TOPTEN GLOBAL ANNUAL REPORT 2015 AND 2016

Published April 2017

The sole responsibility for the content of this report lies with Topten International Group (TIG). It does not necessarily reflect the opinion of Topten partners. Neither of them is responsible for any use that may be made of the information contained therein.

Authors: Julia von Esebeck, Sophie Attali, Bella Roscher, Eric Bush, Juraj Krivosik

Topten International Group, Zurich, Switzerland, www.topten.info

TABLE OF CONTENTS

EXECUTIVE SUMMARY MESSAGE FROM THE PRESIDENT	5 7
1. INTRODUCTION	9
 2. TOPTEN Objective and main activities Organisational structure Strategic direction and future challenges 	12 13 14 15
 3. TOPTEN ACTIVITIES AROUND THE GLOBE Topten Europe Topten Asia Topten South America 	17 19 26 29
4. TOPTEN GLOBAL IMPACT	34
5. DONORS AND PARTNERS	36
6. TOPTEN INTERNATIONAL GROUP BOARD MEMBERS & CONTACT DETAILS	38
7. RESEARCH AND PUBLICATIONS	40
LIST OF ABBREVIATIONS LIST OF TOPTEN ORGANISATIONS WORLDWIDE	43 45

EXECUTIVE SUMMARY

Topten is an internationally operating consumer network and platform, making energy efficiency more transparent to the public by promoting the most energy efficient electric appliances and motor vehicles on its national websites. Topten was first established in Switzerland in the year 2000 and four years later, further Topten organisations were developed around the globe. Until now, Topten exists in 16 European countries, in China (since 2010), Chile and Argentina (both since 2015).

One of Topten's main activities consists of raising consumer awareness towards energy efficiency and energy efficient electrical appliances and cars. Besides maintaining up to date information on the best performing appliances within different product categories, Topten actively influences policy design by providing evidence from the market on how to improve regulations regarding energy efficiency labelling and minimum efficiency standards.

Next to the collaboration between the international Topten organisations, Topten collaborates with different stakeholder such as producers, retailers, large buyers, NGOs and the media to promote energy efficient appliances.

This report gives an overview of Topten's global activities in 2015 and 2016. Starting with a general introduction on energy efficiency, more information on Topten's objectives, organisational structure and strategic future direction are given in the second part of the report. In the third part, highlights from each region are presented. Thereafter, facts and figures show the impact that these activities have in terms of financial savings and CO2 emissions. Finally, Topten's partners are introduced and information on Topten Board Members are given. To provide more information in the field of energy efficiency, a list of publications and research is provided at the end of the report.

MESSAGE FROM THE PRESIDENT

"Dear friends of Topten,

It is with great pleasure that we publish this new Topten's Global Annual Report 2015–2016. It has been an intense period, with many exciting milestones, both for Topten and for the world, with the Paris Agreement in December 2015, as the most important achievement to address the global climate change challenge.

The Paris Agreement confirmed international, governmental commitment towards addressing the causes and impacts of climate change. All serious analyses of the deal make clear that energy efficiency is not just a good idea, but a necessary condition for keeping global temperatures "well below 2°C".

Our partners do understand the importance of using energy and resources more efficiently in the fight against climate change. Their renewed commitment to our activities in Europe, China, and Latin America show that Topten has evolved and reached the next level. Topten 2.0 (for more details see section 2.3) is our roadmap, agreed in 2014, for using a big-data approach, identifying and promoting the most energy efficient products. With this, information on Topten can be updated daily, and visitors can easily access the websites of online retailers selling Topten products.

In 2015 and 2016, we also said "Hola" to Latin America, with new Topten projects starting in Chile and Argentina, two major economies on the continent. Our Chilean and Argentinian partners are putting in practice new and strong communication approaches, including successful social media channels.

At the global level, we partnered with "United for Efficiency", a UN-led initiative which seeks to accelerate the global transition towards efficient lighting, appliances and equipment.

In 2017, Topten plans to also expand to Brazil, cooperate with India and possibly Mexico, three large markets with a growing middle class and increased purchasing power. Much of the preparatory work for the launch of these new Topten projects has already happened: numerous contacts with local partners and market analysis have been made.

