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Topten International Group
Zurich, Switzerland

Investing in Energy Efficiency and our Future 2014

Topten Global Annual Report 2014

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Schweizerische Eidgenossenschaft
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WWF

ADEME
Agence de l'Environnement et de la Maîtrise de l'Energie

European Climate Foundation

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List of Abbreviations

ADEME	French Environment and Energy Management Agency
BAT	Best Available Technology
BKW	power production and distribution utility in Berne
CBEEX	China Beijing Environmental Exchange
CFL	A compact fluorescent lamp
CGPA	China Green Procurement Association
CHEARI	China Household Electric Appliance Research Institute
CIECCPA of MIIT	China Industry Energy Conservation and Cleaner Production Association of the Chinese Ministry of Industry and Information Technology
CLASP	Collaborative Labeling & Appliance Standards Program
CNIS	China National Institute of Standardization
CONUEE	Mexican National Commission for Efficient Energy Use
CQC	China Quality Certification Center
CSC	China Standard Certification Center
CVC	Certification and testing base of China Electric Apparatus Research Institute
EC	European Commission
ECF	European Climate Foundation
ECOS	European Environmental Citizens Organization for Standardization
EEDAL	Conference on Energy Efficiency in Domestic Appliances and Lighting
EKZ	Elektrizitätswerke des Kantons Zürich, utility of the canton of Zurich
ESCO	Energy Service Companies
EU	European Union
ewb	Elektrizitätswerk der Stadt Bern, utility of the city of Berne
ewz	Elektrizitätswerk der Stadt Zürich, utlity of the city of Zurich
FIDE	Fideicomiso para el Ahorro de Energía Eléctrica, Mexico
GfK	Market research company
GEF	Global Environment Facility
GHG	Greenhouse gas
GWh	Giga watt hours
ICLEI	Local Governments for Sustainability
IEA	International Energy Agency
IEA 4E EMSA	International Energy Agency, Energy Efficient End-Use Equipment, Electric Motor Systems Annex
IPCC	Intergovernmental Panel on Climate Change
iwb	power production and distribution utility in Basel
MEPS	Minimum Energy Performance Standards
MIIT	Ministry of Industry and Information Technology
MOF	Ministry of Finance
NDRC	National Development and Reform Commission
NRDC	Natural Resources Defense Council
NIM	National Institute of Metrology, China
R&D	Research and development
SAC	Standardization Administration of China
SEARI	Shanghai Electrical Apparatus Research Institute
SECO	Swiss State Secretariat for Economic Affairs
SENER	Secretaría de Energía, Mexico
TERI	The Energy and Resources Institute
TIG	Topten International Group
TWh	Terrawatt hour
UNDP	United Nations Development Program
VDE	Association for Electrical, Electronic & Information Technologies
VECC MEP	Vehicle Emission Control Center of the Chinese Ministry of Environmental Protection
WRI	World Resources Institute
WWF	Worldwide Fund for Nature

Executive Summary

Executive Summary

Energy efficiency and energy conservation standards and policies for products and processes in all areas of society are a constructive, inexpensive, and cost-effective way to address climate change. Most international institutions– from the IPCC, IEA, and the World Bank to major think tanks like TERI– push overall energy savings as a key means to curb fossil fuel use. In order to realize the enormous potential of cost-efficient and sustainable energy efficiency, programs to save energy have to be developed and implemented.

Topten is an international, independent, not-for-profit network promoting energy efficiency. Its mission is to mitigate climate change through market transformation, supporting the right market incentives and policy measures. Topten is a user -friendly tool to communicate energy efficiency, targeting policy-makers, consumers, and companies alike. It promotes low carbon technologies as a way to mitigate climate change and helps accelerate the change towards a resource efficient economy.

Topten operates in 21 countries promoting the best available technologies, with key country-specific product information. In addition to providing and updating online product ranking lists, Topten also works closely with governments and the private sector to push energy efficiency forward in the market.

This work includes cooperation with policy-makers to set minimum energy performance standards and to support the setting of energy label thresholds for continuous improvement. Topten does this through market research, norms tracking, customer information, and voluntary agreements with industry and retailers. It also has a global strategic alliance with WWF and profits from its network and outreach.

Throughout 2014, governments and corporations benefitted from Topten's technical expertise and market knowledge, which helped shape their energy efficiency strategies. In Europe, Topten analyses informed the European Commission on energy efficiency policies regarding draft regulations for televisions, air conditioners, coffee machines, tumble driers, and commercial cold appliances.

In China, the government introduced new energy efficiency requirements for washing machines, televisions, and air conditioners following the publication of the groundbreaking report "Market Analysis of China Energy Efficient Products" by Topten and CLASP in 2013. The report revealed how the country can save 1,000 terawatt hours of electricity by 2030– the equivalent of 400 medium coal-fired power plants – by implementing energy efficiency measures for products. Thanks to the report, the government improved its € 3.2 billion subsidy program, focusing on class 1 products only.

Top10 China also started moving into new areas including lowering trade barriers and encouraging green procurement. Furthermore, it successfully launched an industrial motors pilot project in Zhenjiang, Jiangsu Province.

Entering 2014, TopTen USA worked with 14 utilities in the four states of California, Connecticut, Massachusetts, and Rhode Island, reaching an estimated nine million households through its energy efficiency program outreach and promotions.

For Topten activities in Europe, Topten secured funding from the European Commission for the next three years. Thanks to funding from the same source, the project ProCold, which was initiated in Switzerland in 2013/14 to promote best available technology of commercial cold appliances and vending machines, will expand to Europe in 2015. The project encourages global market actors to switch to more efficient coolers, freezers, and service cabinets.

In Latin America, fundraising efforts, market research, and stakeholder mappings have taken place in Argentina, Chile, and Mexico. Earlier this year, the Chilean Ministry of Energy committed funds for the establishment of a national Topten program in 2015. Similar preparatory efforts for a potential launch of Topten have been carried out in India.

Topten in figures (see pages 20–21):

1. Overall budget for 2014 for the 20 countries: € 2,084,500 million (China: € 505,000, Europe: € 1.016 million, USA: € 192,550)
2. 20 national websites and two overview websites
3. Internet outreach worldwide: 3.3 million website visits in 2014. (China: 838,500, Europe: 2,109,000, USA: 360,000), social media: 19,141 weibo (twitter) followers in China

Message from the President

2014 was both a challenging and successful year for Topten around the world.

Topten witnessed great progress in China during the year. As a result of the report "Market Analysis of China Energy Efficient Products"[1] in 2013, the NDRC revised its subsidy program of € 3.2 billion (!) to include class 1 products only.

In addition, CNIS introduced new Minimum Energy Performance Standards (MEPS) and energy efficiency classifications, and the SAC announced a set of new energy efficiency standards for several products.

Top10 China also started moving into new areas including lowering trade barriers and encouraging green procurement, and successfully launched an industrial motors pilot project in Zhenjiang, Jiangsu Province. This pilot is supported by the MIIT and the local government.[2] Top10 China now has one of the largest product databases in the country, with over 400,000 entries.

In Europe, the Horizon 2020 program of the European Commission approved funding for Topten in Europe for the years 2015–2017. In addition, the "Commercial Cold" project, initiated in Switzerland last year, will now be scaled up to the European level thanks to funding from the same program. The objective is to promote the best available technology of commercial cold appliances and vending machines with multinationals such as Unilever and Nestlé.

Since the workshop in São Paulo in Brazil last year, progress has been made in the selected tier I countries in Latin America: Argentina, Chile, and Mexico. Fundraising efforts, market research, and stakeholder mappings have been conducted. Earlier this year, the Chilean Ministry of Energy committed funds for the establishment of a national Topten program. A corresponding training will take place in Santiago in January 2015.

Furthermore, funding is sought from the Inter-American Development Bank as well as potential funders at a national level, and the plan is to initiate discussions with the Latin America Regional Climate Initiative. In addition, WWF Switzerland supports these efforts.

In India, similar preparatory efforts have been carried out for a potential launch of Topten in this second largest market in the world in the near future.

Globally, Topten is involved in the GEF project "Establishing the Foundations of a Global Partnership to Accelerate the Market Transformation for Efficient Appliances and Equipment", which will kick off at the beginning of 2015.

Topten has a unique role to play as the world is taking on the climate change challenge. Our goal is market transformation through energy efficiency. Together, we create positive change for a sustainable future within the boundaries of our planet. I look forward to keeping developing this global program with you.

Eric Bush
President
Topten International Group

1 http://www.top10.cn/news/131/36/How-China-can-save-1-000-terawatt-hours-of-electricity-by-2030.html

2 http://www.top10.cn/news/156/36/Topmotors-China-Pilot-Program-Launched.html

Objectives and Organization

Objectives

Energy consumption and environmental friendliness of equipment and vehicles are of increasing importance in the market. Since the differences between models are significant, the selection and purchase of products is key and part and parcel of strategic decisions. Topten facilitates this process by providing the latest market information to the benefit of producers, consumers, and policy makers.

