topten international services

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WWF

# Topten China
# Report REPIC Grant 2009 - 2010

REPIC Vertrag No. 2009.02

Zürich, 18 January 2011

Conrad U. Brunner, Eric Bush, Bella Roscher, Hu Bo, Huang Luting


*Screen shot entry page (English, October 2010)*

Contact Information:


| | |
|---|---|
| Topten China<br>Topten International Services<br>Gessnerallee 38a, CH 8001 Zurich<br>Switzerland<br>Tel +41 44 226 30 70 | Topten China Office<br>WWF China, Room 1609 Wenhua Gong<br>Beijing Working People's Culture Palace<br>Beijing 100006<br>PR China |

## Table of contents



## List of Figures

**List of Abbreviations:**

| | |
|---|---|
| ADB | Asian Development Bank |
| AQSIQ | Administration of Quality, Supervision, Inspection and Quarantine |
| BAT | Best Available Technology |
| CECA | China Energy Conservation Association |
| CHEARI | China Household Electric Appliance Research Institute |
| CLASP | Collaborative labeling and appliance standards program |
| CNIS | China National Institute of Standardization |
| CTP | Conformity Testing Program |
| EC | European Commission |
| ERI | Energy Research Institute |
| FDFA | Federal Department of Foreign Affairs |
| GfK | Gesellschaft für Konsumforschung |
| ICA | International Copper Association |
| MEP | Ministry of Environmental Protection |
| MEPS | Minimum Energy Performance Standard |
| NGO | Non-Governmental Organization |
| NRDC | National Resources Defense Council |
| SAC | Standardization Administration of China |
| SECO | Swiss State Secretariat for Economic Affairs |
| SFOE | Swiss Federal Office of Energy |
| TIG | Topten International Group, association, Paris France |
| TIS | Topten International Services GmbH |
| VECC | Vehicle Emission Control Center |
| WWF | World Wide Fund for Nature |

**Separate documents:**

- Media report about Topten China Launch, Beijing November 2010
- Topten China Communication Concept, Beijing, October 2010

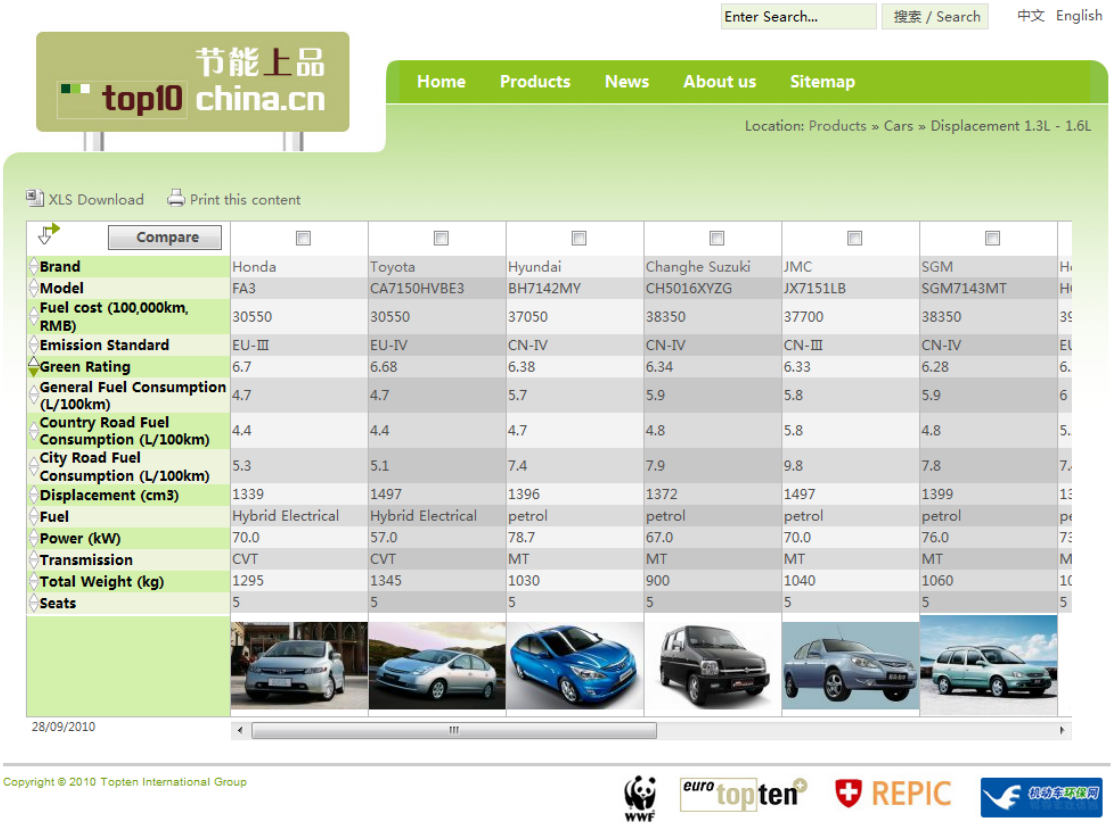



*Figure 1 Screen shot cars 1.3 - 1.6 l (English, October 2010)*

中国环境报： China Environment News


*Figure 2 Media report on launch event (Hu Bo, Topten China Director a.i.), October 2010*

# 1. Executive Summary

This draft report covers the first Preparatory Phase in 2009 and 2010 of the introduction of the Topten China database for the most energy efficient consumer goods in China.

The two major achievements of this phase are:

- The public launch of the Topten China website on 26 October 2010 with the establishment of a media network.
- The build-up of a solid Topten China office in Beijing with competent staff and a strong partnership network with Chinese government agencies to develop synergies with existing energy efficiency efforts in China and to secure the future operation.

A competent team of three Chinese staff was trained in Switzerland and set-up in Beijing, hosted by WWF China. Prior to the launch, the respective market research for Best Available Technology (BAT) products and selected conformity tests were made to secure a sound selection of products available in the Chinese market place. From the data research, selections of 259 products in 32 sub-categories are displayed on www.top10china.cn. The research allowed also displaying new product categories with advanced technologies that are just entering the market, like air conditioners with inverter technology for variable speed operation (see Figure 3). The marketing & communication concept is established and an organizational analysis for the future set up of Topten China in Beijing was made.

In parallel, an expanding cooperation and partnership network with Chinese government and non-government agencies was built. Especially the cooperation and partnership with the Vehicle Emission Control Center in the Ministry of Environmental Protection (VECC-MEP) on motor vehicles has developed into a fruitful exchange and support of Topten China. Also the research cooperation with the China National Institute of Standardization CNIS on household appliances has been established and will be expanded in the Conformity Testing Program CTP.

International cooperation between the Swiss, 16 European, USA, Hong Kong, and China Topten teams were established in order to facilitate the international exchange of product data and experiences. The public launch of Topten Hong Kong, China and USA were internationally coordinated and communicated jointly with the support of the WWF international communications network.

Topten China was supported in this first stage by REPIC and WWF Switzerland, with additional in kind support from Chinese partners (notably VECC, ICA and CNIS plus Chinese media) and Swiss partners (TIS and S.A.F.E.). The Topten China project was given the official accreditation by the Topten International Group on 21 October 2010 to be allowed to publish its data base in China according to the quality standards of the Topten Charter.

The next Development Phase from 2011 to 2013, with an expansion of the product scope, extensive marketing & communication and collaboration with manufacturers, retailers and government agencies has been prepared together with, and now secured funding from, Seco. With the Asian Development Bank (ADB) in Manila, a specific Conformity Testing Program, to secure data accuracy was developed that will start in 2011 with part 1 for motor vehicles and part 2 for appliances.

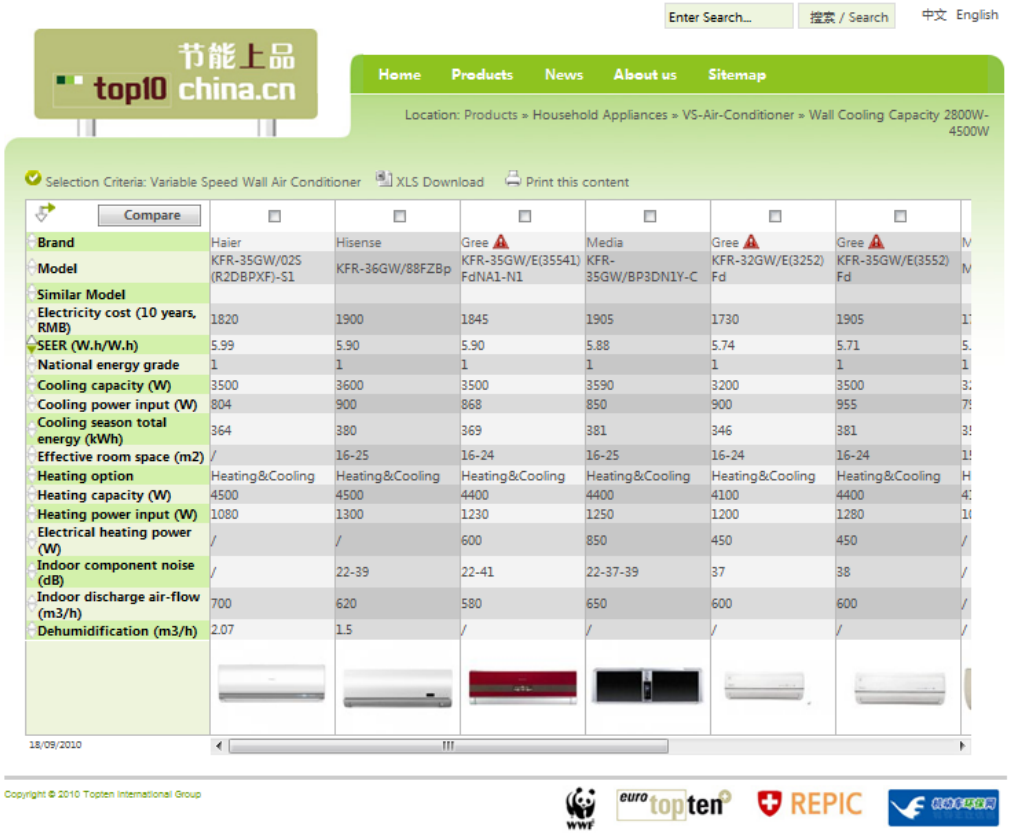



Figure 3 Screen shot Air Conditioners, wall mounted, 2800 W - 4500 W cooling capacity, variable speed drive technology (English, October 2010)


*Figure 4 Launch conference 26 October 2010*

# 2. Background

Topten China is an internet based information platform for consumer goods with Best Available Technology (BAT) and high energy efficiency in four major fields:

- Household appliances
- Electronic equipment for office and consumer electronics
- Building components including lighting, air conditioning (AC) and solar components
- Private motor vehicles

Topten gives independent and up-to-date advice for BAT products that have an energy demand between only one third (compared with existing old products) and two thirds (compared with new standard products in the China market 2010). Topten China is based on ten years of experience starting in Switzerland, now developed in 16 European countries and since November 2010 also available online in the USA and China P.R.