After 16 years of existence, I can safely say that Topten is healthier than ever. This is thanks to the commitment of our funders, the dedication of our national teams, the flexibility of our approach, and the relevance of energy efficiency in the fight against climate change. I look forward to continuing this exciting adventure with you".

Eric Bush President, Topten International Group

(1) INTRODUCTION

Combating Climate Change by improved Energy Efficiency

According to the latest Assessment Report of the Intergovernmental Panel on Climate Change (IPCC, 2014), climate change is unequivocal as the atmosphere and ocean have warmed, the amounts of snow and ice have diminished and sea level has riven. After years of research, the scientific community agrees that anthropogenic greenhouse gas emissions (GHG) have been the dominant cause of the observed warming since the mid-20th century. To mitigate the negative consequences of climate change on human health and livelihoods, agriculture, ecosystems etc., countries agreed to work to limit global temperature rise to 2° Celsius (United Nations, 2015).

Man-made GHG emissions arise from many different sources: primarily they are a by-product of burning of fossil fuels in power plants, cars, trucks or homes. While farming, forest clearing and waste decaying in landfills are also sources of GHG emissions, in the EU, energy consumption is by far the largest emitter. According to the European Commission (2011) two main measures to act against global warming are to replace fossil fuels by renewable energy sources and to reduce energy consumption.

One measure for reducing the amount of worldwide energy consumed is managing and restraining the growth in energy consumption by improved energy efficiency. For example, between 2000 and 2015, improved energy efficiency in member countries of the International Energy Agency (IEA) resulted in energy savings of 450 million tonnes of oil equivalent (Mtoe). This number of savings is enough to power Japan for a full year (IEA, 2016). The increase in energy efficiency has been particularly driven by government policy during the last decades. Mandatory policies such as standards and labels, in terms of both their range of coverage and the performance levels they require, have been a key factor for reducing energy demand. However, there is still plenty of room for further improvements. The IEA argues in their most recent Market Report (2016) "if best in-class standards had been applied to energy consuming equipment in all countries, residential energy consumption would have been 14% lower in 2015".

Topten is aware of this room for improvement and therefore supports the European Commission, the Chinese government and many national governmental agencies with policy advice on energy efficiency standards and labelling programmes-especially regarding electric appliances and cars. As the energy efficiency of electric appliances and cars is per se still lacking transparency for consumers, Topten also runs an independent consumer platform, with continuously updated national online product ranking lists, to provide recent information about the most energy efficient appliances.

Overview Energy Efficiency Standards and Labels

In the case of electric appliances, national energy efficiency standards and labels exist since the 1970s, and have been adopted in more than 80 countries around the world by now. Although average efficiency improvements vary over appliance type and across economies, in almost every country significant improvements could be achieved through effective standards and labelling programmes. In China, the United States, and the European Union, the energy efficiency of major appliances has increased at more than three times the underlying rate of technology improvement. In addition, over the last years there has been a continuous increase of countries setting up voluntary and mandatory standards for appliances, with refrigerators being the product best covered in 75 countries (IEA-4E, 2016).

There are generally two complementary tools to improve the energy efficiency performance of appliances and equipment.

1.

Market Transparency with Energy Labels: Energy labels improve transparency for consumers and help them to make an informed choice, when purchasing new energy efficient products. Labels are either "rating labels" showing the comparative performance of all appliances or "endorsement labels" identifying the best-in-class products. Labels can furthermore be classified into mandatory and voluntary labels.

In Europe, labelling requirements for product groups are created under the EU's Labelling Directive, a process managed by the European Commission. Now, several different energy label scales exist (from A to G, A+++ to D, etc.), but over the years since 1995 when the label was introduced, energy efficiency has improved so much that most of the products on the market are in the top energy efficiency class. Therefore, on 15 July 2015, the Commission proposed a return to a single A to G label scale to help consumers distinguish the differences between products of today more easily. This proposal was finally accepted in 2017 and energy label classes will go back to A–G with regular scales.