The main objective of Topten is market transformation through the promotion of energy efficiency. By contributing to the availability of more environmentally friendly products of high quality in the market, the negative impact on climate change is reduced around the world.

The product ranking lists on the Topten national websites are a service to consumers, buyers, traders, manufacturers, academia and politics, planners, and consultants to quickly and easily find the best products currently available.

Topten International Group (TIG)

Topten is coordinated by the TIG, an organization founded in 2006 and based in Zurich. TIG monitors the use of the Topten concept and protects the rights of Topten International (www.topten.info) and the platform for national Topten projects in Europe (www.topten.eu), „Best Products of Europe“ and energy policy recommendations, the Topten logo, and all contents on the national Topten websites.

Topten is based on:

- The Topten Charter:
  www.topten.eu/uploads/images/upload/Topten-Charter-2006.pdf
- The TIG Statutes:
  www.topten.eu/uploads/images/upload/TIG-Statutes-English.pdf
- The Rules of Procedure:
  www.topten.eu/uploads/images/upload/TIG-Rules-of-procedure-2006.pdf

Organization and responsibilities

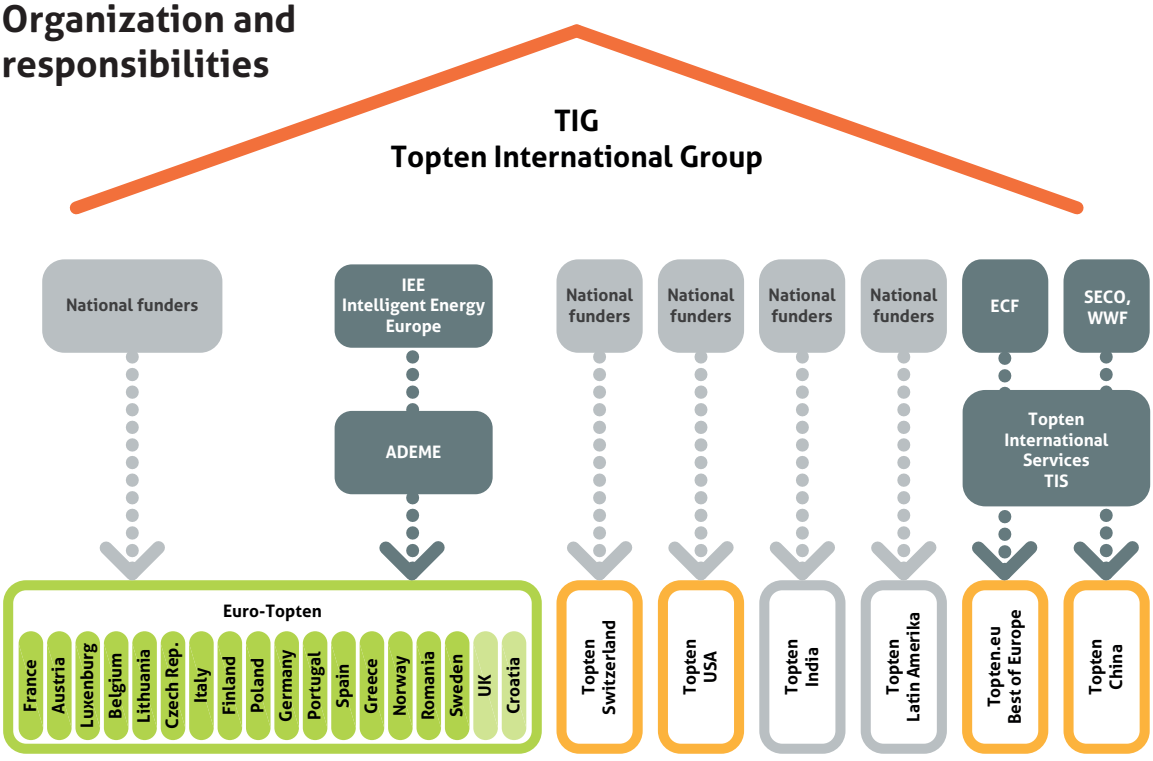


Figure 1. The structure of Topten International.
The European Commission and national funders support Topten in the EU. In addition, the European Climate Foundation supports the regional website and policy efforts in the EU. In Switzerland and the United States, national funders support Topten. SECO and WWF Switzerland support Top10 China. In India, Russia, and Latin America, Topten is not yet established.

Combating Climate Change by Catalyzing Market Transformation

According to the recent IPCC's Fifth Assessment Report 2014, "Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, and sea level has risen."[3]

Human caused change to the climate has led to atmospheric concentrations of greenhouse gases that are unprecedented in the last 800,000 years. Their effects on the climate system and "are extremely likely[4] to have been the dominant cause of the observed warming since the mid-20th century."

In the last couple of decades, climate change has had effects on people and the environment everywhere on the planet. "Continued emission of greenhouse gases will cause further warming and long-lasting changes."[5] "Limiting climate change would require substantial and sustained reductions in greenhouse gas emissions, which together with adaptation can limit climate change risks."[6]

3 IPCC, Climate Change 2014 Synthesis Report. Summary for Policymakers, http://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf page 2

4 IPCC, Climate Change 2014 Synthesis Report. Summary for Policymakers, Headline statements from the Summary for Policymakers, http://www.ipcc.ch/news_and_events/docs/ar5/ar5_syr_headlines_en.pdf page 1

5 Ibid

6 Ibid

Recent research acknowledges the enormous potential of energy efficiency as a key resource to reduce energy demand, generate financial savings and lower greenhouse gas (GHG) emissions. Investments in energy efficiency were estimated at € 265 billion in 2011, equaling investments in coal, oil and gas. According to some macroeconomists, energy efficiency is the most reliable energy supply there is. At the same time, the IEA predicts that by 2035, two thirds of the world's energy efficiency potential will still be untapped unless policy reforms are implemented.[7]

Also, the United Nations' *Sustainable Energy for All* initiative has a focus on energy efficiency and the topic is becoming a key component of the global development goals.[8] "In the face of rising energy demand, global growth aspirations and the pressing need to limit GHG emissions, the market for energy efficiency could develop rapidly – provided that stakeholders understand its value."[9]

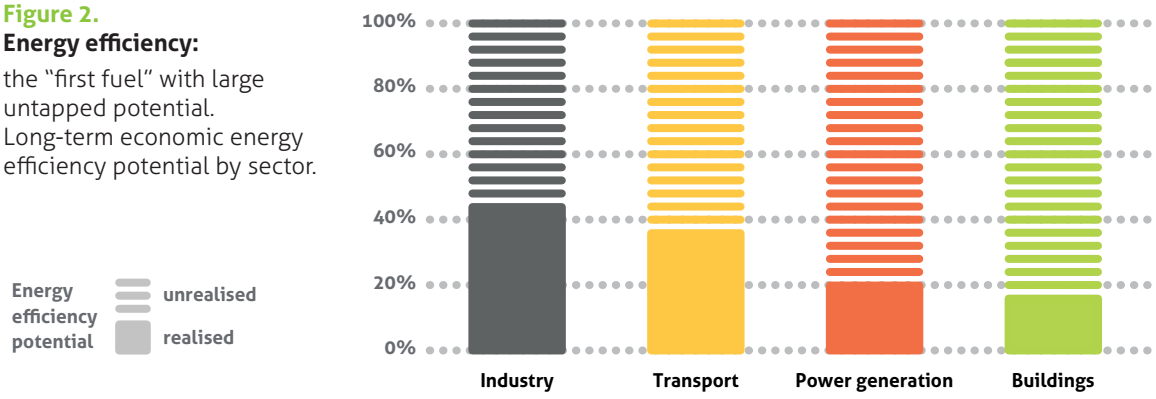
Investment in improved energy efficiency provides a variety of benefits to many different stakeholders, whether by directly reducing energy demand and associated costs or other objectives of particular importance for emerging economies and

7 IEA, Capturing the Multiple Benefits of Energy Efficiency 2014, http://www.iea.org/Textbase/npsum/MultipleBenefits2014SUM.pdf pages 1–2

8 http://www.se4all.org/our-vision/our-objectives/energy-efficiency/

9 http://www.iea.org/Textbase/npsum/MultipleBenefits2014SUM.pdf page 2

Figure 2.
Energy efficiency:
the "first fuel" with large untapped potential.
Long-term economic energy efficiency potential by sector.



Source: http://www.iea.org/Textbase/npsum/MultipleBenefits2014SUM.pdf page 2 (IEA (2012), World Energy Outlook 2012, OECD/IEA, Paris.)