The change in purchased consumer goods towards more energy efficient products is a complex market transformation. It involves Chinese mandatory energy performance standards and energy labels, government financial incentives plus Topten China as a comprehensive information platform as well as other information activities. In order to secure the selection of BAT products with accurate energy performance data market research and testing of self-declared data are necessary.

The first stage of the development of Topten China was supported by a grant from REPIC for the period of 1 January 2009 to 31 December 2010. Topten China was also supported from 2008 to 2010 by WWF Switzerland, Topten International Services (TIS), the Swiss Agency for Efficient Energy Use (S.A.F.E.) and various Chinese partners (VECC, ICA, CNIS and SEQUEL media group) with in kind contributions.

# 3. Goals and activities

## 3.1 Goals

The overall goal of Topten China is to make consumer information more easily accessible by showing the best currently available products (energy performance data, product specifications and image, manufacturer's address) and by stimulating both manufacturers and retailers to place better products into the shelves of the stores.

The key tasks of Topten China in this project stage have been:

- To make the Topten China internet platform ready to display a considerable number of consumer products in key categories with the selection of best available technology in the Chinese market.
- To prepare for the expansion of the product scope and the marketing & communication with manufacturers, retailers, and government agencies in the second stage
- To find the necessary partners, co operations and funds to prepare for a sustainable operation in the future.
- To establish the Topten China Advisory Group and the organizational set up to implement these activities in the following project phase.

## 3.2 Market research and product selection

The first step was to identify the most important products to display on Topten China. From the scope of relevant products (see Figure 5), priorities were set (see Figure 6) according to market and energy relevance and existing Chinese standards, energy labels, and procurement lists.

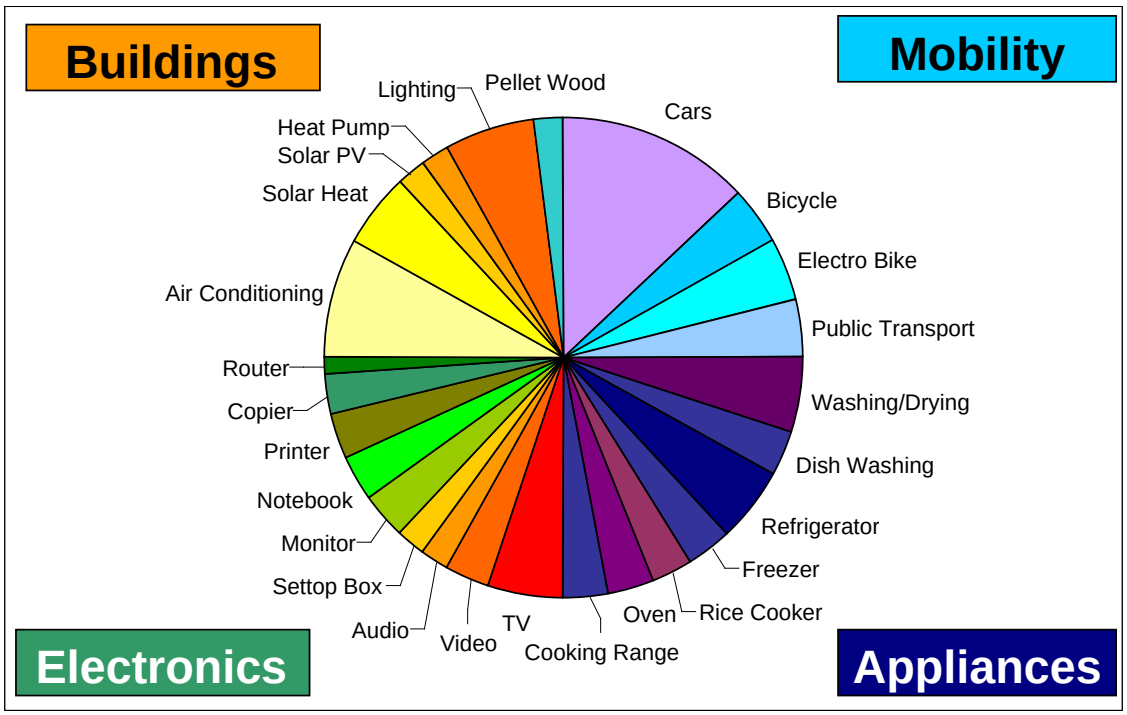



*Figure 5 Scope of possible Topten products and relative importance*

| Product | China market relevance | Energy efficiency relevance | Government procurement MOF/NDRC | CQC tested energy | EE GB Standard | CNIS label (until 2009) | VECC emission data | VECC/NDRC fuel consumption data | Total | Priority Products |
|---|---|---|---|---|---|---|---|---|---|---|
| Clothes washer | 1 | 1 | | 1 | 1 | 1 | | | 5 | 1 |
| Refrigerator | 1 | 1 | 1 | 1 | 1 | 1 | | | 6 | 1 |
| Freezer | 1 | 1 | 1 | 1 | 1 | 1 | | | 6 | 1 |
| Refrigerator/freezer | 1 | 1 | 1 | 1 | 1 | 1 | | | 6 | 1 |
| TV | 1 | 1 | 1 | 1 | 1 | | | | 5 | 1 |
| Copier | 1 | 1 | 1 | 1 | 1 | 1 | | | 6 | 1 |
| Monitor | 1 | 1 | 1 | 1 | 1 | 1 | | | 6 | 1 |
| Passenger car | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 7 | 1 |
| Van | 1 | 1 | 1 | | 1 | | 1 | 1 | 6 | 1 |
| Room air conditioner | 1 | 1 | 1 | 1 | 1 | 1 | | | 6 | 1 |
| Light lamps /CFL | 1 | 1 | 1 | | 1 | 1 | | | 5 | 1 |
| Water pumps | 1 | 1 | 1 | 1 | 1 | | | | 5 | 1 |

*Figure 6 Topten China: priorities of product categories*

On 26 October 2010, the Topten China www.top10china.cn was publicly launched in Chinese (simplified Mandarin) and English with the following seven product categories. The expansion in 2011 will include several additional product categories. Two products (lamps and TV) are currently undergoing changes in the official energy label status so that the technical data for the selection criteria have to be reviewed.

The data-base contains, as of October 2010, a total of 32 sub-categories with 259 products (see detailed list of products in Annex 1 and screen shots of product pages in Annex 4):

| Sector | Product category |
|---|---|
| Private Motor Vehicles | Car |
| Office equipment | Copier |
| | Monitor |
| Consumer electronics | TV (under preparation) |
| Household appliances | Refrigerator/freezer |
| | Washing machine |
| | Electric water heater |
| Building components | Air Conditioner |
| | Lamp (under preparation) |

The BAT products were selected based on market research from three sources in China:

- GfK[1] database — Refrigerator/freezers, TV, monitors and air conditioners
- VECC database — Motor vehicles, based on official national testing results
- Our own market research — Washing machines, electric water heaters and copiers

For each product category, a selection methodology and procedure was established to identify the most energy efficient products (see example in Annex 6). Each product category displayed will contain two specific guides:

- End-user recommendation to explain purchase and advice for after sales behavior for energy efficient products
- Selection criteria to identify testing criteria, standards and labels used for manufacturers (Annex 5).

## 3.3 Conformity test program

The energy performance data of the products are normally tested according to Chinese standards and the results supplied by the manufacturers through self-declaration in official product performance lists like the China Energylabel. In order to secure the accuracy of the energy performance data of the selected products, a first round of conformity tests with the following products was made by China Household Electric Appliances Research Institute CHEARI:

- Refrigerator/freezers
- Air conditions
- TV

| CHEARI CTP | Total products | Passed products | Failed products | failed（%） |
|---|---|---|---|---|
| Air conditioner | 9 | 8 | 1 | 89 |
| Refrigerator | 10 | 9 | 1 | 90 |
| Monitor | 10 | 10 | 0 | 100 |
| Total | 29 | 27 | 2 | 93 |

The conformity test of 29 products showed that two did not comply and various smaller deviations of self-declared values were revealed. Most of the products (93%) meet the requirements set by Chinese standards and regulations. The measured energy performance of the air conditioners and refrigerators usually are lower than the declared performance from the manufacturers. The measured energy performance of monitors is higher than the declared performance from the manufacturers.

Details of the results of the conformity test are shown in Annex 7. Based on these preliminary findings a full conformity testing program was designed for 2011 - 2013 (see chapter 6. Next Steps).

## 3.4 Web design and navigation

The web site and the navigation for the database were designed by the Topten China team based on the existing Topten content management system (CMS) and the data base structure from Topten Switzerland. The use of this system guarantees coordinated updates and facilitates the upload of new product lists in Excel format.