The Energy Star Programme is an example of a voluntary label. The label was first introduced by the US Environmental Protection Agency in 1992. Because office equipment did not carry an energy efficiency label in Europe by that time, the EU decided to adopt the Energy Star Programme in 2001 (IEA-4E, 2016 & European Commission Website). Market Transformation with Minimum Energy Performance Standards (MEPS): These standards provide a level playing field in competitive markets by removing the worst performing products without reducing consumer choice.

MEPS exist all over the world, in Europe MEPS are implemented as part of the Ecodesign regulations created by the EU's Ecodesign Directive, managed by the European Commission (IEA-4E, 2016 & European Commission Website).



Objective and Main Activities

The overall objective of Topten is to mitigate climate change and contribute to environmental protection, by transforming the market towards more energy efficient products. Since the efficiency differences between electrical appliances regarding their energy efficiency is still significant even when they provide a same level of service, a careful selection of these goods is key for a sustainable market transformation. Topten facilitates this selection process by providing the latest market information on products to the benefit of consumers, producers and policy makers.

TOPTEN'S MAIN ACTIVITIES ARE:

Identification and display of most energy efficient products:

Products are selected and ranked based on sound market research and impartial evaluation considering criteria specific to the respective national legislation. There is a focus on four major product areas: building components, mobility, electronics, and home appliances. However, product categories within these four areas can differ. In China, for example, rice cookers are relevant, whereas in France, coffee machines are listed. Lately, also in China, industrial products like pumps, fans and compressors have been studied.

• Policy advice:

By showing the most energy efficient products on the market, Topten provides information on the Best Available Technology (BAT). With this evidence on the BAT, its technical know-how, and its policy recommendations Topten supports the European Commission and other policy stakeholders in making effective energy efficiency policy and energy labelling measures. Likewise, Topten China supports the China National Institute of Standardization (CNIS) of the Chinese government in its policy making process. In Latin America Topten supports policy makers such as the Ministries of Chile and Argentina.

• Communication and dissemination:

Topten cooperates with the media and other multipliers, such as environmental and consumer NGOs, which relay the Topten message as part of their work. Furthermore, Topten undertakes different communication activities targeting end-consumers (e.g. "Cool Washing" campaign / activities around WWF's "Earth Hour").

• Cooperation with public procurers and retailers:

Topten gives advice to public procurers, including the development of concrete procurement tools, such as templates for tender documents for example. It furthermore maintains a dialogue with the manufacturing industry of consumer goods, especially on upcoming technological innovations, focusing on the demand and interest for energy saving products. Moreover, Topten cooperates with large public and private buyers, including retailers, who make energy savings one of their priorities.

• Maintenance and development of new partnerships:

Topten maintains relations with the European Union (EU), the European Climate Foundation (ECF), the Association for Electrical, Electronic & Information Technologies (VDE), the World Wide Fund for Nature (WWF) and the Swiss Federal Department of Economic Affairs (SECO)–Topten's main partners. Next to these main partnerships, Topten continuously establishes new partnerships at national levels with organisations that pursue similar objectives as Topten.

Organisational Structure

Topten was launched in 2000 in Switzerland by members of S.A.F.E., the Swiss Agency for Efficient Energy Use. By now, Topten exists on three different continents, more specifically, in 16 European countries, China, Chile, and Argentina. It is furthermore planned to open a new office in Brazil with the support of the WWF. India and Mexico might be another new location for Topten in the future, as promising partnerships already exist. All Topten teams around the world search, select and present the best products of their national markets. The national teams are either part of larger organisations, such as WWFs or national energy agencies, or organised as independent units. The *Topten International Group (TIG)* is an association, which coordinates the different national Topten teams and ensures that all country organisations agree to work according to the Topten Charter which ensures independence, transparency and neutrality.

Beyond that, TIG is responsible for the accreditation of new members and authorizes other organisations such as *Topten International Services (TIS)* or the *French Environment and Energy Management Agency (ADEME)* to implement specific projects at the national level (coordination, know-how transfer, etc.).

These service organisations, TIS and ADEME, are operational arms of the Topten International Group taking care of finances and coordination. For example, ADEME coordinates the Horizon 2020 programme "Topten ACT" (for details see section 3.1) and the European national Topten organisations. TIS, on the other hand, is responsible for the project "Best Products of Europe" (for details see section 3.1) supported by the European Climate Foundation (ECF) and for overseeing Topten in China and Latin America.



