEL (e.g., recent changes to label design)

> Policy Recommendation: **Revise and update current laws** or adopt a new comprehensive law focusing only on CEL, with more flexibility for labeling styles and linked to air quality/environmental policies

◆ Specific local institutions for market surveillance not specified in current laws, leading to loopholes and limited supervision

◆ Differences in specified penalties between relevant laws, and no clear legal definition of misleading or false labeling

> Policy Recommendation: provide clear framework for:
> - **Clarify specific roles and responsibilities** for different institutions, encourage collaboration and mandate information sharing
> - **Improve definitions of violations**, increase maximum fines and include stricter follow-up requirements

Step 2: To Set It at Right Level - Label Technical Specification

◆ **Sound, scientific process for setting label requirements:** Market, techno-economic analysis and public comment and review are the basis for setting requirements for all four labeling programs

◆ **Basis for regularly revising label requirements:** ENERGY STAR, Australia and EU all have guiding principles or specific timelines for reviewing and updating label requirements

◆ **Flexibility in updating label requirements:** Only ENERGY STAR revisions not dependent on setting of mandatory requirements:

- ❑ Greater flexibility for revisions to occur quickly
- ❑ Shorter and quicker process for setting requirements
- ❑ Most Efficient designation help complement label

Policy Recommendations

◆ **Provide more budget, funding and training** to expand fundamental data collection and strengthen current technical analyses for MEPS and label development through international exchange and collaboration

◆ Consider **separating MEPS and labeling requirements** for greater flexibility in updates

◆ **Include average cost savings on label** to make it more influential for consumers

Step 2: To Set It at Right Level – Stakeholder Participation and Involvement

◆ Participating stakeholders include: industry/manufacturers, academic experts and consultants, government officials, testing institutions and sector associations but more participation from retailers, consumer associations and environmental NGOs lacking

◆ Participation usually through formal membership on committees and forums and informal stakeholder meetings or comment periods

Policy Recommendations:
• Expand participation to more stakeholders to ensure broad awareness of CEL and continuous support and feedback
• Expand technical committee membership, and hold more regular workshops and comment periods

Step 3: To Implement and Enforce it well- Labeling Implementation, Verification and Compliance Schemes

◆ Certification and manufacturer self-declared energy reporting serve as basis for implementing all four programs + China; but different rigor observed

◆ **Rigorous certification requirements strengthen labeling implementation:**

   ❑ USA and Australia require manufacturers to **certify** product meets labeling requirements

   ❑ US ENERGY STAR program has most rigorous requirements for test labs and certified test results, ongoing verification testing

◆ All four programs feature national-level label display compliance surveys (via retail inspections) and verification check-testing of energy performance

◆ **Consistent check-testing over time:** Australia and some EU countries undertaken consistent check-testing over time, some like U.S. ENERGY STAR started recently

Step 3: China Gap Analysis

◆ Implementation based on manufacturer self-declaration and label registration

◆ Limited budgets and competing priorities (e.g., safety) result in **inconsistent national product inspections and testing, and large variations in compliance across regions**

◆ Unlike U.S. ENERGY STAR, **no ongoing verification testing of labeled products**

◆ Laboratory registration and capacity verification help with enforcement, but also **large volume of laboratories with varying capabilities is challenging.** (over 500 registered manufacture testing labs and nearly 300 third-party labs)

◆ China has already adopted some international success factors, but additional improvements could include:

- ❑ **Consider a mandatory third-party certification** of CEL test reports by accreditation bodies to ensure valid and consistent lab results and improve compliance before products go to retailers

- ❑ **Additional third-party verification** testing after products enter the market

- ❑ **Consistent national check-testing**, possibly with **targeted sampling** approach of high-risk products/manufacturers/regions to maximize limited resources

- ❑ **More training and capacity building at local levels** along with information sharing, regional collaborations, recent pilots as trainers for other regions

◆ Provide guidance on improved institutional framework **that clearly differentiates responsibilities and roles** (e.g., leading vs. supporting) for each institution locally

◆ Expand use of punitive measures, particularly **high fines for severe or repeated non-compliance,** and use of "**name and shame**" mechanisms

Step 4: What if it fails-Enforcement and Penalties

◆ Penalties for non-compliance **through financial or legal sanctions**

◆ Penalty for voluntary ENERGY STAR non-compliance is **disqualification from the program** with potential for **legal action against trademark violation** if manufacturers refuse to cease use of the label.