The URL www.top10china.cn was registered by TIS. The server is hosted by Dataway and is located at the Hohlstrasse 216 in Zurich. The entry page and the color scheme were adapted to Chinese tastes. The navigation was adapted to Chinese customs. A claim in Chinese was added:

[1] GfK: Gesellschaft für Konsumforschung, headquarter based in Nürnberg Germany has a global network for market research of consumer goods. They provide paid access to product specifications and energy performance in national markets. In China they have panels in 65 cities with monthly reporting.

节能上品

(Spoken in Pinyin: Jie Neng Shang Pin)
'Jie Neng' means energy saving,
'Shang Pin' means best products

This claim is - when typed into the window of a Chinese search machine - automatically converted into the URL in Chinese computers. The URL and the claim were used for the Topten China logo. All activities on the website are captured by Google analytics, a very helpful tool for monitoring and evaluation purposes.


*Figure 7 Topten China logo and claim*

## 3.5 Team

The work was performed by the Topten China crew in Beijing and local consultants together with the international support team from TIS, WWF Switzerland and Swiss consultants (for a list of collaborators, see Annex 2). The Swiss team had two missions to Beijing in May 2010 and October 2010 with the WWF Switzerland representative supporting the China crew in Beijing for two months prior to the launch. The Chinese team - together with the European, Hong Kong and US teams - attended a first ever Topten Global coordination meeting in June 2010 in Zurich. On this occasion, a number of training workshops (communication, cars, appliances, lighting) were held together with Swiss and international specialists.

For their regular information, a Topten China newsletter was created and issued twice. The first Advisory Group (AG) meeting was held on 26 October 2010 in Beijing. For a list of members of the AG, see Annex 3.

## 3.6 Media work and public launch

The public launch was a coordinated international event with Topten China, and Topten USA to demonstrate the global reach of the energy efficiency platform. It was the successful test of the build-up of a media network with several key media partners:

- Sina (one of the biggest portal websites in China)
- Autohome (one of the most popular car websites)
- PCPOP (one of the most popular IT products websites)
- China television CCTV (a WWF media partner)

Preview information was made available also at the Shanghai World Expo and especially during the visit of Federal Council Member Moritz Leuenberger on 13 September 2010.

The following print and audio materials were prepared and distributed:

- 1 brochure for partners
- 1 comic leaflet for the public
- 1 newsletter
- 1 little leaflet with Topten information for the World EXPO in Shanghai
- 1 audio interview with the Topten PMT Leader on China Radio International

For the Topten China launch two videos were prepared:

- Testimonials for Topten from 17 countries and regions (Switzerland, France, Sweden, Spain, Hungary, Italy, the Netherlands, Portugal, Israel, UK, USA, Canada, Malaysia, Ja-

pan, South Korea, Hong Kong, China P.R.), two video versions: one for Chinese use on display at www.top10china.cn, one for global use on display at www.panda.org.

- A consumer in a Beijing store trying to find the best energy efficient product.

During the launch, a life size costume mascot, “Professor Energy” (see Figure 8), was present attracting attention. Also, a live comparison between two monitors was made, measuring energy use, to show journalists the actual difference in energy consumption between an energy efficient product and a conventional product.


*Figure 8 Topten China director a.i. Hu Bo meets with "Professor Energy", closely watched by CCTV*

The launch event was professionally managed and included presentations by Hou Yanli (WWF China), Eric Bush (president Topten International Group), Tang Dagang (director VECC-MEP), Hu Bo (Topten China) and Yannick Roulin (Swiss Embassy), see also Figure 4. It was attended by 70 people, including about 20 journalists. The presentations gave a good overview of the project and also half a dozen questions from the journalists were answered.

The media echo of the launch in China as very big: The following print and electronic media brought a report on Topten China:

***Print Media***

- Beijing Times, circulation 860'000
- Fazhi News, circulation 300'000
- China Environment News, 200'000
- China Enterprise News, circulation 300'000

***Web sites and news services***

- Sina Green
- Sina news
- www.PCPOP.com (special column)
- www.IT168.com
- www.CHE168.com

- Autohome
- Tianjin news
- www.China5e.com
- www.163.com
- www.qq.com
- www.YNET.com
- Sohu
- WWF websites around the globe
- VECC website

One of the most popular IT web portal: www.pcpop.com, has agreed to publish WWF-Topten Advertisement on their first page (see screen shot in Figure 9 below). www.pcpop.com is a part of SEQUEL media group and one of the three most visited IT websites in China. The listed price for the banner is RMB 80'000 per day and we had it for two full weeks. This is equivalent to a total in kind contribution of RMB 1'120'000. This does not yet include the special column that they designed for Topten (worth RMB 100'000 ~ 200'000).


*Figure 9 Web advertisement on front page of www.pcpop.com*

See separate document: "Topten China Launch Report."

## 3.7 Web response

The web activities are monitored continuously with different tools. The Topten China Content Management System CMS has delivered preliminary results of the web use from the launch on 26 October 2010 to 31 December 2010 (67 days) with 230'000 Hits. From Google Analytics we know that the average time on site in November 2010 was 3:35. The Google data base is still not fully available in China due to political restrictions of Google operation.

## 3.8 Organizational development

In order to make an informed decision on the future organizational structure and location of Topten China, several consultants contributed to the draft assessment:

- Dezan Shira & Associates (Beijing office) made an analysis of the possible organizational options (Wholly Foreign Owned Enterprise WFOE, Joint Venture JV, or Representative Office RO) and their respective economical characteristics.
- Jenny Heap (Knowledge for Sustainable Development).
- Timothy Hui (Beijing, independent consultant)

The two later consultants contributed their findings and reviewed the assessment.

The matter will be followed up to ensure the best possible operational basis for Topten China in the future. Preparations are being made to launch a limited liability company in early 2011 with its own offices in Beijing. The staff will be expanded and a new team leader is being recruited.

# 4. Government relations and partners

Government activities in this field are highly relevant in China. They include:

1. Testing standards
2. Mandatory energy minimum performance standards (MEPS)
3. Efficiency classifications (China Energylabel)
4. Financial incentive programs
5. Government procurement lists

Chinese government agencies (SAC, AQSIQ, CNIS, VECC, ERI, et cetera) are interested and open to international exchange on several energy efficiency matters: standards, labels, procurement, financial incentives, testing. To secure a Chinese framework of cooperating ministries, government and NGO agencies, the Topten China Advisory Group was established (see Charter and membership in Annex 8).

During this project phase the following two key partnerships and co operations have been established:

- VECC-MEP, the Vehicle Emission Control Center at the Ministry of Environmental Protection, has shared with us a new methodology to rate and rank the energy performance of cars. It has secured the establishment of a comprehensive database for car emissions and fuel consumption data. It will cooperate under a future Asian Development Bank ADB financed Conformity Testing Program, part 1 on motor vehicles for the specific needs of Topten China. VECC has hired a full qualified staff person to support the continuous data exchange with Topten China.
- CNIS, the China National Institute of Standardization, has shared with us Energylabel registration data of the energy performance of all registered product data. CNIS has agreed to cooperate in a research project on product testing as part of the ADB Conformity Testing Program CTP, part 2 on appliances.

To intensify the cooperation several meetings were held with the key partners both in China and in Switzerland:

1. A delegation of VECC visited Switzerland on 4 - 5 August 2010 to discuss car standards and attended an ETH-ZH meeting on black carbon (supported by an SDC grant). The opportunity was used to discuss the Conformity Testing Program for cars.
2. A high level delegation of SAC and CNIS visited Switzerland on 7 - 8 September 2010 to discuss appliance standards with S.A.F.E. and Topten Switzerland in Zurich, and also visited the SFOE in Berne. The meetings were used to discuss the conformity testing program for appliances and other research cooperation programs.
3. A CNIS delegate (Zhang Xin) was invited to visit Switzerland and to present his paper at the Motor Summit 26 - 28 October 2010. This visit was used to update the information on new Chinese efficiency standards and labels.

The partnership efforts with VECC and ICA have been successful at an early stage. It was more difficult to develop concrete projects supported by both sides and make the partnerships a meaningful cooperation project. Considerable in kind work has been contributed especially by VECC for the car methodology and selection procedure. The cooperation with CNIS has been successfully expanded into research cooperation for appliance testing whereas ICA has shown less interest in cooperating on concrete projects.

We gather from these three recent meetings with our Chinese partners that they are increasingly aware and interested in our cooperation and enjoy the intensive know how exchange with their Swiss partners. We will build on this increased interest to strengthen our collaboration in the second phase and engage in concrete joint activities of mutual interest.

# 5. Lessons learned for second phase 2011-13

The experience of building up a test website (by end of 2009) and making a public launch of seven key product categories with 259 products in October 2010 have provided some key insights into the Chinese decision making and market transformation potential of consumer goods:

1. Basically the innovative approach of Topten was – after a time of hesitance – accepted and appreciated. The hesitance was due to the competition of BAT products (maybe 5% – 10% of the market) with the energy labeled products in the best China "Class 1" which often include between 30% and 80% of all available products.
2. The fear was also that Topten would often select only high performance foreign brands (Electrolux, Siemens, Bosch, Toshiba, Panasonic, Osram, Philips, et al), neglect Chinese brands and thus cater for a high priced premium product and wealthy consumer segment only. However, the test site already showed by the end of 2009 and now the published site proves that this is not the case and that there are many Chinese brands at acceptable prices that can compete easily with imported foreign brands. Only 42% of the 259 products have foreign manufactures from Japan, Korea, Europe, and USA.
3. The Advisory Group (AG) was launched as part of the effort to form a Topten China Framework Agreement that includes a number of key Chinese agencies contributing to the significance of the approach. The AG has a Charter with an informal status. Initially, some high officials contacted saw a potential conflict of interest in their government role and supporting an NGO in the selection process of BAT products. The "official" representation is not yet fully set. Only after an initial public success, there will most likely be greater interest among officials to be represented in the AG. The important launch and post-launch plan developed by the team address the awareness raising among the public including monitoring.
4. The first pilot set of conformity testing has shown that it needs to be repeated systematically for most of the product categories to secure the accuracy of the energy efficiency data. An ADB funded program with VECC/MEP for cars and CNIS/AQSIQ for appliances will be launched in 2011.
5. Experience of market research of energy efficient consumer goods in China confirms:

    - The Chinese testing standards are sometimes outdated and not internationally harmonized, and it is therefore not possible to distinguish performance with new advanced technology (e.g. quality of compact fluorescent lamps).
    - The government minimum energy performance standards MEPS are decided on at a late stage and often they are set at a level that is too low (i.e. the market outperforms the standards even before they are released and thus the standards become obsolete/are not useful), and sometimes they are not fully enforced.
    - Financial incentives are few (AC, motors) and mostly oriented towards increasing sales volume, not top class energy efficiency.
    - Procurement lists are too long and include cheap low quality products as well as energy efficient products.