Strategic Direction and Future Challenges

Strategic Direction

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 roadmap 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, which will be implemented in 2017 for most of the Topten organisations around the globe. While with the previous software, visitors could only see the listed Topten products with their specific product information, they are now directed to retailers for immediate ordering. Furthermore, the new software provides:

• Visitors with a familiar online shop interface with filters and individualized lists where customers can enter detailed requirements or browse broad lists depending on their wishes and previous knowledge

• Different sections for business and private customers, showing tailored information relevant to their needs

• Responsive design for computers, tablets or smartphones

• A new layout of the Topten websites

Next to the new software, Topten has a strategic focus on increasing its *market visibility* through an intensified *collaboration with retailers and manufacturers.*

In addition, improved *global coordination* and internal exchange within the Topten international network is of strategic importance.

Besides domestic products, *commercial and industrial appliances* will increasingly be regulated in the coming years. During this implementation phase, Topten will be an important body to accompany stakeholders with new regulations, measurement standards, etc. Hence these product areas become of increasing interest for Topten.

Furthermore, emphasis is put on the *in-ternational expansion* of Topten organisations particularly in emerging markets. In Brazil, Topten will be launched in 2017 with the support of the WWF. India and Mexico are currently under discussion and important partnerships have already been established with key stakeholders there.

Future Challenges

With the development of new Topten organisations worldwide, the Topten International Group faces a variety of challenges. For example, the coordination of Topten teams and offices around the world becomes more complex. Therefore, TIG deals with the question on how to ensure a uniform development of Topten and its mission in the different countries. To meet this challenge, Topten aims at standardizing data analysis and selection criteria as well as establishing a corporate identity making international and national processes more efficient and transparent.

The new software also helps to ensure a uniform development of Topten organisations and, in addition, serves as a measure to increase Topten's visibility online. Topten is aware of the very different and partly decreasing number of website visitors among countries-a key challenge that must be addressed. Different activities such as increased online communication, similar website appearance and search engine optimization are planned to increase visibility and website visitors. To learn from successful examples, Topten cooperates with Bijli Bachao, an Indian website similar to Topten, that also provides information on energy efficient appliances. Bijli Bachao has very large visitor numbers and runs a successful affiliate marketing approach.

Funding is another key challenge, as Topten wants to strengthen commercial financing approaches while maintaining neutrality and credibility. Therefore, financing coming from a variety of sources is essential to avoid any external influence. Referring to Topten's policy work, another, rather continuous challenge is the way in which Topten can effectively shape and contribute to national and international policies that support energy efficiency standards.





• Countries with Topten projects

Possible new partner countries

Topten Europe

Today, Topten organisations exist in 16 European countries. In the last two years, all European countries have achieved considerable progress in different areas. The work is undertaken mainly under three European projects.

"Best Products of Europe"

This concept exists since 2009 and identifies the most energy efficient products in Europe, stating countries where they are marketed. It makes explicit and transparent the status quo of efficient technologies on the European market and can thus serve as the European reference on energy efficiency to further negotiate with governments and manufacturers. Thanks to professional dissemination activities, this Topten reference is used as a basis for environmental policy design, labelling strategies, dissemination programmes, minimum efficiency requirements, and specifications for multinational buyers. Manufacturers often operate worldwide: "Best of Europe" and the Topten International Group association offer the opportunity to coordinate a common understanding and empower decision makers to launch new initiatives, promoting efficient products.

Topten also published a European market Monitoring report based on sales data (funded by ADEME). It shows the trends for refrigerators, washing machines and tumbler driers between 2004 and 2015.

"Topten Act"

The Topten Act project, running from March 2015 to March 2018, aims at transforming the European market of energy-using products towards higher energy efficiency by addressing non-technical market barriers. It builds on the concept that it is ultimately consumer action (the purchase of top energy efficient products) that will determine market transformation. With this as basis, and the experience gathered from previous European Topten projects implemented since 2006, Topten Act has developed a comprehensive strategy covering all key market actors, with *three objectives* mutually reinforcing each other:

1.

To *increase consumer purchases of top energy efficient products* in Europe, Topten Act identifies the top energy efficient products in 16 European countries, and pushes this information to consumers through tailored national websites and targeted communication activities.