Note: These energy efficiency potentials are based on the IEA New Policies Scenario outlined in the World Energy Outlook 2012. Investments are classified as "economically viable" if the payback period for the up-front investment is equal to or less than the amount of time an investor might be reasonably willing to wait to recover the cost, using the value of undiscounted fuel savings as a metric. The payback periods used were in some cases longer than current averages but they were always shorter than the technical lifetime of individual assets.

developing countries, such as economic and social development, environmental sustainability, energy security and increasing prosperity.[10]

Energy efficiency reduces the amount of energy required to run our societies, regardless of geographic location. According to "The Energy Efficiency Market Report 2014", energy efficiency had the largest percentage improvement in the residential sector last year. The building sector has witnessed improvements in energy efficiency thanks to government support. This provides opportunities for manufacturers of energy-saving technology and related service providers, and the market is expected to keep growing worldwide.[11]

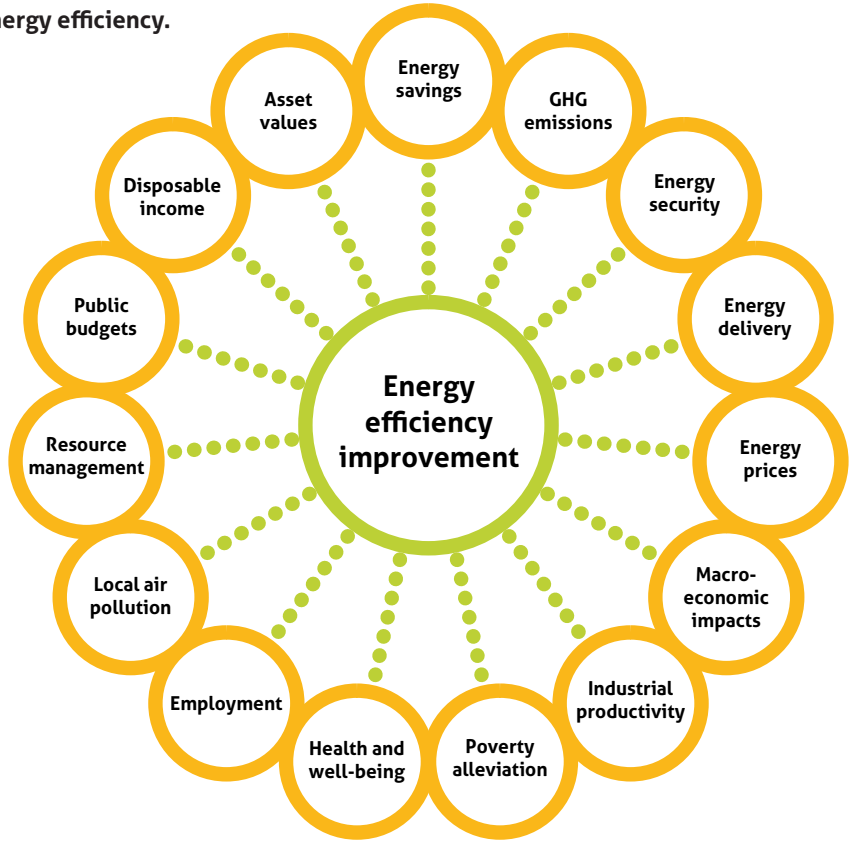
Improved data and analysis help stakeholders understand this new market. However, there is still a need for more and better information and methodologies to transform the market. Topten provides people with the best tools in order to facilitate a transformation towards energy efficiency under the umbrella of the multiple benefits approach, with a focus on the issues of energy security, economic growth, sustainable development and climate change mitigation, all of which benefit from improved energy efficiency.[12]

10 IEA. Capturing the Multiple Benefits of Energy Efficiency 2014, http://www.iea.org/Textbase/npsum/MultipleBenefits2014SUM.pdf

11 IEA, Energy Efficiency Market Report 2014 (EEMR 2014), OECD/IEA, Paris. http://www.iea.org/Textbase/npsum/EEMR2014SUM.pdf pages 3 and 7.

12 http://www.iea.org/bookshop/475-Capturing_the_Multiple_Benefits_of_Energy_Efficiency

Figure 3.
Benefits of energy efficiency.



Source:
http://www.iea.org/Textbase/npsum/MultipleBenefits2014SUM.pdf page 3

Note: This list is not exhaustive, but represents some of the most prominent benefits of energy efficiency identified to date. Source: Unless otherwise noted, all material in figures and tables in this chapter derives from IEA data and analysis.

Strategic Direction, Mission, Objectives, Outlook and Future Challenges

The overall mission of Topten is to mitigate climate change through market transformation towards energy efficient consumer products. Energy consumption in the construction, transport, domestic household and office equipment sectors will be reduced by making efficient products both the norm and the best choice, for consumers as well as for policy makers, large buyers, retailers, and manufacturers. Thus, the market share of these products will increase.

The strategic components to reach these objectives are:

- The creation of new and the maintenance of existing national Topten websites. These websites provide up-to-date information about the most energy efficient products currently available.. The products are selected and ranked on the basis of sound market research and impartial tests, also considering criteria specific to the respective national legislation and relevant conditions.In all countries where Topten is active, the focus lies on four main areas: building components, mobility, electronics, and home appliances. The product categories within these four areas can differ. In China, for example, rice cookers are relevant, whereas in Switzerland, coffee machines are listed.

- Cooperation with large public and private buyers, including retailers, who make energy savings one of their priorities;

- Advice to public procurers, including the development of concrete procurement tools, such as templates for tender documents (see the „Topten Pro“ section on www.topten.eu);

- Cooperation with the media and other multipliers, such as environmental and consumer NGOs, which relay the Topten message as part of their work;

- Communication activities targeting end consumers;

- A dialog with the manufacturing industry of consumer goods, especially on upcoming technological innovations with a focus on the demand and interest for energy saving products;

- The development of partnerships with key stakeholders, such as research institutes and global programs like CLASP and the upcoming GEF project “Establishing the Foundations of a Global Partnership to Accelerate the Market Transformation for Efficient Appliances and Equipment”;

- International cooperation across the Topten network to facilitate the understanding of the global appliance market and to enable the comparison, benchmarking, and the eventual harmonization of standards.

Topten 2.0

The market is changing quickly: supply and demand are dynamic forces generating continuous change, which requires rapid adaptive management measures. Hence, the Topten Board has drafted Topten 2.0 – a road map providing strategic direction for Topten to meet this challenge. Among others, Topten 2.0 addresses highly dynamic data -driven approaches to identify and promote energy efficient products. Most of the goals of Topten 2.0 are based on a new software, especially:

- Direct consumer access including information about where to order
- Rapid Renewal: better import/export facilities are needed
- Global database: better import/export facilities are needed

In addition, market visibility through intensified collaboration with retailers and manufacturers is planned, as well as improved global coordination and internal exchange within the Topten international network.

Topten activities around the globe

Top10 China

Key Results

The program progressed well in China during the year. Structurally, Top10 China is transforming from a SECO supported project to a sustainably organized and funded entity. "Renergy Technology Consulting Beijing LLC" was successfully launched in February. It is owned by the six Top10 China staff (Mr Zheng Tan, Ms Yi Shui, Mr Hu Bo, Ms Huang Luting, Ms Zhao Feiyan, and Ms Wang Tingting).

As owners, staff will now actively participate in the company's management and operations. The organization is called the Energy Efficiency Competence Center (EECC) and provides advice to consumers, industry, retailers, and government. Its scope has thereby expanded from energy efficiency for household and commercial use to also include products for industrial use, particularly regarding electrical motor systems.

To ensure sustainable operations, expanding to the industrial sector is a key step. In early 2014, Top10 China began negotiations with MIIT and its implementing agency CIECCPA about a cooperation to improve the efficiency of electrical motors. MIIT showed great interest in the Topmotors project(see below) as a contribution to its three-year national program *China Motor Efficiency Upgrading Program* (2013–2015). In January, Top10 China signed the Memorandum of Understanding (MoU) with CIECCPA.

The collaboration comprises three activities: a) a first pilot project of Topmotors China in Zhenjiang, where MIIT officials attended the kick-off meeting in early July; b) MIIT held the "China Motor Energy Efficiency Policy Workshop" together with Top10 China, also in July. c) MIIT will support the "China Motor Summit 2015" in Beijing. This is a very good start and a solid base for future replication of the pilot experiences across China, as well as for a smooth continuation of the policy dialogue.

"Topmotors" was officially launched in Zhenjiang, Jiangsu province, on July 4. It includes three key components: a) a "Motor Check" in collaboration with MIIT and the city of Zhenjiang; b) preparations for a Motor Summit China in 2015; c) the establishment of a financial incentive program for electric motor systems in China based on experiences in Switzerland (ProKilowatt EASY) and IEA 4E EMSA.