6. We have learned that the key element in the process of market transformation is to make the access for better products faster and easier. China has already a set of energy efficient products but they are not easy to find and not available in all retail stores.
7. The association with WWF China as host for the Topten China team proved helpful for the start. An independent project management unit is necessary in 2011 and already under preparation.
8. A number of international groups and programs (CLASP, Eco-Asia, and NRDC) work on related fields of energy efficiency in China. All of them have agreed to partner with our project.

# 6. Next steps

Following the "Preparatory Phase 2008 - 2010" now the "Development Phase 2011 – 2013", with a focus on marketing & communication and an expanded product scope, is under preparation.

Based on the findings of the marketing & communication concept we want to reach six specifically identified target groups:

1. End consumers to create market awareness,
2. Retailers to encourage them to display BAT products,
3. Manufacturers to stimulate the development of future BAT products,
4. Multipliers (procurement agencies, energy advisors, local government) to profit from the data base of BAT products,
5. Testing engineers to help harmonizing testing procedures and accuracy,
6. Government agencies to lift efficiency levels in labels, in MEPS and also in subsidy programs.

In the next phase work will be focused on six modules planned to secure a comprehensive BAT strategy in the Chinese market for consumer goods:

| | |
|---|---|
| M1 | Topten products & Web |
| M2 | Multipliers: Manufacturers & Retailers |
| M3 | Communication & Outreach |
| M4 | Know how Exchange |
| M5 | Policy Makers Dialogue |
| M6 | Conformity Testing |

This development phase will lead to the "Sustainable Operation phase after 2013" (see Figure 10). It will also be managed by TIS with a new and independent "Topten China, Limited Liability Company, Beijing" that is currently under preparation. The current Topten China Beijing team will be the core of the expanded team from 2011. Topten China LLC may eventually be co owned by a consortium of partners in China.

A funding proposal for 2011 - 2013 was proposed to Seco and positively decided upon in late December 2010.

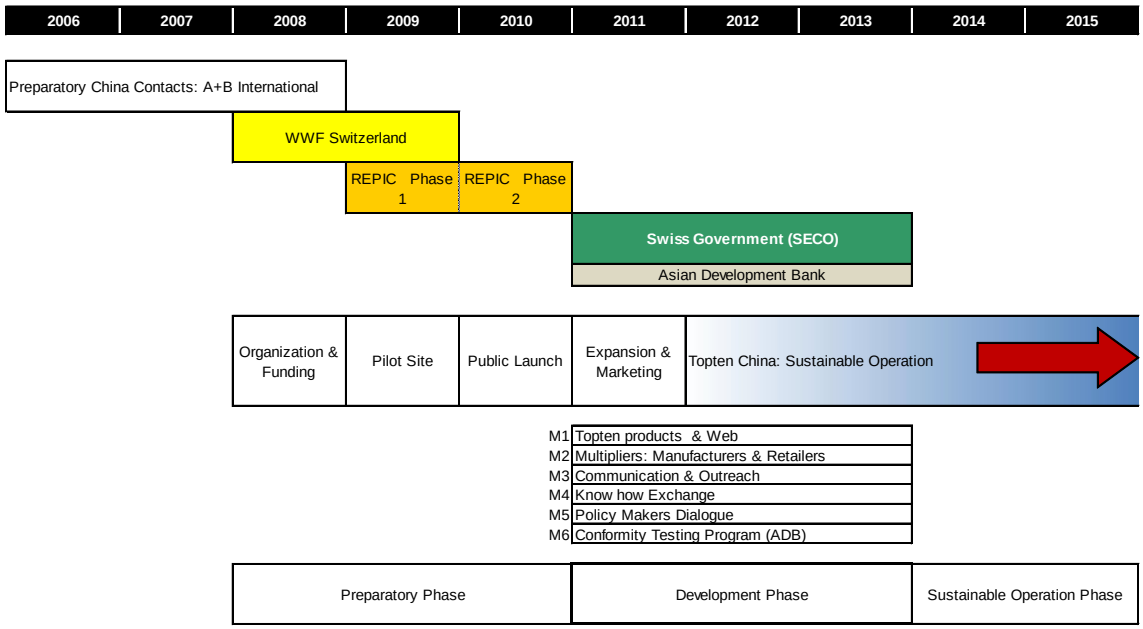



*Figure 10 Development phases of Topten China*

In addition, a Conformity Testing Program CTP was designed with our strategic partners and presented to the Asian Development Bank ADB. It consists of two parts:

- CTP Part 1: Motor Vehicles with VECC and MEP
- CTP Part 2: Appliances with CNIS and AQSIQ.

The ADB is expected to decide upon potential funding of a Technical Assistance grant for the CTP in June 2011. A major concern of the Development Phase is the reduction of the need of

international experts for training to reduce cost. The establishment of a sound cooperation with Chinese partners will share the operational effort through in-kind work.

# Annex 1: List of products

The following list shows the product categories and sub categories on Topten China as of end of October 2010.

| Product category | Sub-category | Numbers of products | Number of foreign products | Percentage of foreign/total products | Number of foreign brands |
|---|---|---|---|---|---|
| Cars | < 1 l | 9 | 2 | 22% | 2 |
| | 1 - 1.3 l | 8 | 4 | 50% | 3 |
| | 1.3 - 1.6 l | 9 | 7 | 78% | 6 |
| | 1.6 - 2.0 l | 7 | 4 | 57% | 3 |
| | 2.0 - 2.4 | 8 | 7 | 88% | 6 |
| Air Conditioner (fixed speed) | Wall < 2800 W | 7 | 0 | 0% | 0 |
| | Wall 2800 - 4500 W | 11 | 0 | 0% | 0 |
| | Free standing 4500 - 6000 | 7 | 0 | 0% | 0 |
| | Free standing 6000 - 7500 | 6 | 0 | 0% | 0 |
| Air Conditioner (variable speed) | Wall < 2800 W | 9 | 1 | 11% | 1 |
| | Wall 2800 - 4500 W | 9 | 2 | 22% | 1 |
| | Free standing 4500 - 6000 | 2 | 1 | 50% | 1 |
| | Free standing 6000 - 7500 | 6 | 3 | 50% | 3 |
| Washing machine (drum) | < 6 kg | 9 | 0 | 0% | 0 |
| | = 6 kg | 6 | 2 | 33% | 1 |
| | > 6 kg | 11 | 7 | 64% | 2 |
| Washing machine (impeller) | < 6 kg | 11 | 2 | 18% | 1 |
| | < 6 kg | 13 | 3 | 23% | 2 |
| Electric water heater | < 50 l | 9 | 3 | 33% | 1 |
| | 50 - 80 l | 11 | 9 | 82% | 4 |
| | 80 - 120 l | 5 | 5 | 100% | 3 |
| Refrigerator | < 180 l | 12 | 1 | 8% | 1 |
| | 180 - 200 l | 12 | 4 | 33% | 2 |
| | 200 - 220 l | 9 | 2 | 22% | 1 |
| | 220 - 250 l | 11 | 1 | 9% | 1 |
| Copier (monochrome) | < 50 ppm | 10 | 10 | 100% | 3 |
| | > 50 ppm | 9 | 9 | 100% | 3 |
| Copier (color) | < 50 ppm | 3 | 3 | 100% | 1 |
| | > 50 ppm | 2 | 2 | 100% | 2 |
| Monitor | Screen 15 - 19" | 8 | 7 | 88% | 3 |
| | Screen 19 - 22" | 7 | 6 | 86% | 2 |
| | Screen 22 -24" | 3 | 3 | 100% | 1 |
| **Total** | **32** | **259** | **110** | **42%** | **60** |

The product categories lamps and TVs are currently in the preparatory stage and will be published early 2011.

Screen shots of product category pages are shown in Annex 4.

# Annex 2: Collaborators and consultants

**Team members:**

| Organization | Collaborator | Task |
|---|---|---|
| TIS Switzerland | Conrad U. Brunner | Project manager |
| | Eric Bush | Senior Technical Advisor |
| | Rita Werle | Economic advisor |
| | Sun Wei | Technical consultant and translator |
| WWF Switzerland | Bella Roscher | International coordinator |
| | Felix Meier | Head Business & Consumption, consumer product expert |
| WWF China | Li Lin | Deputy Country Representative |
| | Hou Yanli | Climate and Energy Program Director |
| | Cao Qiaohong | Team leader (until July 2010) |
| | Hu Bo | Technical Director, team leader a.i. |
| | Huang Luting | Communication Director |
| | Zhao Feiyan | Technical Assistant |
| WWF Hong Kong | William Yu | Climate Program Director and Project Manager |
| | Angus Wong | Technical Advisor |

**Consultants:**

| | | |
|---|---|---|
| Ncode Switzerland | Manuel Gemperli, Oli Kessler | Web design and database |
| Xilin Zhuyi Art Design Co., Ltd., Beijing | | Web design |
| Beijing Shangse Printing & Design co., Ltd., Beijing | | Graphic design |
| Beijing Shikong Daohang Information Consulting Co., Ltd., Beijing | | Launch event manager |
| Dezan Shira & Associates LLC, Beijing | Richard Hoffmann | Business consultant |
| CHEARI China household efficiency research institute, Beijing | | Testing laboratory |

# Annex 3: Partners and members of the Advisory Group

The members of the Advisory Group were carefully selected based on the potential liaisons of the respective organization. The Advisory Group will support Topten China in developing further relationships with Chinese government and international organizations.