2.

To increase the availability and visibility of top energy efficient products on EU markets. This objectives is closely connected to the first objective as increased consumer demand for top energy efficient products improves Topten Act's ability to:

• work with manufacturers to help them steer production lines towards more energy efficient products.

• support retailers to display and promote energy efficient products in their shops.



Topten Act Logo, Source: Topten Act

To increase large buyers' knowledge of and demand for top energy efficient products in Europe (both public and private entities). Large buyers have the ability to steer the market towards more energy efficient products. Topten Act approaches them with information on products of their interest (e.g. office equipment, vehicles) and offers direct advice in preparing calls for tenders that include energy efficiency criteria.

Within Topten Act, 5 main activities were undertaken in the first 18 months of the project: 1. *Product analysis,* 2. *market observation* regarding correct presentation of energy information, 3. *partnerships with multipliers,* including retailers, 4. *Topten communication and dissemination* towards various target groups, 5. *impact evaluation and sustainable operation.*

1.

The analysis of European product information is the cornerstone of the Topten Act project, setting the foundations for the remaining national technical and non-technical work. 15 "Criteria papers" showing the status quo and trends in technology were developed in order to support the teams in defining and revising Topten selection criteria and recommendations in all countries. The criteria papers focus on the Topten main topics like household appliances, commercial cold appliances, lamps, luminaires and air conditioners. They were chosen to ensure synergies with other European Commission projects, as well as with on-going revisions of the Eco-design and Energy Labelling regulations. The papers basically cover the scope, current and expected Topten selection criteria, and technical background, policies, standards and labels and market analysis-they thus allow the teams to undertake national Topten lists.



Information sheet on Topten Act, Source: Topten Act These selection criteria are adapted to national markets-which show noticeable differences, even though the suppliers are few international manufacturing groups present in all European countries. When comparing, and analysing the Topten products and selection criteria across partner countries, one can see that:

• Most efficient products are disclosed in 360 product categories (distributed into 1'007 market segments) on the Topten websites. Together, the 16 Topten websites display information on more than 17'000 product models selected for their energy efficiency - an information tailored to each national market, close to the consumer.

• Most efficient products (products with the highest energy efficiency class) are sufficiently available in all covered national markets.

• Compared to the last evaluation available, most partners could tighten their selection criteria for several product categories, showing an energy efficiency progress on the market.

2.

Though Topten Act does not measure energy consumption in testing labs, it does verify on paper the declared energy efficiency indexes (EEI) as well as it randomly checks the correct display of the energy label and the product fiche on online retail shops:

• Regarding EEI calculations, the majority of results have confirmed the energy efficiency class declarations provided by manufacturers on the energy label. 730 products distributed in 6 product categories were analysed. In rare problematic cases, manufacturers/suppliers have been informed about the calculation activity and provided an explanation when needed. This has raised the attention of supplier representatives on the importance of energy labels, product fiches, EEI and market surveillance. The only case of discrepancy found concerned a product fiche that the manufacturer corrected after the interaction with Topten Act.

• Regarding on-line labelling verifications, 29 shops were reviewed in 6 countries, inspecting more than 4'700 products. While Topten ACT cannot provide figures on the percentage of products not displaying the energy label and product fiche properly, due to the small sample of shops and to the exclusive focus on most efficient products, the results do indicate that also the online shops with high market share (experienced ones) do not always properly display the energy efficiency data (not even for the top efficient models, where this would be a good sales argument).

3.

Partnerships with multipliers maximise the impact and visibility of the project. Manufacturers, retailers, large-scale buyers, environmental and consumer organisations and retailers are targeted:

• The Topten teams are in contact with 88% of manufacturers present in their countries, whether through the head of products, marketing departments or technical divisions, in order to check the data displayed on the Topten websites. Several manufacturers use the Topten logo on their products.

• 10 partners have developed a Topten Pro section on their website, dedicated to professional buyers, from the private and public sector, providing targeted advice and procurement guidelines, in different product categories, that can be copy-pasted in calls for tenders.