Furthermore, ESCOs will provide financial support and equipment for motor system modification for the pilot companies which decide to optimize their existing system to save energy. All participating parties are to provide and share information in this pilot program. The government will be responsible for the organization and coordination as well as providing financial and policy support to the main energy-using factories willing to change. As an independent third party, Top10 China will introduce international best practices in technology and management to explore the energy savings potential of motor systems within the pilot companies and train their energy management personnel.

Motor systems are responsible for 46 per cent of worldwide electricity consumption; in China it is 54 per cent. Motors account for approximately 70 per cent of industrial electricity use. Savings potentials lie between 10–30 per cent globally.[13]

13 For further details, please see the recently launched „Policy Guidelines for Electric Motor Systems" by the IEA 4E EMSA http://www.motorsystems.org/files/otherfiles/0000/0173/policy_guidelines_oct2014.pdf

Participants at the "Topmotors China Pilot Program" launch in Zhenjiang on July 4.

Topten activities around the globe

After the launch ceremony, some of the participants visited factories in Zhenjiang New Area to check their motor systems.

During the reporting period, Top10 China continued its efforts to expand its policy dialogue with stakeholders. More than 130 high-level representatives from Chinese governmental organizations, NGOs, foundations, embassies, retailers, and suppliers were approached in person.

Three MoU were signed with 1) CIECCPA promoting Topmotors and the China Motor Summit 2015; 2) IISD on green procurement; and 3) The Dragon Design Foundation, founder of World Green Design Organization, promoting green design and Best Available Technology (BAT).

Top10 China views procurement as one of the most important areas to promote market transformation towards highly energy efficient products. Therefore, Top10 China designed a three-year project plan (2013–1015) to influence China's public and private procurement.

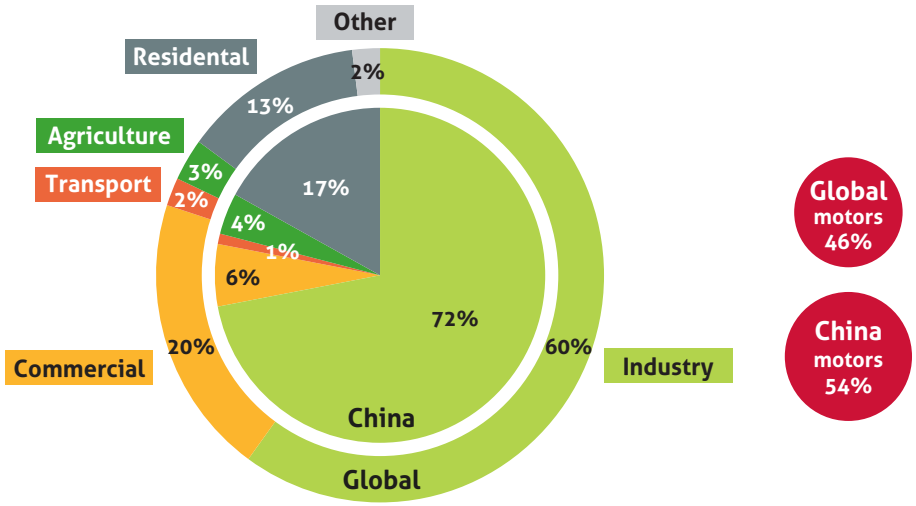
Together with its partners, including China Government Procurement Magazine, Ren Min University and Development Research Center of the State Council, Top10 China analyzed the government procurement practices in typical cities and areas in China in order to get a clear overview of current practices. The "Status Report of China's Green Government Procurement" was published in April and distributed to relevant stakeholders. ICLEI cited the findings of this report in its official publication.

In addition, Top10 China continued to strengthen its cooperation with key players in the green procurement sector, such as CQC, CGPA, CGPM, and IISD. Based on studies on international experiences and domestic practice, CQC developed a China GPP map for MOF and included Top10 China suggestions. CQC has optimized the procurement lists to make it easier for users to find energy efficient products, mainly by switching to electronic product lists rather than hard copy. These lists are continuously updated. After several discussions, in June, CQC accepted the Top10 China concept of life-cycle cost and decided to carry out research on life-cycle cost assessment methodologies and tools together with Top10 China.

Top10 China also worked closely with IISD and attended an IISD workshop on "Advancing Low-Carbon Competitiveness of China's Economic and Technological Development Zones" held in January. After signing the MoU, a series of meetings were held on green procurement, covering policy and organizational framework as well as procurement lists. Top10 China provided insights, energy efficiency data for certain products, and recommendations on a calculation model. IISD and Top10 China will jointly conduct a policy dialogue in 2015.

Figure 4:
Global electricity demand across sectors.

Source: IEA World Energy Statistics, 2009; A+B International, 2012



Topten activities around the globe

bigEE – "bridging the information gap on Energy Efficiency in buildings" – is an international project funded by the German government and coordinated by the Wuppertal Institute. It has identified Top10 China as a major and reliable source of information on efficient appliances in China. A contract was signed and Top10 China provided market data on BAT products in the Chinese household appliances market. The project collaboration successfully ended in December.

To conclude, Top10 China developed a two-year project called "Green Taxi Initiative in Beijing" together with CBEEX and VECC, which aims to contribute to the implementation of the „Beijing Clean Air Action Plan (2013–2017)." This will be done by replacing old, inefficient and high-emission taxis as well as by providing policy recommendations to the Beijing municipal government. A project proposal and budget already exist. At a meeting in November, possible funders and the refinement of the proposal were discussed.

Communications highlights

The on-product activity with the retailer GOME continued: Top10 stickers highlight the most energy efficient products in 300 GOME stores throughout the country. A revised version of the sticker was introduced (see below). Influenced by this sticker, the idea of adding a QR code, which facilitates market monitoring and provides user-friendly information like how-to-select-and-use recommendations to end consumers, was adopted for the official China energy label.

In January, Top10 China started providing consumers with recommendations on energy efficient products through their smart phones, via wechat. Also, the Top10 China newsletter was distributed.

Top10 China further provided policy recommendations on standards setting and subsidy programs, which were adopted by the Chinese program for super-efficient appliances. In addition, as part of the global strategic partnership with WWF, Top10 China started delivering technical expertise to the WWF-initiated program Climate Solver (www.climatesolver.org). This climate innovations portal aims to strengthen the development and use of technologies that can dramatically reduce carbon-dioxide emissions or increase access to energy around the globe.

Top10 China Newsletter

top10.cn

瑞士 Top10 节能中心 新闻简报

New Logo since 2014
Top10 启用 2014 全新标识

New Top10 logo was implemented since January 2014. This marks while keeping energy efficiency product list as core business, Top10 has expanded to a wider area including low-carbon cities and efficiency motors.

从 2014 年起，Top10 启用全新 logo。新 logo 采用蓝底白字，去掉了以往的"节能上品"字样，这也标志着在推动消费类终端用能产品能效提升之外，Top10 的工作范围也延伸到电机系统节能、绿色采购及低碳城市等其它节能领域。

Cooperation with Zhenjiang New Eco Zone
与镇江新区合作顺利进展

Since 2012, Zhengjiang New Eco Zone and Top10 started the dialogue and discussion in variable fields including industry energy saving, green procurement, sustainable cities. This February, Dr. Eric Bush, Topten International President lead a group of international experts visited Zhengjiang, confirmed the cooperation in industry efficiency, especially in motor efficiency improvement.

自 2012 年 Top10 与镇江新区建立合作伙伴关系以来，双方就工业节能、绿色采购、城市可持续发展等多领域开展对话合作。今年 2 月，Topten 国际集团总裁 Eric Bush 博士与国际专家们访问镇江新区，决定在工业能效、尤其是电机系统能效提升方面重点开展合作。

Online Retailer links now available
网站新添零售商购买链接

Now consumers will find it's easier to make a purchase after checking energy efficient appliances on Top10 website. A few online retailer links are now available under Top10 lists.

现在开始，消费者在 Top10 网站上查询节能产品信息后，可以直接点击名单下的网络零售商链接在线购买。每个产品提供多个零售商链接可供选择。

3rd version GOME sticker ready to go
第三期零售商贴标即将启动

The 3rd version of in-store energy saving stickers will be available on 300 GOME flagship stores around China from middle of June until end of 2014. The new version had some minor changes including new colour and an added-up QR code.

第三期零售店内标签已经设计完成，6 月中旬将在全国 300 家国美旗舰店中投放使用。新标签采用 Top10 Logo 的深蓝色作为底色，并首次添加了二维码，方便消费者扫码查询。

Top10 China newsletter

The World Green Design Forum 2014 Yangzhou Summit was held 11–12 June, in Yangzhou, Jiangsu Province with the theme "Green design boosts global sustainable development". Top10 China staff attended as a member of the jury. Top10's professionalism and reputation were well recognized, and its concept and methodologies promoting energy efficiency were well received by the stakeholders.