The following institutions and persons have been invited to become AG members:

| | |
|---|---|
| CECA | Song Zhongkui |
| CHEARI | Wu Shangjie |
| CLASP | Steven Zheng |
| ERI | Yu Cong |
| FDFA | Yannick Roulin |
| ICA | Victor Zhou |
| NRDC | Li Yuqi |
| SAC | Yin Minghan |
| TIG | Eric Bush |
| Topten China | Hu Bo (secretary) |
| VECC | Tang Dagang |
| WWF | Li Lin |

At the first AG meeting on 26 October 2010 - prior to the launch - the following 13 representatives from 11 institutions were present:

| **Organization** | **Name** | **Function** |
|---|---|---|
| CHEARI | Wu Shangjie | Member |
| CLASP | Li Jiayang | Member |
| ERI at NDRC | Yu Cong | Member |
| ICA | Huang Junpeng | Member |
| NRDC | Li Yuqi | Member |
| SAC | Xu Xiang | Member |
| Swiss Government (FDFA) | Yannick Roulin | Member |
| Topten China | Hu Bo | Secretary |
| Topten International Group | Eric Bush | Member |
| VECC | Tang Dagang, Vance Wagner | Member |
| WWF China | Li Lin, Hou Yanli | Member |

# Annex 4: Product pages

The following Figures 11 and 12 show the screen shots of the product pages as of end of October 2010. All products can be viewed in Chinese and English.

| Chinese page | English page |
|---|---|
|  | |

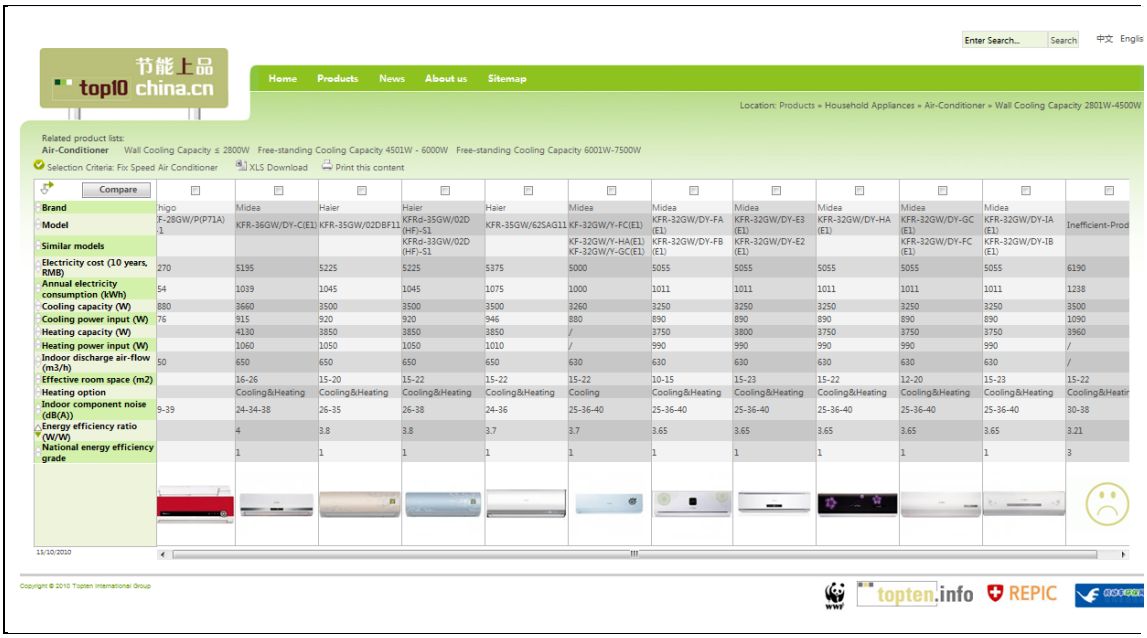
*Figure 11 Chinese and English product pages: air conditioners*

Here a screen shot of one sub category of every product category (in English) is shown. Each page contains:

- Selection criteria,
- Printing format
- XLS download

Each product contains an image, a link to its manufacturer data base, a list of performance data, and its energy cost during an average life cycle. Each list contains also a bad example on the right side to be easily comparable with an energy efficient product.

The major information lines can be sorted individually (arrow on left margin). Each product can be marked (square on top) to be compared in a separate list. Each list shows the update date on the lower left corner.