• More than 100 collaborations with multipliers were initiated/are on-going with a diversity of stakeholders such as institutions deciding on rebate programmes for the Topten products, consumer-, environmental- and sustainable mobility- NGOs, churches, charities fighting fuel poverty, national buying agencies, municipalities willing to use the Topten selection criteria, certification centres, insurance companies, research centres, the media, professional unions, etc. • Retailers are a special target of Topten Act, because of their specific role in market transformation: they 'edit' the choice of products available to consumers by deciding what is available in their shops and websites and they have a direct relation with consumers at the point of sales, at the very moment of purchase.

Even though they are a very challenging stakeholder, because of their extreme focus on direct and immediate financial benefit, several partner countries were able to reach a partnership:

o More than 120 retailers where collaboration seems promising have been identified. These 120 retailers cover more than 7'000 stores all over Europe.

o So far 11 out of the 16 participating countries were able to establish partnerships with retailers. Some are rather informal, but in more than 60 cases, it was possible to sign agreements.

o In 3 countries, a Topten training for staff was provided to 8 retailers.

o Many retailers used Topten to label their corresponding products: 56 in stores, 13 online, 4 in print materials.

o More than 50 retailers used Topten communication material (i.e. leaflets, web).

o For 4 retailers, Topten criteria play a role in the selection of the range of goods they sale.

o 6 countries were able to develop 20 specific affiliate marketing activities, i.e. their Topten website offers an additional service to visitors by providing a link towards price comparison websites or towards retailers, so that consumers can more easily decide on purchasing efficient products. The link is made specifically to the product selected by Topten (not to the on-line shop generic homepage) and, in the most successful cases, there is a link back from the retailers' to the Topten's website and it is possible to filter Topten products on the retailers' site.

4.

Beyond partnerships, an array of dissemination and communication activities is implemented at the national level in the 16 partner countries to ensure that the websites' valuable information actually reaches consumers: Building a network of journalists from consumer-related media (TV, radio, print, online or bloggers) and provide them with stories of interest to consumers, e.g. comparisons of efficient/inefficient products; Writing press releases at key moments, e.g. before summer for air conditioning products; before large sport events for TVs; Building a social media presence: Facebook, Twitter, etc.; Increasing web visibility on search engines, e.g. through Google Ads, Search Engine Optimisation, and mobile Apps; Producing and distributing electronic newsletters, leaflets and other promotional materials; Presenting Topten at relevant conferences, participating in professional exhibitions and consumer fairs; Developing and promoting short videos and TV ads; Organising energy efficiency competitions for consumers, and for manufacturers; Establishing links to existing communication campaigns of environmental/consumer organisations, to maximise the Topten media exposure.

An infographic about the European Topten network and its impacts has been produced and a set of 16 success stories illustrates the many possible activities and tangible impacts of the Topten Act project. Thanks to these dissemination activities, 320 articles were recorded across the whole consortium in the first 18 months of the project, a mixture of print and web coverage (a press book has been produced). Topten teams were also able to appear on TV and radio. Altogether this led to more than 40.3 million media contacts (persons exposed to the Topten message).

Regarding the Topten visitors, measured as unique users, combining all partners' figures gave a total of approximately 1.7 million visitors in the first 12 months of the project. Topten Act aims to reach 2 million visitors per year by the end of the project. (Measured as sessions, there were just over 2 million visitors).

5.

In order to evaluate Topten's impacts further, a visitor study is being carried-out to analyse in more detail how visitors behave and potentially get hints on how to improve the Topten websites. So far, the first step has been concluded via an on-line survey presented on all the Topten websites (opened by 1'172 participants, and fully answered by 932 persons in Europe). The second step will analyse the purchased products by some of the first respondents, via a second survey. An economic and environmental impact report will be elaborated based on the results. This report will be very useful for the Topten teams who also have as a task to prepare the ground for a diversification of funding sources.

"ProCold"

20 years ago, the first EU regulations for cold products in the domestic sector came into force: today, on the energy label, A+ is the lowest class admitted on the market. Although it cannot always compare directly, in the professional and commercial sector, cold products seem to be far less efficient: there are 12 times less plug-in commercial and professional product in use than household models, but the household sector only uses 2 times more energy (84 TWh/a against 43 TWh/a). Large reduction of energy consumption and CO2 emissions are possible, through well targeted and well implemented regulations.