Top10 China was invited to attend the 7th annual meeting of China Air-Conditioner Industry conference, which was held on 31 October in

top left corner – the new Top10 sticker

Topten activities around the globe

Hu Bo presenting at the 7th annual meeting of China Air-conditioner Industry, held on 31 October in Beijing

Zheng Tan presenting at the Motor Summit 2014, 8 October, in Zurich.

Beijing. Hu Bo, Technical Manager of Top10 China, presented Top10 China market research on air conditioners. Zheng Tan, Director of Top10 China, attended the 2014 Energy-Saving, Low-Carbon Consumption Conference in Guilin, Guangxi province, and introduced Top10 China to around 200 participants. Manufactures, such as Changhong (televisions) and Joyoung (induction cookers), whose models feature on Top10 China product lists, showed interest in conformative testing of these models.

In 2014, the number of website visits on www.top10.cn dropped somewhat. This is due to the fact that Top10 China invested less in search engines than in the previous year. The total number of visits from January to December was 838,500.

Thanks to wechat (similar to Facebook), consumers have been able to get recommendations on energy efficient products easily through their smart phones since 24 January. The Top10 China social media platform on 'Weibo' (similar to twitter) now has 19,141 followers who receive Top10 China recommendations every day.

Since April, some online retailer links have been available under Top10 China product lists on the website. These links direct consumers to retailers' online shops facilitating an immediate purchase of BAT products. TIG is developing new software to improve such so called referral purchases. This is part of the Topten 2.0 effort to adapt Topten to changing consumer purchasing behavior.

"We find the work of Top10 China extremely valuable. As a close partner, we benefit from their good network, expertise, and dynamic progress on various issues."

Ms Yu Xiaowen
IISD

"As a third-party organization, Top10 China works effectively on energy efficiency in China, which is necessary and helpful for policy implementation. In addition, it educates the public on energy efficiency. I hope its impact keeps growing in 2015."

Mr Xu Dingming
The State Council

"In the last year, Top10 China successfully expanded its scope from household products to industrial motors. This is a very encouraging and significant achievement."

Mr Shen Longhai
former Director General of Energy Administration of the State Economic Commission

"In 2014, Top10 China worked on the ground and launched the Topmotors program in China, in which it conducted comprehensive surveys and trainings, provided a motor-system-check audit for factories, and effectively promoted motor system efficiency. We hope in 2015, Top10 China will continue working with partners to scale up their best practices to help enterprises and the government save energy in a systematic way."

Mr Hao Lishun
MIIT

"In July 2014, collaboration on Topmotors pilot between Zhenjiang New Area government and Top10 China was officially launched. We are impressed by the professionalism of the international and Chinese experts from the Topmotors team, and by their dedication to the cause of energy saving and environmental protection. We are looking forward to a long term collaboration with Topten in wider areas in the future!"

Mr Gui Qiliang
Deputy Secretary of Municipal Government of Zhenjiang City

TopTen USA

Key results

Entering 2014, TopTen USA worked with 14 utilities in four states (California, Connecticut, Massachusetts, and Rhode Island), reaching an estimated nine million households through energy efficiency program outreach and promotions.

The website www.toptenusa.org attracted close to 30,000 visitors a month, and the Google AdWords program, thanks to a grant of advertising space from Google, served up TopTen ads promoting the purchase of super-efficient products 700,000 times each month. In the states of Connecticut, Massachusetts, and Rhode Island, TopTen's product rankings serve as one of the qualifying factors for the highest tier of energy efficiency rebates.

Leading efficiency programs in the northeast part of the country successfully increased program savings using the TopTen USA products list and web-based consumer education resources. The Connecticut statewide implementation of TopTen USA significantly increased annual program savings through a coordinated promotion with retailers, including incentives for products on the TopTen USA list.

Changing business environment

During the year, TopTen USA helped spur innovation and interest in energy efficiency within both the government and the commercial sector. Energy Star launched its "Most Efficient" pilot just as TopTen launched its website, and the project has become an ongoing Energy Star initiative. While the "Most Efficient" program has yet to attract a lot attention from consumers and manufacturers, it provides energy efficiency programs with a no-cost, non-commercial tier of energy efficient products, partly obviating TopTen's original value proposition.

Recently, Energy Star officials announced their intention to create a much more consumer-friendly website, incorporating some of the shopping and rebate features that have set TopTen apart. This is a recognition of TopTen's pioneering efforts to connect consumers to the most energy efficient products by simplifying the process and creating a one-stop online resource to meet growing consumer needs.

For-profit companies have also entered the marketplace, notably Enervee, which is now providing in-kind service for TopTen USA. American Efficient also offers services to distinguish and promote the most efficient products. This demonstrates that investors see the value in providing services similar to TopTen, both validating the TopTen concept and reducing the market need for TopTen.

The utility industry is also undergoing fundamental change, which will have an impact on the future of energy efficiency programs: the distributed power generation will change their business model, and the smart grid will change their ability to price and influence the demand. Leading utilities are now building on their efficiency service platforms to offer an even broader range of valuable services to manage energy use, using big data to understand their customer needs and online resources to connect their customers to targeted services.

In the end, TopTen USA has succeeded in driving the market towards more energy efficient products, but not in the way we had imagined. Rather than becoming the leading product online resource for consumers, policy makers and utilities, TopTen USA has instead spurred the development and refinement of other resources that we hope will meet that need in the future.

The value of TopTen USA as a stand-alone tool has been surpassed by real-time data analysis coupled with direct online targeted customer promotions which use closed loop marketing techniques that can readily provide baseline and market response data to document the impacts of product promotions. Recognizing this, the TopTen USA Board decided to discontinue TopTen USA as an organization after 2014.

In summary, TopTen USA was ahead of its time. It has inspired others with its experience and resources to develop a highly dynamic data-driven approach to identify and promote energy efficient products. Thus, the TopTen USA model, which was both logical and highly promising when it was developed, does not meet the current needs of the quickly changing consumer and utility services market.

The Topten USA Board looks forward to the success of the other emerging approaches to spur a quantum leap in the market introduction and adoption of high efficiency products in the United States and is proud to have helped to pioneer this effort.

Topten in Europe

"Euro-Topten Max"and "Best of Europe"

Key results

The policy impacts of Topten in Europe are usually the result of several years of work and involve constant market analysis to select and show the BAT of a product category and providing input to the policy process from beginning to end. The Topten product lists and policy recommendations empower stakeholders to use this BAT evidence in reports and discussions. Topten information thus influences the entire policy process, as better data is at hand.

In 2014, Topten engaged in the following policy activities:

- It provided input to the policy process for commercial display refrigeration using online policy recommendations and attending a consultation forum meeting in Brussels. Topten staff stressed the importance of appropriately ambitious energy label classes and suggested a symbol on the label for climate-friendly refrigerants. Thanks to the Topten product lists, the BAT was recognized in the discussions from the beginning.
- At a meeting aiming at improving the EU -Chinese dialogue on Ecodesign, Topten staff outlined the role of Topten by explaining how Topten engages in this policy process.
- Topten staff shared information with the Joint Research Centre experts of the Science Hub of the European Commission, working to revise the label criteria for displays, such as televisions and monitors. Data from the Topten television market monitoring report allowed the experts and stakeholders to have informed discussions about the stringency of the proposed efficiency criteria. A decision on the adoption of the Ecodesign and energy labelling regulations is pending.
- Topten staff attended the Chillventa fair in Nürnberg, Germany, with a focus on the benefits of the Ecodesign and energy label. During the fair, it became clear that both civil society organizations and the industry share the wish for clear rules which would create a level playing field and allow for effective market surveillance.
- EU policy recommendations on electronic displays were updated online to comment on the latest draft regulations. Topten suggested a calculation formula for the energy label in line with what is suggested for Ecodesign.

In 2014, the website www.topten.eu[14] counted 56,217 visits, an increase of 25 per cent compared to 2013. This increase may be thanks to the broad range of analyses and activities carried out during the year, such as the "Television Market Monitoring Report", the "Product Registration Discussion Paper", and the recommendations for professional cold appliances.

14 Funded by the European Climate Foundation

Topten activities around the globe

In addition, new product lists were added for notebooks and washer-dryers. CFL lists were removed in October because they are no longer among the best performing lamps. The other product lists and selection criteria were kept up-to-date based on analysis of product-specific markets and label criteria in force.