top10 china.cn
Home Products News About us Sitemap
Location: Products » Household Appliances » Refrigerator » Total Volume 181L-200L
Related product lists:
Refrigerator Total Volume ≤ 180L Total Volume 201L-220L Total Volume 221L-250L
Selection Criteria: Refrigerator
XLS Download
Print this content
Compare
Brand
Model
Electricity Cost (RMB, 15years)
Total Storage Volume (L)
Cooling compartment (L)
Freezing compartment (L)
Other compartments (L)
Freezing Capacity (kg/24h)
Height (mm)
Width (mm)
Depth (mm)
Energy Efficiency Index (%)
Daily Electricity (kWh)
Annual Electricity (kWh)
National energy efficiency grade
MeiLing BCD-196UBA15 765 186 131 55 0 4 1578 544 626 22.05 0.28 102 1
MeiLing BCD-186ZM2 SG 810 181 122 59 0 3 / 603 / 23.5 0.297 108 1
MeiLing BCD-181FQ 825 186 130 56 0 4 1710 / 548 23.62 0.3 110 1
MeiLing BCD-186SHA 795 186 130 56 0 4 1578 / 544 23.77 0.29 106 1
MeiLing BCD-186SHC 848 196 126 48 22 3 / 576 / 25.1 0.31 113 1
TCL BCD-196UBA15 900 197 129 68 0 / 1566 624 554 26 0.33 120 1
XinFei BCD-197CHT 960 198 127 71 0 3.5 1686 599 551 26.3 0.35 128 1
Media BCD-198SMA 930 181 113 68 0 3.5 1556 615 548 26.36 0.34 124 1
MeiLing BCD-181KHA 900 182 125 57 0 3.5 1555 555 545 26.4 0.33 120 1
TCL BCD-182U16 960 195 130 65 0 3.5 1560 620 545 27.2 0.35 128 1
Haier BCD-195KJN 1838 189 64 125 0 8.5 1526 519 557 46.05 0.67 245 2
Inefficient-Product
10/10/2010
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topten.info
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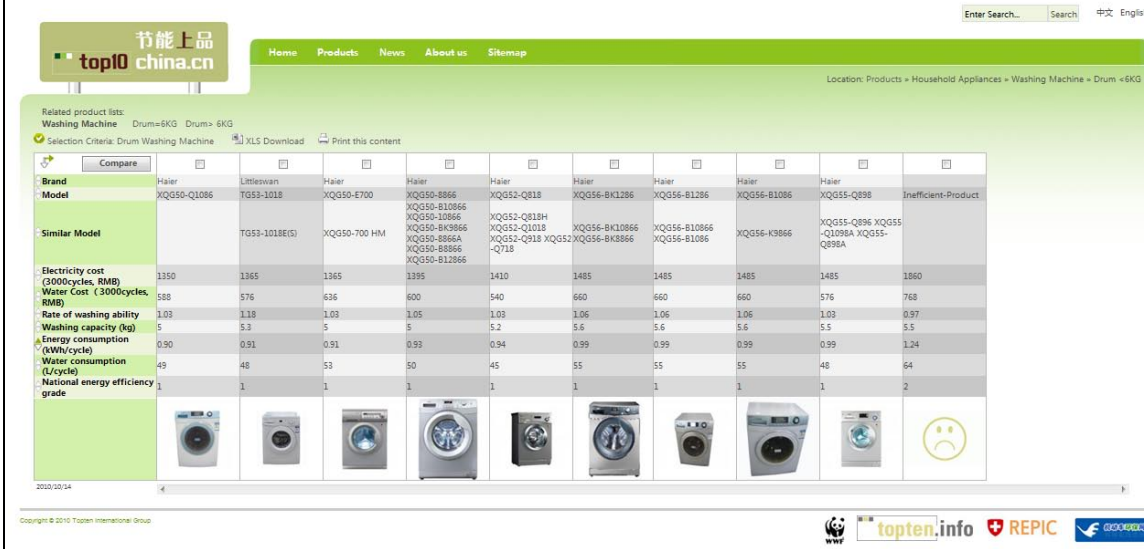
top10 china.cn
Home Products News About us Sitemap
Location: Products » Household Appliances » Washing Machine » Drum <6KG
Related product lists:
Washing Machine Drum=6KG Drum> 6KG
Selection Criteria: Drum Washing Machine
XLS Download
Print this content
Compare
Brand
Model
Similar Model
Electricity cost (3000cycles, RMB)
Water Cost（3000cycles, RMB)
Rate of washing ability
Washing capacity (kg)
Energy consumption (kWh/cycle)
Water consumption (L/cycle)
National energy efficiency grade
Haier XQG50-Q1086 1350 588 1.03 5 0.90 49 1
Littleswan TG53-1018 TG53-1018E(S) 1365 576 1.18 5.3 0.91 48 1
Haier XQG50-E700 XQG50-700 HM 1365 636 1.03 5 0.91 53 1
Haier XQG50-8866 XQG50-B10866 XQG50-10866 XQG50-BK9866 XQG50-8866A XQG50-B8866 XQG50-B12866 1395 600 1.05 5 0.93 50 1
Haier XQG52-Q818 XQG52-Q818H XQG52-Q1018 XQG52-Q918 XQG52-Q718 1410 540 1.03 5.2 0.94 45 1
Haier XQG56-BK1286 XQG56-BK10866 XQG56-BK8866 1485 660 1.06 5.6 0.99 55 1
Haier XQG56-B1286 XQG56-B10866 XQG56-B1086 1485 660 1.06 5.6 0.99 55 1
Haier XQG56-B1086 XQG56-K9866 1485 660 1.06 5.6 0.99 55 1
Haier XQG55-Q898 XQG55-Q896 XQG55-Q1098A XQG55-Q898A 1485 576 1.03 5.5 0.99 48 1
Inefficient-Product 1860 768 0.97 5.5 1.24 64 2
2010/10/14
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top10 china.cn
Home Products News About us Sitemap
Location: Products » Household Appliances » Electrical Water Heater » 51L-80L
Related product lists:
Electrical Water Heater ≤ 50L 81L-120L
Selection Criteria: Electrical Water Heater
XLS Download
Print this content
Compare
Brand
Model
Similar models
Hot water output rate (%)
Standing loss per 24 h
Power (W)
Rated capacity (L)
Temperature range (℃)
Intallation
National energy efficiency grade
Siemens DG60366STI DG60368STI 92.9 0.49 2000 60 35-75 Horizontal 1
Siemens DG60366TI 92.9 0.59 2000 60 35-75 Horizontal 1
Sakura SEH-6077X 89.8 0.59 2500 60 20-78 Horizontal 1
Siemens DG65365STI 87.8 0.49 2000 65 35-75 Horizontal 1
Siemens DG65365TI 87.8 0.55 2000 65 35-75 Horizontal 1
Haier ES60H-T1（E） 86.2 0.59 3000 60 75 Horizontal 1
Aosmith CEWHR-60C2A CEWHR-60PG5 CEWHR-60PE5 85.6 0.592 3000 80 35-75 Horizontal 1
Ariston AM60H3.0EI5 85.5 0.56 3000 60 35-75 Horizontal 1
Siemens DG65135TI DG65136TI 85.3 0.58 2000 60 35℃-75 Horizontal 1
Siemens DG60135TI DG60136TI 85.1 0.58 2000 60 35-75 Horizontal 1
Inefficient-Product 50 1 2500 80 40-75 Horizontal 5
14/10/2010
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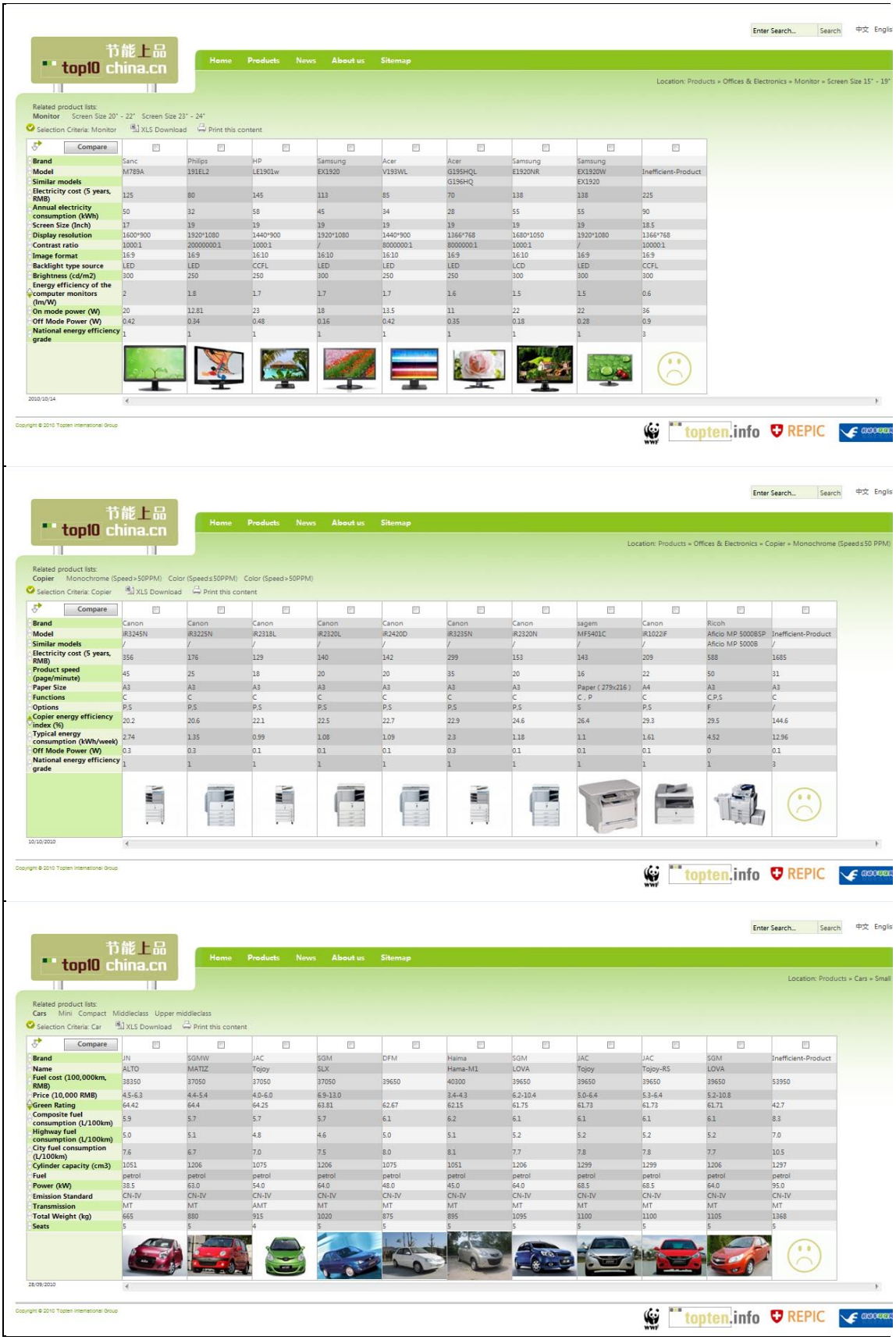



*Figure 12 List of seven major product categories (English)*

# Annex 5: Selection criteria

For each product category, a selection criteria page was made to inform manufacturers and retailers about our scale and judgment. This is important for market transparency and to secure that no manufacturers feel their product is published (or not published) unfairly.

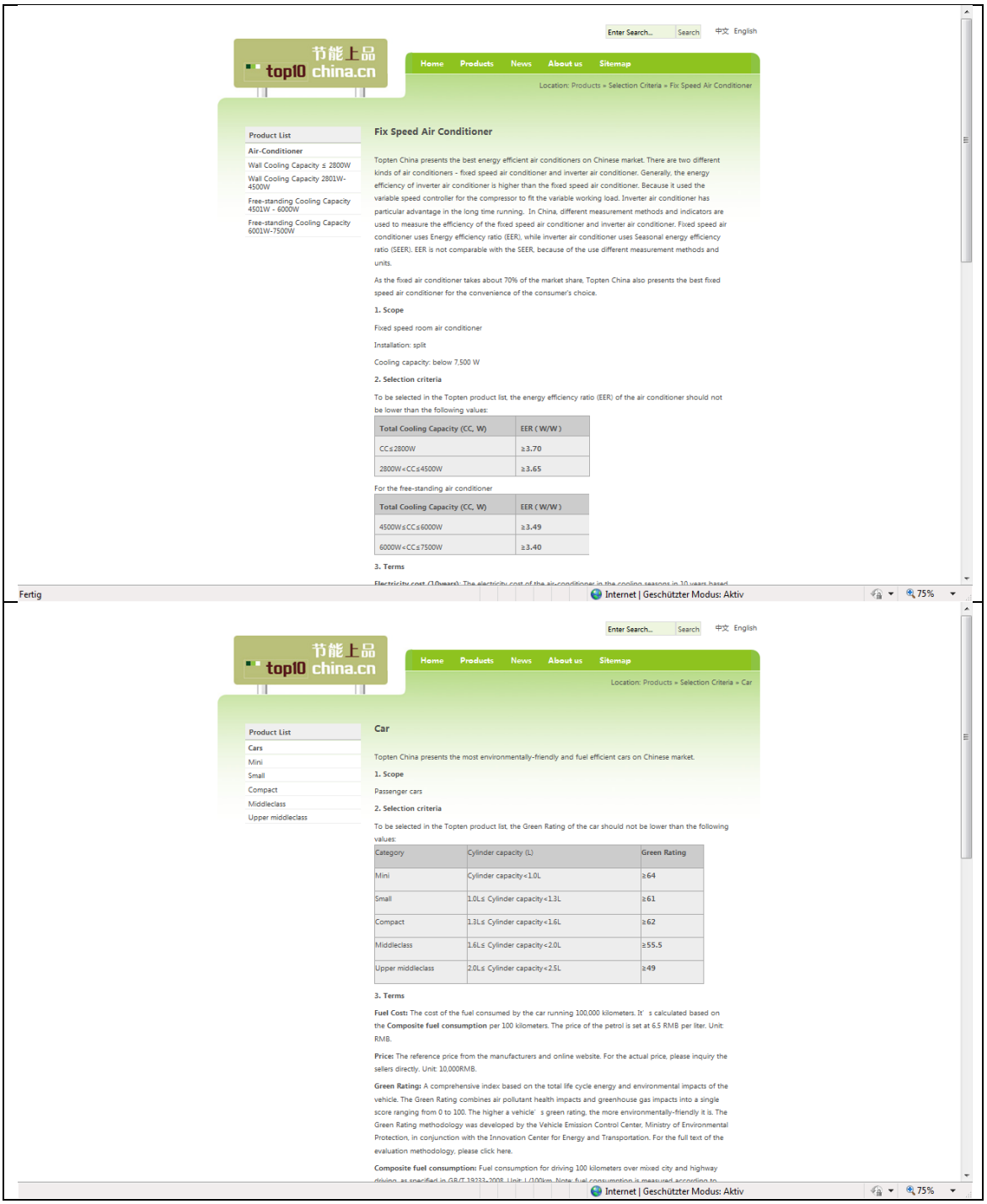



*Figure 13 Selection criteria: examples for air conditioner and car*

# Annex 6: Selection methodology

For each product category, a two step analysis was made:

- Definition of relevant sub-categories: this was made based on the number of available models and respective sales volume.
- Definition of cut-off point for the selection of most efficient products: this was made based on a statistical review of the number of products in each efficiency class.