The EU has acknowledged this situation: first regulations for professional products were adopted in 2015 while work is under progress for commercial products. Together, these product categories are the first professional products covered by the Ecodesign and labelling Directives. As this regulating process is new to a sector in which procurement chains are complex and split incentives are common, all stakeholders need to be accompanied. The ProCold activities have been developed to support all stakeholders active in this sector, and specifically cover plug-in refrigerated storage cabinets, refrigerated display cabinets, beverage coolers, ice cream freezers, vending machines, wine coolers and minibars.

The ProCold project runs since February 2015 and until February 2018. Objectives are to gather, check and disseminate neutral information on products' energy consumption, on refrigerants' global warming potential, and on saving potentials depending on products. Stakeholders will therefore be motivated to act, i.e. produce/ procure/support through policies more energy efficient and climate friendly models.



ProCold works with 5 stakeholder groups, both at the European and at the national levels:

• Public authorities in designing policies for their procurement policies.

• Manufacturers to motivate them to offer more efficient products on the market.

• Food and beverage industry who provide the cold appliances in which they sell their own food and beverage products.

• Retailers and other direct users (shops, hotels, restaurants and canteens, snack shops, office buildings, etc.) providing space and electricity for the cold professional products, but have little information and power in specifying the products to be used.

• Service providers, influencing building users or owners on which models to choose.

PROCOLD HAS FIVE MAIN MEANS OF ACTION:

1.

It continuously *studies the market, identifies the most energy efficient models* using the most climate-friendly refrigerants, and *publishes this information* on-line to increase market transparency. 14 product lists on-line present updated commercial references and technical details of models complying with the Topten selection criteria. 17 updates have been implemented since the start of the project. It *participates in policy developments* for professional and commercial cold products.

З.

It *identifies key stakeholders* at the European and national levels (In the first half of the project, 559 contacts have been established) and reaches them to disseminate this information, together with tools allowing stakeholders to understand the benefits of energy efficient models:

• Efficient cooling is a hot sales argument for manufacturers and suppliers of energy efficient refrigerated cabinets who benefit from the trend towards energy efficiency, gain competitive advantage, get their best products listed on topten.eu.

• Energy efficiency appeals to consumers and hence to customers of the beverage industry which can meet environmental targets and bring more profit to their customers by reducing their electricity costs.

• Energy efficiency cools costs for retailers procuring and using energy efficient refrigerated cabinets: they reduce their own electricity costs, meet environmental targets and distinguish their brands.

• Professional buyers that place emphasis on energy efficient refrigerated cabinets meet environmental targets, save on electricity costs and act in an exemplary way.

• Food service businesses, catering industries and hotels that choose energy efficient refrigerated cabinets save on electricity costs, protect the environment, and operate much more economically.

2.

It organises a product competition where the best products within 5 categories will be tested in laboratories and showcased at international fairs. Results will be publicised at the Euroshop fair in March 2017 and the HOST fair in October 2017.

5.

It presents its activities in the media, specialised press and during professional events and scientific conferences.

ProCold aims at contacting 1'000 organisations and companies and provide them with increased skills/capability/competencies on energy issues. The table below reflects specific concrete results yielding to energy savings–actually going beyond the objective of just increasing skills/ capability/competencies.

• 23 companies state explicitly to favour Topten products in procurement.

• 8 manufacturers and retailers label online and part of them in print their products with Topten logo and push their customers to select most energy efficient products.

• 72 organisations favour models with green refrigerants-this issue is well received by the stakeholders.

• 55 companies go for closed cabinets, in fact a key measure to save energy.

THE FOLLOWING TABLE SUMMARIZES THE RESULTS (AS OF SEPTEMBER 2016):

Contact established	601
Declaration of Topten products	60
Procurement with Topten	23
Topten labelling online	8
Favouring green refrigerants	72
Favouring closed cabinets	55

The product lists have progressed since the start of the project, which is an indicator of a positive impact of ProCold on the market: from 85 models from 10 brands at the start of the project, to 136 models from 25 brands. The selection criteria were tightened in July 2016, which shows the improvement of the market.