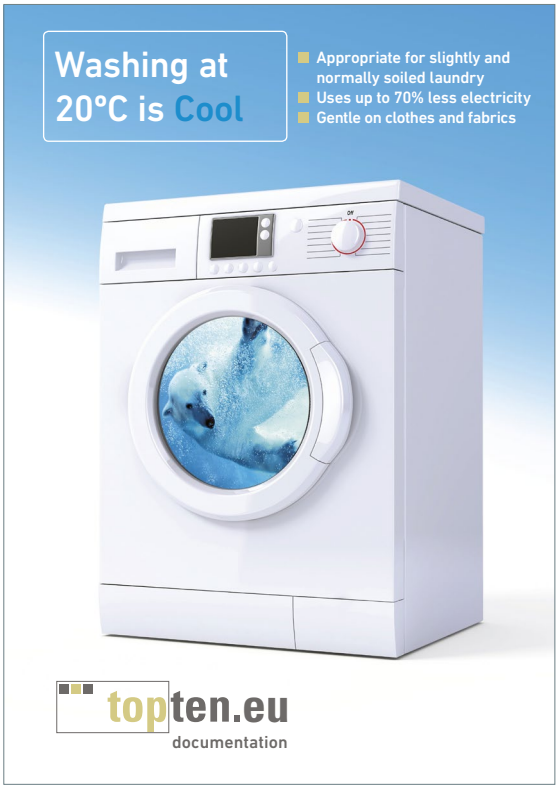
In Switzerland, the website www.topten.ch has become a reference for energy efficiency. Utilities such as ewz and ECC in Zurich, ewb and BKW in Berne, iwb in Basel, and Romande Energie us the site for their energy savings programs; environmental organizations such as WWF Switzerland use them for campaigns; R&D departments of manufacturers and standards setting bodies – they all use the Topten concepts, criteria and recommendations. The website also serves as an information platform for energy consulting agencies, media, and sales personnel.

Topten works with a whole range of partners, including its founders ewz, S.A.F.E, WWF Switzerland, and the consumer magazine Saldo as well as its main partners Topten International, Romande Energie, EKZ, and BKW. It also stewards relations with the public and private sectors, electricity providers, media, NGOs, and the biggest retailers in the country.

In addition, Topten Switzerland benefits from working closely with test institutes, including the global VDE Testing and Certification Institute. Topten also benefits from standardized laboratory and practical field measurements of the test center SALT.

Between February and December, the number of overall categories on all Euro-Topten Max websites increased from 239 to 255 while the number of subcategories was reduced from 577 to 568. Though criteria were tightened for some categories, the number of qualifying products and services increased from 11,000 to 12,857, especially regarding household appliances, TVs, and LED lamps.

To mark the tenth anniversary of Topten in France, an event was organised to compare how the market for appliances changed over the last decade. The event included five speakers with a



Topten consumer advice for washing at 20 degrees, and recommendations for professional procurement of energy efficient refrigerators

http://www.topten.eu/uploads/File/Professional/Other%20Pro%20Guidelines/Flyer_Coldwash_2014.pdf and
http://www.topten.eu/uploads/File/Professional/Other%20Pro%20Guidelines/Refrigeration_Procurement_Topten_English.pdf

The Topten France consumer guide distributed at the event

well-known energy expert as moderator. Presentations included an analysis of the Topten data over the last ten years, a presentation by the lighting manufacturer Union about the LED revolution, and a presentation about market surveillance from the environmental organization CLER.

Conclusions from the event:

- Looking back at the Topten products lists archive for white goods, we can clearly see an energy efficiency improvement of between 30 and 60 per cent of the best products in the last ten years. However, the improvement pace slowed after 2012, which may indicate that the energy label starts to become obsolete and that manufacturers need new regulations to be able to push their best products.
- Today's average models sold in shops correspond to the best models' efficiency promoted by Topten five years ago, showing that the market has improved. However, there are still important saving potentials as the models promoted today by Topten are still far more efficient than the average products on the market.
- Topten most energy efficient models are generally more expensive, but the investment is also generally paid back by the savings in electricity and /or water.

Communications highlights

- **April:** "Topten Focus" provided policy recommendations for professional storage refrigerators. The input was taken up by stakeholders to suggest changes to the draft energy label for such refrigerators.
- **June:** "Topten Focus" revealed a new heat pump dishwasher which exceeds the A+++ threshold by 40 per cent.
- **July:** The Television Market Monitoring Report was published. Graphs from the report were later included in the European Commission's explanatory notes accompanying the draft of the revised regulations for electronic displays, as well as the entire 'market' chapter of a CLASP report, which supports the revision based on the Topten report. Several product policy stakeholders asked if Topten had similar data for other product categories.
- **December:** All eight Topten abstracts submitted to the EEDAL'15 programme committee were accepted, see the Research and Publications section on page 23.

"ECOS is a European level, non-profit umbrella organisation working to defend environmental interests in the development of standards and product policies. Topten provides us with a solid evidence base concerning BAT for various products on the market, as well as product specific technical expertise. Both aspects are crucial for our work on Ecodesign and energy labelling measures."

Mr Stamatis Sivitos

Senior Policy Officer EU Ecodesign and Energy Labelling Policies, ECOS

Topten in Other Countries

India

During 2014, preparations for the launch of a national Topten program continued. A feasibility study has identified the key stakeholders, potential partners and priority products. In collaboration with Nitin Pandit, the CEO of WRI India, a Topten India Business Model was prepared.

The model contains a first phase to build up Topten India as a brand in cooperation with the Bureau of Energy Efficiency of the Ministry of Power, WWF India, and other NGOs. In a second phase this Topten brand will be used together with the national Energy Efficiency Services Limited (EESL) program to collect minor fees from online sales, credit card sales, Demand Side Management (DSM) procurement programs, consumer loan sales, and private Corporate Social Responsibility (CSR) programs. With this novel funding system for Topten, the plan is to develop and expand in India from 2015 to 2020.

Latin America

Topten worked hard during 2014 to introduce a market transformation scheme for consumer goods in the region. Since the workshop in São Paolo in March 2013, the relationship with the national partners of the first phase countries – Chile, Argentina, and Mexico – has been strengthened. Fundraising efforts with international, national, and regional institutions were also pursued.

A funding proposal was submitted to the International Climate Initiative of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety. The proposal focused on developing Topten in Chile, Argentina and Mexico from 2015 till 2019 (4 years). The proposal was not approved.

In December, a meeting was held with Thierry Buchs (SECO representative who attended the São Paolo workshop), now Head of the Trade and Promotion Division at SECO headquarters. The purpose of the meeting was to update him on the status of Topten in Latin America. SECO is still

The internal Topten website for Latin America.

interested in following the progress and offered to provide us with contacts within funding institutions and embassies.

In **Chile**, the Topten partner Fundación Chile (FC) submitted a proposal to the Ministry of Energy for the development of Topten in Chile. The proposal was approved, and Topten will be launched in Chile next year. Additional funding (cash or in-kind) was also provided by WWF Switzerland, WWF Chile, FC, and TIS. A training workshop will take place in Santiago in January 2015 to initiate the start-up phase of Topten Chile. Representatives from Argentina, Mexico and Peru will also be invited to the training.

In **Mexico**, Topten, with the support of WWF Mexico, submitted a funding proposal on energy efficiency opportunities of electric motor systems to the International Copper Association in June. The proposal was rejected. However, WWF Switzerland provided funding for the preparations for a national Topten program in the country, including the study "GHG Mitigation Potential of Energy Efficient Motors at Water and Wastewater Utilities in Mexico".

In parallel, WWF Mexico had meetings with national actors including CONUEE, FIDE, and SENER. In order to obtain potential funding from the Inter-American Development Bank, a national government partner is required. SENER might be the most likely candidate for this.

In **Argentina**, the Topten partner Fundación Vida Silvestre Argentina (FVSA, WWF Associate) recently submitted a funding proposal to the Ministry of Energy. The decision is still pending. In addition, funding has been provided by WWF Switzerland.

In **Brazil**, Topten continues the search for funds together with WWF Brazil and Topten Portugal.

In **Peru**, the UNDP/GEF funded project "2011–2015 Energy Efficiency Standards and Labels in Peru" made progress. It is implemented by the Ministry of Energy and Mines. There might be a possibility for synergy development with Topten in the outreach and promotion activities within this project.