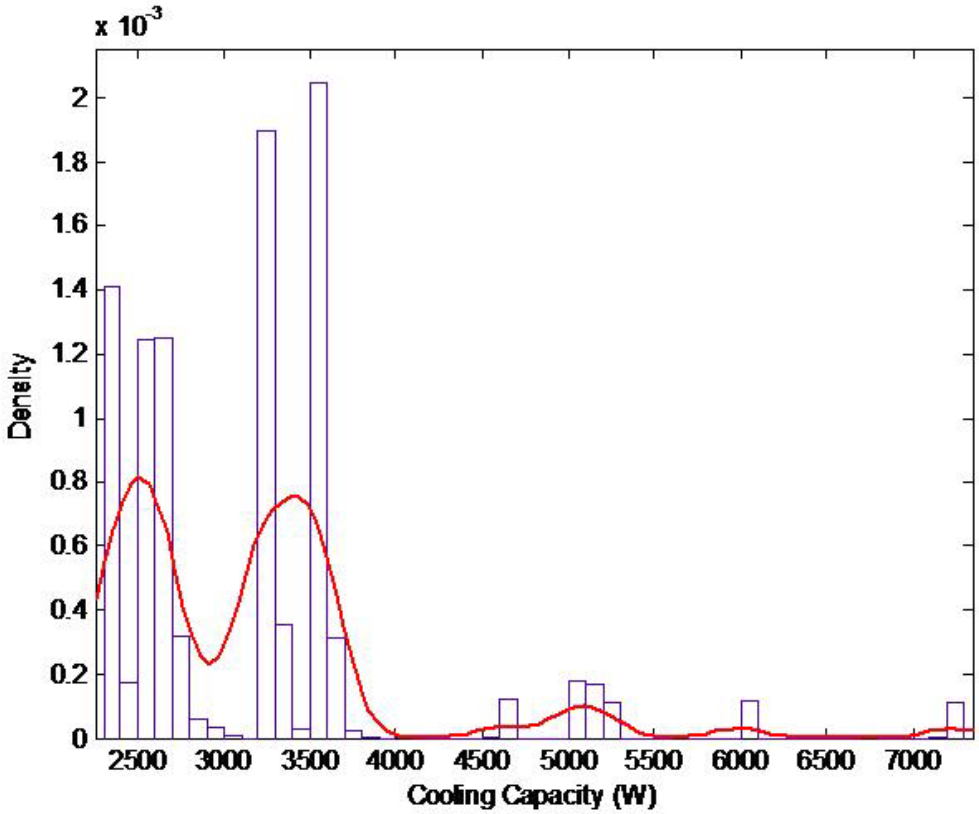
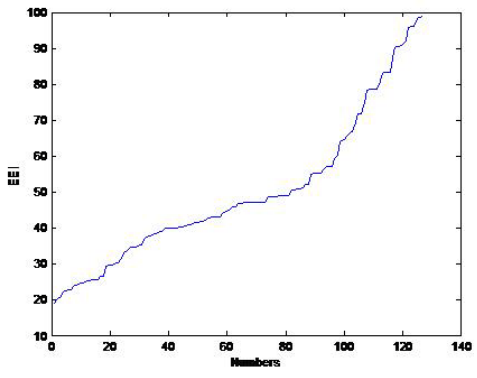
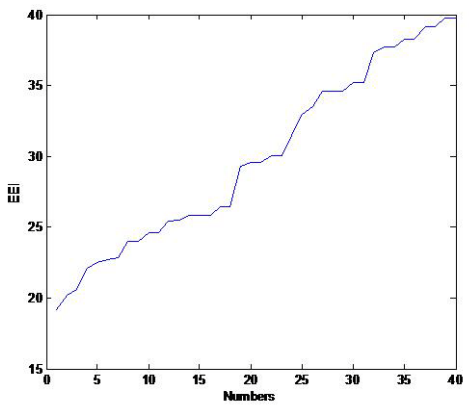



*Figure 14 Wall air conditioner: total cooling capacity. Distribution shows important scope and three major groups.*




Copier monochrome < 50 ppm; 127 models on class 1




Cut-off definition

*Figure 15 Cut-off definition (example copiers)*

# Annex 7: Conformity Test

Conformity test are necessary to secure the accurateness of self-declared industry data. In September-October 2010, a first badge of 29 products in three major product categories was tested at the CHEARI.

The results of the conformity are very interesting, following are some key findings:

1. Most of the products (93%) meet the requirements set by Chinese standards and regulations.
2. The measured energy performance of the air conditioners and refrigerators usually are lower than the declared performance from the manufacturers.
3. The measured energy performance of monitors is higher than the declared performance from the manufacturers.
4. The manufacturers' declared values for the monitors are always the same with the minimum requirements for the grade 1 level (1.05).
5. Different industries have variable labeling strategies (the differences between the declared value and measured value). Air conditioner and refrigerator industries are more "aggressive" (declared value is better than the measured value) and monitors are conservative (declared value is lower than the measured value). This phenomenon can also been observed in other products based on the data we collected.

The results below show the deviation from the declared values.

**Air conditioner**

| No | Model | Manufacturer | Cooling Capacity | | Power Inputs | | EER | | Energy Grade | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Rated | Tested | Rated | Tested | Rated | Tested | Grade Labeled | Tested Grade |
| 1 | Confidential data | | 2650 | 2734.5 | 736 | 800.4 | 3.60 | 3.42 | 1 | 1（04 standards） |
| 2 | | | 2600 | 2501.4 | 722 | 728.5 | 3.60 | 3.43 | 1 | 1（04 standards） |
| 3 | | | 2300 | 2493.6 | 635 | 684.4 | 3.62 | 3.64 | 1 | 1（10 standards） |
| 4 | | | 3250 | 3237.8 | 890 | 949.8 | 3.65 | 3.41 | 1 | 1（04 standards） |
| 5 | | | 3250 | 3229.1 | 890 | 944.5 | 3.65 | 3.42 | 1 | 1（04 standards） |
| 6 | | | 3250 | 3263.3 | 890 | 953.8 | 3.65 | 3.42 | 1 | 1（04 standards） |
| 7 | | | 2600 | 2545.7 | 700 | 707.3 | 3.71 | 3.60 | 1 | 1（10 standards） |
| 8 | | | 2600 | 2615.4 | 700 | 765.6 | 3.71 | 3.42 | 1 | 2（10 standards） |
| 9 | | | 2600 | 2546.0 | 650 | 707.9 | 4.00 | 3.60 | 1 | 1（04 standards） |

*Figure 16 Conformity test results: Air conditioners (Source CHEARI October 2010)*

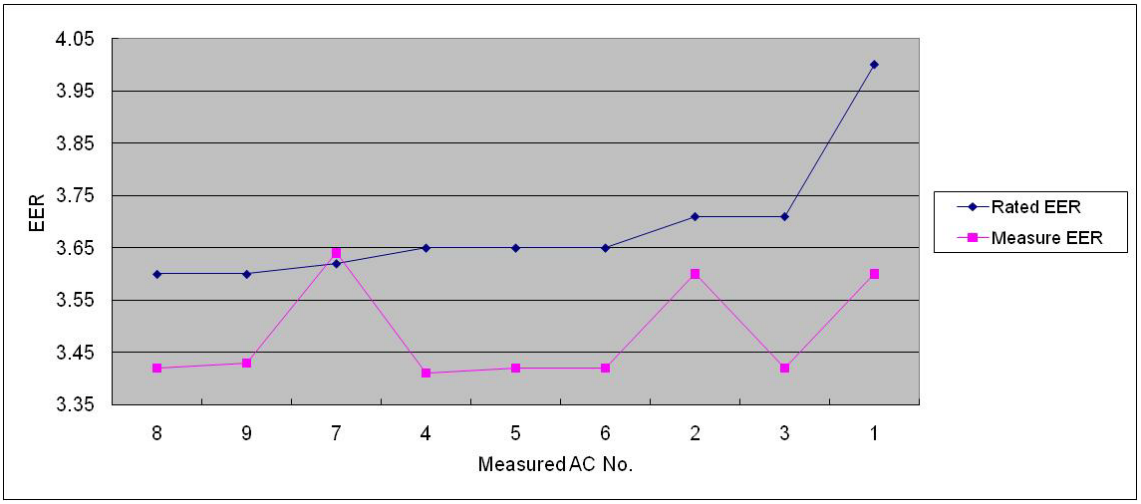



*Figure 17 Air conditioners test results: rated and measured energy efficiency rating EER*