◆ Public "naming and shaming" also used as alternative

Gap Analysis and Policy Recommendations:
- Revised 2016 China Energy Label law included new language to strengthen responsibilities of compliance oversight and sanctions
- **Legal and financial sanctions** for non-compliance could be further strengthened in terms of **severity** in existing regulations, as well as in practice.

Step 5: To have sufficient human and financial resources

◆ **Specified national budget important to robust labeling program**

  ❑ Most standards and labeling program budgets in the range of US$2 million (Japan) to US$20 million (ENERGY STAR)

◆ **Designated budget for monitoring and enforcement**

  ❑ Australia and some EU states have designated budgets for monitoring and enforcement, ranging from US$1 million in Australia to <50,000 Euros in some EU states

◆ **Local support for enforcement:** Australia appears to have most robust compliance budget, with diversified funding also provided by states and territories

Step 5: China Gap Analysis and Policy Recommendations on Resources

◆ Major challenge in China is the lack of a national designated budget for CEL program

◆ **Unstable and insufficient resource** base has resulted in limited public awareness, absence of consistent market surveillance activities and uneven local enforcement

Policy Recommendation: **Stable and significantly higher budgets** for label development and management, and implementation .

◆ China also lacks designated budget for monitoring and enforcement at both national and local levels

◆ Insufficient local funding has resulted in some instances of collecting fines instead of confiscating and stopping sales of non-compliant products

◆ **Limited resources** for conducting spot on-site inspections and round-robin testing for all labs results in **inconsistent lab performances**, need **further capacity building** especially for manufacturer labs

Policy Recommendation: **Establish designated budget for enforcement and market surveillance** at national and local levels (~17 million RMB/ year)

Step 6: To Communicate and Share Information

◆ **Different methods of information sharing between regulators can enhance enforcement**

 ❑ Centralized certification database or third-party certification system (U.S.A.)

 ❑ Collaboration and information sharing requirements between regions (EU)

◆ **Sharing of label compliance results with public also important**

 ❑ Public access to information incentivizes manufacturers to comply with labeling requirements

Policy Recommendations:
- Centralized location for public information about products energy performance and check-testing results for greater consumer awareness
- Develop public records of market surveillance results, ideally in centralized platform;
- Greater policy emphasis on promoting formal and information collaboration and information sharing between surveillance institutions

Step 7: Post Program Evaluation

◆ **Consistent evaluations to monitor and improve label program**

- ❑ ENERGY STAR has the most consistent evaluations over time with annual awareness surveys and bottom-up modeling estimates of savings

- ❑ Japan has also consistently tracked sales-weighted efficiency of Top Runner products to evaluate if targets are met and actual efficiency improvement achieved

- ❑ Australia and EU have conducted comprehensive program evaluations related to labeling, but were one-time efforts

◆ **Comparison of projected impacts before implementation and actual impacts after implementation important**

- ❑ All four regions evaluate and compare the predicted and realized impacts of labeling programs

- ❑ Comparison help inform label effectiveness, identify need for change

Step 7: China Gap Analysis and Policy Recommendations

◆ No systematic evaluation due to lack of funding

◆ Limited sources to obtain necessary data inputs, and no large-scale surveys for daily usage data

◆ Compliance data from pilot surveys and recent subsidy program often not publicly disclosed

Policy Recommendations:
• Begin conducting retrospective program evaluations by learning advanced modeling and **evaluation methodologies**
• **Use program evaluation results** to seek and justify further resources and policy support
• Designated budget for data collection through consumer surveys, consider using qualified third-party evaluators for regular evaluations in long-term

Thank You!

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