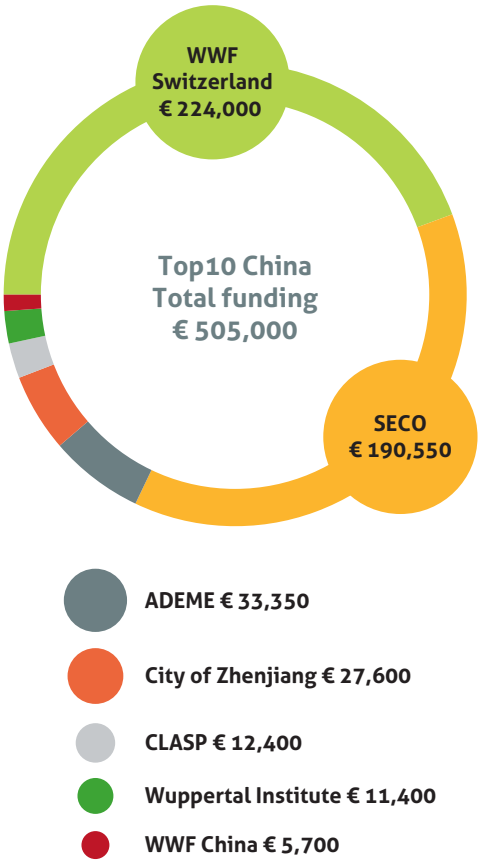
In **Colombia**, a similar UNDP/GEF funded project should have launched an energy efficiency label this year, but is behind schedule. The implementing body is the Ministry of Energy and Mines. This project foresees a ranking list of efficient appliances of its own. Therefore, the government is not interested in initiating Topten in Colombia for the time being.

Donors and Partners

For Top10 China, total funding was € 505,000.

In addition, in-kind contributions included electronic media space, government research data, and TIS and WWF staff time.

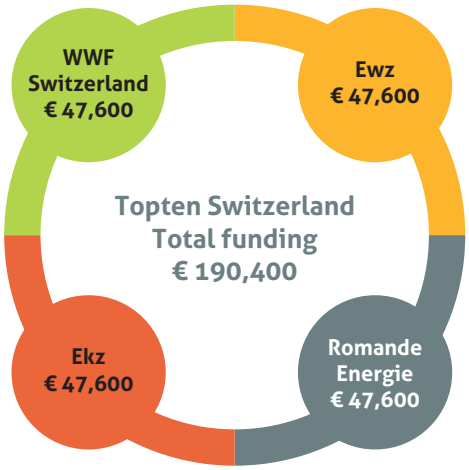
In early October, a project proposal was submitted to the MAVA Foundation. The proposal covers sustainable procurement, policy advice, testing, and awareness raising. TIS, Top10 China and WWF China are partners in this proposal. The estimated budget is a total of € 562,000 for the coming three years. The approval is pending.



TopTen USA is funded by a large foundation, by utilities, NGOs, and an anonymous private donor. Google contributes in-kind contributions equivalent to € 91,000 in advertising.

In Europe, Euro Topten Max is funded to 75 per cent by the European Commission to the amount of € 1.12 million over a three year period, 2012–2014. In addition, various entities such as ministries, energy agencies, utilities, NGOs, and an insurance company provided funding at the national level. The best "Best of Europe", including the regional platform www.topten.eu, was supported by the European Climate Foundation with € 120,000.

Topten Switzerland obtained funds from WWF Switzerland, ewz, ekz, and Romande Energie:



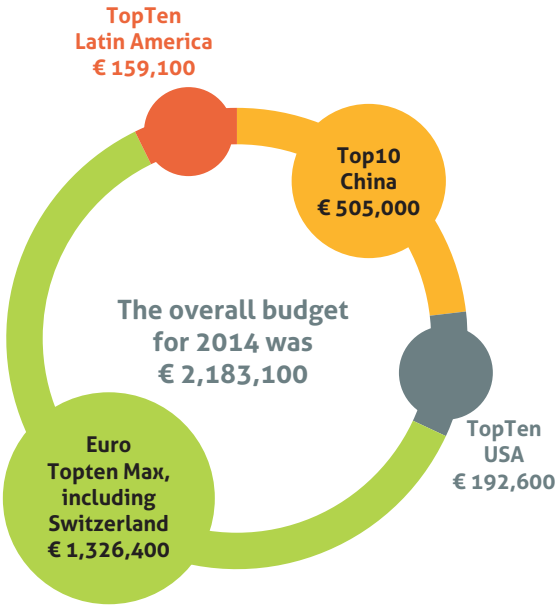
In Latin America, the Chilean Ministry of Energy provided € 26,400 for the launch of Topten in Chile in 2015. In addition, WWF Switzerland contributed € 9,400 to Chile, € 76,500 to Mexico and € 46,800 to Argentina for the establishment of the respective national Topten programs. Furthermore, in-kind contributions were provided by TIS and FC.

Topten had roughly 250 partnerships with various entities, such as research institutions, power utilities, and NGOs. They support Topten in its basic research activities and in communications. The partners also assist in keeping the information on the Topten websites up-to-date and accurate.

During the year, Topten developed a new partnership with the GEF Global Partnership Program on efficient appliances and equipment, where Topten wil be one of the implementing partners. The program has an initial duration of 18 months and will be implemented in collaboration with other partners such as CLASP, NRDC, and ICA. The total budget is € 1.2 million over 18 months.

Facts and Figures

The rough overall budget for 2014 was € 2.18 million, shared among China, USA, Europe, and Latin America (in €):



In addition, various stakeholders and partners made considerable in-kind contributions.

The total number of Topten websites was 22: 20 national websites plus two overview websites (http://www.topten.info) and "Best of Europe", http://www.topten.eu/). Together, these websites list 331 product categories (sub-categories not included). They recorded around 3.3 million visits throughout the year.

With Topten online in the leading markets China, USA, and Europe, roughly two billion consumers have access to information about the most energy efficient products currently available in these markets.

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Research and Publications

Abstracts and Links for EEDAL Papers 2014/15

1. Cold wash – tests on the washing performance

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Relevant link: http://www.topten.eu/uploads/File/Professional/Other%20Pro%20Guidelines/Flyer_Coldwash_2014.pdf

Heating up cold tap water to 30°C, 40°C, 60°C or even 90°/95°C uses the lion's share of washing machines' electricity consumption. A cycle at 20°C uses 70% less electricity compared to one at 60°C. Thus, "cold wash" holds a tremendous energy savings potential, which cannot be reached as easily by any other measure in the whole washing process.

Washing machines offering a cycle at 20°C – as required by the EU Ecodesign Regulation 1015/2010 – and a variety of detergents designed for the temperature range from 15°/20°C up to 60°/90°C are both available on the European market. Nevertheless, most consumers still do not switch washing temperatures down to 15°/20°C in their everyday lives mainly because of prejudices, but also because of traditions and habits (Josephy et al. 2013).

Discussions on "cold wash" – especially on the washing performance – are always controversial and very emotional. To contribute to the debate with impartial and scientific facts, Topten (www.Topten.eu) is currently carrying out 24 tests in collaboration with the VDE Testing and Certification Institute and the consumer organization Stiftung Warentest. These tests strive for reliable results on the washing performance for slightly and normally soiled laundry, the most common laundry type.

The tests compare the washing performance at 20°C and at 40°C. At each temperature, factors influencing the washing performance are systematically investigated, such as detergents (3 products), washing machines (3 models), loading (full and half) and pre-treatment of stains (yes and no, each in combination with 2 washing machines and 2 detergents).

The paper will present and discuss the test results and conclude with recommendations for various stakeholders like EU policy makers, retailers, producers and NGOs.

2. Heat pump tumble driers: MEPS in Switzerland, market development in Europe, market introduction in North America

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Electric laundry drying is becoming increasingly popular in European households. This trend can lead to a significant increase in laundry energy consumption. Heat pump (HP) driers use only 50% of the energy a conventional condenser drier uses. Promoting efficient driers is necessary in order to limit the expected increase in energy consumption due to drying in EU households.

While the sales share of HP driers in the EU varies between countries, Switzerland is a step ahead: since January 2012, only HP driers are allowed on the Swiss market.

The EU has also introduced measures to promote efficient driers: in June 2013, the new energy label for driers was introduced, and since November 2013, the Ecodesign regulation has banned the worst performing driers from the market. While all HP driers were in class A with the old energy label, the new label allows to distinguish between more and less efficient HP driers. Efficiency differences between HP driers already amount to more than 100%, and a differentiation is needed. Classes A to A+++ are reserved for HP driers; best driers already reach the A+++ class.

Topten is in contact with manufacturers to adjust their efficiency declaration in accordance with the new energy label. This paper will contain an overview of the high efficiency drier market according to the new energy label. This market assessment will answer interesting questions including the following: Has the top end of the labelling scale been designed appropriately? Will the label continue to exert an incentive on the market to develop more efficient driers? Or is the A+++ class too easy to reach, and will the label need to be revised again soon? In addition, the paper will show the development of share of efficiency classes for tumble driers in Europe, total figures for the years 2004 to 2014.

The market for electric tumble driers in North America is now about to experience substantial energy efficiency improvements as well. In 2013 and 2014, the US Environmental Protection Agency issued Energy Star Emerging Technology awards for advanced clothes dryers. The EPA also announced that it will introduce an energy efficiency recognition label for clothes dryers starting in 2015. In 2014, the US Department of Energy also issue a revised test procedure for clothes dryers that better represents current technology.