**Refrigerator**

| No | Manufacturer | Model | Adjusted Volume/L | | | Energy Consumption/ kWh/24h | | | EEI | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Rated | Limited | Tested | Rated | Limited | Tested | Rated Grade | Tested |
| 1 | Confidential data | | 195 | 189.2 | 193.1 | 0.29 | 0.33 | 0.32 | 1 | η =24.6% 1 |
| 2 | | | 195 | 189.2 | 193.1 | 0.33 | 0.38 | 0.33 | 1 | η =25.4%1 |
| 3 | | | 186 | 180.4 | 183.5 | 0.29 | 0.33 | 0.33 | 1 | η =26.2%1 |
| 4 | | | 186 | 180.4 | 183.5 | 0.29 | 0.33 | 0.32 | 1 | η =25.4%1 |
| 5 | | | 208 | 201.8 | 205.6 | 0.38 | 0.44 | 0.42 | 1 | η =30.7%1 |
| 6 | | | 211 | 204.7 | 205.2 | 0.39 | 0.45 | 0.40 | 1 | η =29.6%1 |
| 7 | | | 219 | 212.4 | 219.8 | 0.35 | 0.40 | 0.40 | 1 | η =28.0%1 |
| 8 | | | 208 | 201.8 | 202.9 | 0.39 | 0.45 | 0.45 | 1 | η =33.6%1 |
| 9 | | | 226 | 219.2 | 222.1 | 0.34 | 0.39 | 0.39 | 1 级 | η =28.1%1 |
| 10 | | | 196 | 190.1 | 195.7 | 0.32 | 0.37 | 0.42 | 1 级 | η =31.8%1 级 |

*Figure 18 Conformity test results for refrigerators (Source: CHEARI October 2010)*

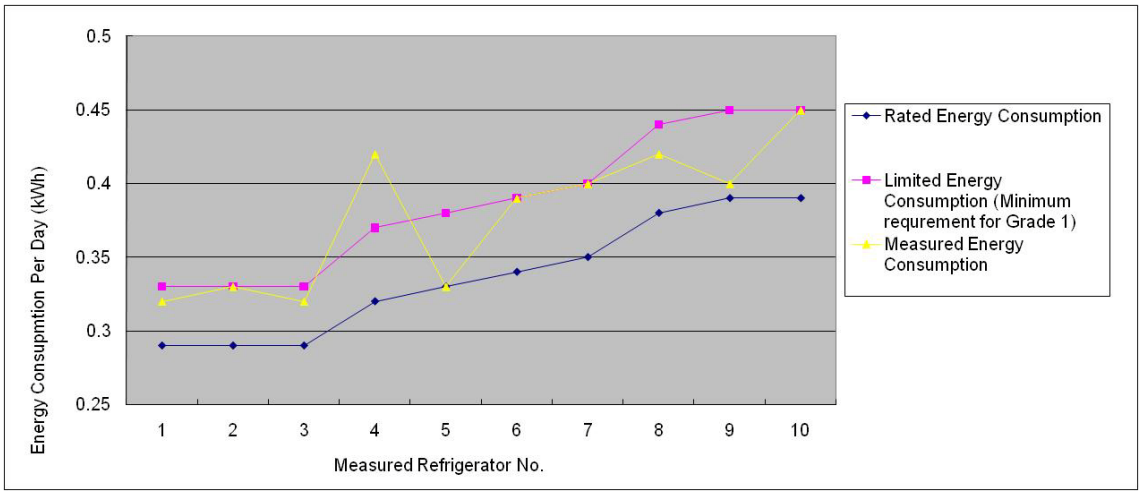



*Figure 19 Refrigerators test results: rated and measured energy consumption*

## Computer monitor

| No | Model | Manufacturer | Resolution | Tested | | | Rated | | Grade 1 limited | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | On mode power (W) | Off mode power (W) | Energy Efficiency | Energy Efficiency | Offmodepower (W) | Energy efficiency | Off mode power (W) |
| 1 | Confidential data | | 1360×768 | 15.66 | 0.165 | 1.58 | 1.05 | 0.3 | 1.05 | 0.5 |
| 2 | | | 1440×900 | 14.94 | 0.18 | 1.74 | 1.05 | 0.3 | 1.05 | 0.5 |
| 3 | | | 1280×1024 | 21.11 | 0.17 | 1.16 | 1.05 | 0.3 | 1.05 | 0.5 |
| 4 | | | 1680×1050 | 39.44 | 0.251 | 1.11 | 1.05 | 0.3 | 1.05 | 0.5 |
| 5 | | | 1920×1080 | 19.02 | 0.15 | 1.80 | 1.05 | 0.3 | 1.05 | 0.5 |
| 6 | | | 1920×1080 | 21.9 | 0.264 | 1.22 | 1.05 | 0.4 | 1.05 | 0.5 |
| 7 | | | 1440×900 | 15.05 | 0.33 | 1.74 | 1.05 | 0.5 | 1.05 | 0.5 |
| 8 | | | 1920×1080 | 24.18 | 0.414 | 1.35 | 1.05 | 0.5 | 1.05 | 0.5 |
| 9 | | | 1280×1024 | 22.68 | 0.43 | 1.18 | 1.05 | 0.5 | 1.05 | 0.5 |
| 10 | | | 1440×900 | 20.23 | 0.48 | 1.24 | 1.05 | 0.5 | 1.05 | 0.5 |

*Figure 20 Conformity test results Monitors (Source: CHEARI October 2010)*

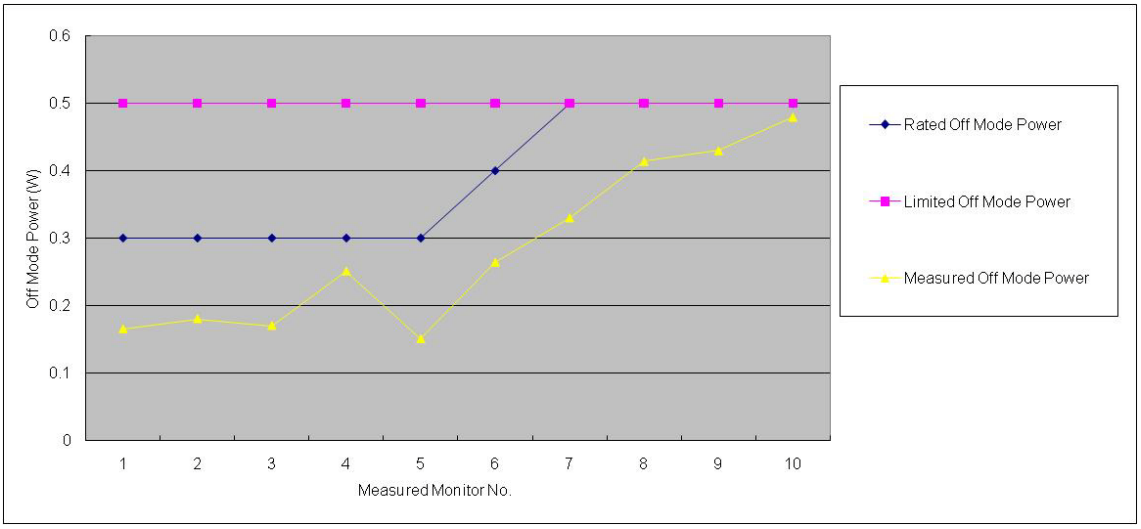



*Figure 21 Monitor test results: rated and measured off mode power*

The conformity test will be expanded in a separate program from 2011 to 2013 funded (not confirmed yet) by ADB.

## Annex 8: Advisory Group Charter

# Topten 中国 顾问组—章程

2010 年 10 月

**背景**

Topten 中国是一个对中国市场上顶级能效的终端用能产品的数据库。Topten 的数据是通过科学手段在市场上寻找高能效产品并建立在独立的功耗测试结果的基础上的。结果被公布在公众因特网平台 www.top10china.cn 上，向广大终端用户开放。

**顾问组目标及任务**

Topten 中国顾问组（AG）的目标是支持、指导并监督 Topten 中国项目的运作，其任务包括为 Topten 中国项目提供建议以确保 Topten 中国的运行符合中国的标准及规则、中国政府的政策和优先权、Topten 章程以及国际质量标准。

**顾问组组织**

顾问组的成员由相关领域资深的技术专家和政策顾问组成。

顾问组成员可以委派代表出席会议，会议以及讨论议题均为不对外公开。

顾问组秘书负责邀请成员参与顾问组会议，并提供必要的信息交流以及会议纪要。在当前阶段，每年在北京召开一次正式会议。

**顾问组成员**

| | |
|---|---|
| 国家标准化管理委员会 | 殷明汉 |
| 机动车排污监控中心 | 汤大钢 |
| 能源研究所 | 俞聪 |
| 国家节能协会 | 宋忠奎 |
| 中国家电研究院 | 吴尚杰 |
| CLASP | 曾磊 |
| 国际铜业协会 | 周胜 |
| 美国自然资源保护委员会 | 李玉琦 |
| 瑞士大使馆 | Yannick Roulin |
| 世界自然基金会 | 李琳 |
| Topten 国际集团 | Eric Bush |
| Topten 中国 | 胡波（秘书） |

# Topten China ADVISORY GROUP CHARTER

October 2010

**Background**

Topten China (TCN) is a new data base for the most energy efficient end-user products on the China market. TCN is based on scientific knowledge of energy efficiency standards product market research and independent energy testing results. The results are displayed to the end-consumer on a publicly available internet platform: www.top10china.cn.

**Advisory Group Goal and Task**

The goal of the Topten China **Advisory Group** (AG) is to support, guide and observe the Topten China project. The task of the AG is to advise the Topten China project to ensure TCN complies with Chinese standards and regulations, the policies and priorities of the Chinese government, the Topten Charter, and international quality standards.

**Advisory Group Organization**

The members of the AG are made up of highly qualified technical experts and policy advisors.

The members can send a deputy to attend the meetings. The meetings and the matter discussed are confidential.

AG has a **Secretary** who invites to the AG meetings and provides the necessary information exchange and minutes of the meetings. Currently one formal meeting is held annually in Beijing.

**Advisory Group members**

| | |
|---|---|
| SAC | Yin Minghan |
| VECC | Tang Dagang |
| ERI | Yu Cong |
| CECA | Song Zhongkui |
| CHEARI | Wu Shangjie |
| CLASP | Steven Zheng |
| ICA | Victor Zhou |
| NRDC | Li Yuqi |
| FDFA | Yannick Roulin |
| WWF | Li Lin |
| TIG | Eric Bush |
| Topten China | Hu Bo (secretary) |