There is already some indication that Canadian and US energy efficient clothes dryers will differ from their European counterparts. At least some of the first generation of North American heat pump clothes driers will also include an electric resistance heating element and will be able to offer users a choice between a more energy efficient, longer drying cycle and a less efficient, faster cycle. This reflects an adaptation of the heat pump drier technology to the fact that until now, almost all North American dryers have been vented models operating at relatively high temperatures and drying a load of laundry much more quickly than European condensing clothes driers.

3. Top10 Sticker: an intuitive purchase guide for energy efficient products in China

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Co-author: ZHAO Feiyan, Top10 China

In the course of the past ten years, the Chinese government has implemented a mandatory energy label covering 28 product categories and and also introduced financial incentive programs to encourage consumers to purchase energy efficient products. But arbitrary information, such as the Energy Efficiency Index (EEI), and technical terms and jargon caused people to turn away and sometimes even confused them regarding energy consumption issues.

This paper introduces an intuitive purchase guide: the Top10 Sticker, which was developed by Top10 China and has been deployed in 300 flagship stores of China's biggest appliances retailer chain (GOME) in megacities. The design and revision of this sticker are based on our field study carried out in the last two years. Factors such as EE readability, life cycle cost, reasonable usage recommendations etc. are considered to make it a more intuitive tool compared to China's mandatory energy label. A survey with more than 10,000 consumers was recently carried out to better understand Chinese consumers' decision-making process. The paper introduces the key findings.

These stickers are updated every six months to reflect market developments. Due to the increased market share of big appliances in China, sufficiency issues are tackled and communicated with consumers in an interface-friendly way. At the same time, training programs were designed and in-store salesmen were trained to explain the sticker and answer consumers' questions.

This paper concludes with suggestions to improve the Chinese mandatory energy label and with options to encourage retailers to sell EE products and influence consumers to buy and use them reasonably.

4. Household refrigerators: monitoring efficiency changes in Europe and Australia over the last 10 years

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Sales data gathered by a commercial market monitoring agency includes information on energy consumption, size and price of refrigerators, which allows detailed tracking of trends in the household refrigerator markets in Australia and Europe for a period of more than ten years.

For Europe, GfK sales data from 2004–2014 will be analyzed. Additionally, sales data for selected European countries (F, CH) can provide information regarding differences between national markets. For Australia, more detailed sales data is available over a much longer time period (1993–2014), so as to provide a useful comparison to European trends. Thanks to mandatory product registration in Australia, the sales information at a model level can be complemented with comprehensive product details.

The paper will:

- Analyze market developments regarding trends in energy efficiency, absolute energy consumption, size and price;
- Examine the impact and timing of regional policies, including MEPS and energy labelling;
- Propose explanations for development patterns;
- Compare and contrast the Australian and European trends and context, allowing the two regions to learn from each other;
- Make recommendations regarding MEPS and energy labeling, as well as market monitoring and product registration.

Sales information up to 2014 will guarantee that the analysis is up-to-date. This analysis will provide important lessons for revisions of the Ecodesign and Energy Label regulations for household refrigerators in Europe.

5. Lessons from a decade of efficient product market analysis

Edouard Toulouse, independent consultant | edouard.toulouse@netcourrier.com

In the last ten years, Topten website buying guides have been developed in a growing number of countries, notably in the EU. These online guides provide consumers with precise information about the most energy efficient and best performing products they can find in shops, including a wide range of categories (cold appliances, washing machines, consumer electronics, lamps, etc.). The Topten international network has been successfully expanded thanks to the support from various private and public bodies, including the EU Intelligent Energy Europe program.

The first Topten websites launched about or more than 10 years ago offer a wealth of experience in the way the market for efficient products has evolved, in an interesting context of dramatic changes brought about both by new technologies (e.g. LEDs) and regulatory decisions (e.g. the adoption of Ecodesign and Energy labelling measures in the EU).

Some of the European Topten teams have decided to look back for the first time and provide insightful analysis based on the detailed data they have gathered year for year. The analysis makes it possible to answer questions such as:

- How has the efficiency of the best products evolved over the years?
- In which categories have the efficiency improvements been the most substantial?
- How has the introduction of more efficient technologies been different from one country to another?

In some cases, price evolutions have also been examined to assess whether the affordability of top efficient products remains as critical an issue as it was ten years ago. Lessons can also be learned on the trends in other important product characteristics (size, capacity, etc.), as well as on the adequacy of regulatory measures such as the levels of the EU energy labelling classes adopted in the last ten years.

6. Luminaire efficiency: what mandatory and voluntary labels achieve, and what they should achieve in the future

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The EU's energy label for household luminaires is relatively young; 2014/2015 is the second retail season it has been available for consumers. This label differs from all other mandatory EU energy labels in that it neither involves the product's energy consumption nor light output. Instead, it indicates the energy efficiency class of included light sources or available alternatives. Since 2009, the energy efficiency project Topten has collaborated with Switzerland's two biggest retailers, Coop and Migros, as well as other suppliers and manufacturers to label the best household luminaires in shops and catalogues. The labelling is based on measured luminaire efficiency. Measuring light output and power for hundreds of luminaires, efficiencies between 10–90 lumens per watt (lm/W) have been recorded.

A much larger data set from Relux is based on manufacturers' declarations and contains 200,000 tertiary sector luminaires (for offices etc.). It describes an even greater distribution of efficiency, from 5–120 lm/W.

Household LED luminaires with non-exchangeable light sources are popular and challenge us to think differently about luminaires. Consumers can no longer choose between bulbs and thereby influence the lifetime and efficiency of their lighting. It can be argued that those luminaires actually function more like a lamp. Declarations on packaging for the European market deviate markedly from measured values; this is mainly because they concern the "naked" in-built LED modules rather than the whole product. Tests show that 20–70% of the declared luminous flux is lost in the luminaires' shades and diffusors. Measured power is in most cases 15–60% higher than stated on the packaging.

This paper discusses experiences with the Topten and Minergie voluntary labels based on measured luminaire efficiency. It also provides recommendations for adapting the EU household luminaire label to provide information on the real efficiency in the future.

7. Commercial refrigerators: pushing energy savings beyond labels and Ecodesign using rebates and complementary measures in Switzerland

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Relevant link: http://www.topten.eu/uploads/File/Professional/Other%20Pro%20Guidelines/Refrigeration_Procurement_Topten_English.pdf

20 years after the EU introduced its energy label for household refrigerating appliances, labelling and Ecodesign requirements are extended to commercial refrigerators (and freezers). ENER Lot 13 (household refrigerating appliances) is in review, ENTR Lot 1 (professional storage refrigeration products) will be adopted in the near future and ENER Lot 12 (refrigerated commercial display cabinets) is being drafted. In 2015, all these product policies will therefore be in the spotlight.

As the European Commission, standards organizations, industry and other stakeholders debate and draft the necessary definitions, a rebate program in Switzerland is readily putting the results into practice. Its aims are 1) to create greater market transparency, 2) to show Best Available Technology (BAT), and 3) to increase supply and demand of energy efficient products, and 4) to increase supply and demand of products

using climate-friendly refrigerants (with low global warming potential). It focuses on plug-in cabinets and operates from 2013 to 2016.

In parallel, the Swiss Federal Office of Energy is looking for additional measures to exceed the energy savings of EU labelling and Ecodesign requirements. A report will be available in January 2015.

This paper discusses EU product and F-gas policy in view of Switzerland's rebate program and search for complementary measures. It also gives up-to-date insights into Europe's Best Available Technology for commercial plug-in refrigerators and freezers.

8. Monitoring the white goods markets in selected European countries

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Ademe (Agence de l'Environnement et de la Maîtrise de l'Energie, France) sets up a project with Topten in order to track trends in the French White Goods market. Sales data including information about energy efficiency classes, energy consumption, size and price make it possible to monitor the developments in the White Goods markets of France. GfK sales data from 2004–2014 covering household refrigerators, washing machines, and tumble driers will be analyzed. For the sake of comparison, the same data will be collected and analyzed for Portugal. Sales data from Switzerland can provide additional information regarding differences between national markets. For household refrigerators, the markets of the selected countries can also be compared to the market of the entire European Union.

The paper will:

- Analyze market developments regarding trends in energy efficiency, absolute energy consumption, size and price of household refrigerators and tumble driers, and for washing machines additionally in water consumption;
- Compare and contrast trends in France and Portugal, partly also in Switzerland and at EU-level (refrigerators);
- Propose explanations for development patterns;
- Examine the impact and timing of EU policies, including MEPS and energy labelling;
- Look at the potential of systematic market monitoring based on sales data;
- Make recommendations regarding MEPS and energy labelling as well as market monitoring.

Sales information up to 2014 will guarantee that the analysis is up-to-date. This analysis will provide important lessons for revisions to the Ecodesign and energy label regulations for household refrigerators in Europe.