Around 3'000 products got a rebate in Switzerland for Topten models, showing a strong interest from manufacturers and procurers to go for energy efficient products (Topten products might account for over 5% of the Swiss market).

The project aims to increase the sales of best available technology (BAT) models. The impact will be strongest in the eight participating countries but also affect the total European market because the targeted actors operate internationally. We expect that at least additional 0.4% of sales will be BAT models chosen over standard models because of project activities (at least 0,8% in participating countries and 0.15% in other countries).

The eight participating countries (Austria, Czech Republic, France, Germany, Italy, Portugal, Sweden and Switzerland) account for 49% of EU-28+CH population (Eurostat 2013). We assume that EU sales distribute proportional to countries' population. The expected triggered primary energy savings of 276 GWh/year during the lifetime of products (8 to 10 years) were calculated based on sales data from the preparatory studies and labelling formulas according to the EU policy documents (adopted or most recent draft available as of late May 2014).

Topten Asia *China*

In China, activities have been divided into five different focus areas in order to address the broad community of stakeholders relevant to Topten China. Therefore, in the following, one success story is selected for each of the focus areas–Products & Web, Manufacturers & Retailers, Communication & Outreach, Policy Dialogue and Projects.

PRODUCTS & WEB-KEY RESULTS

This concept exists since 2009 and identifies the most energy efficient products in Europe, stating countries where they are marketed. It makes explicit and transparent the status quo of efficient technologies on the European market and can thus serve as the European reference on energy efficiency to further negotiate with governments and manufacturer.

In the last years, Topten China accumulated more than 400'000 energy efficient products in its database, making it one of the biggest in the country. Analysing product data is becoming increasingly complex. Thus, during the reporting period, Topten China reconstructed the database system using new technologies and tools, so that the product lists can be updated more efficiently than before. It also saves time on manual data checking as well as on data matching and analysis.

MANUFACTURERS & RETAILERS -KEY RESULTS

To follow the rapidly growing trend of online shopping, more links to online retail shops were added on Topten lists during the reporting period. This new service covers China's main online retailers, such as Jingdong, Gome, Suning and Tmall. Consumers are conveniently directed, with just one more click, to specific online shopping pages, when they browse the Topten website for higher energy efficient products.

In January 2016, together with WWF, the Topten China team made a store check in Gome stores in Beijing. The purpose was to monitor the real market share of products in the different energy grades of the China energy label, since the enforcement of the 2013 energy efficiency standard. 1'817 models of six product categories were checked. For refrigerators and washing machines, grade 1 products, the best class regarding energy efficiency, were most prominent (97% and 67%), while grade 4 and 5 products were barely found. Some products had no energy label at all, or the label was not visible. This was the case especially for TVs (85.8% had no label) and rice cookers (48% had no label). A technical report about these store check results is available in Chinese and English on the Topten website. The report was also published on the Topten international website and sent to Chinese policy makers as a tool to help them upgrade the energy label.

COMMUNICATION & OUTREACH - KEY RESULTS

Thanks to continuous relations with the media, 17 news clips about Topten China were published in newspapers, magazines and online media, which reached roughly 1 million readers in total.

Print and electronic media clippings on Topten China in first half of 2016 (Source: Topten China Status Report):

Торіс	Web Media Report	Printed Media Report
Water saving is not only count on products	4	1
Consumer research about energy using products	2	1
Motor System EE improvement policy workshop	2	0
Did you choose the right AC?	2	1
Better understand your fridge	3	1
Total	13	4

POLICY DIALOGUE - KEY RESULTS

During the reporting period, Topten China continued to strive for improving global energy efficiency and tackling climate change via international benchmarking and know-how exchanges particularly between China and Switzerland. On 11th of April 2016, the Embassy of Switzerland and Topten China jointly hosted a reception on a "China-Swiss Energy Efficiency Dialogue" at the Ambassadors' Residence in Beijing. Nearly 100 participants from various fields, including government officials and energy experts from research institutions, embassies, enterprises, NGOs and UN agencies attended the event. Dr. Jean-Jacques de Dardel, Ambassador of Switzerland to China spoke highly of Topten's contribution promoting energy efficiency and facilitating the "Swiss-China Energy Efficiency Dialogue". Through this event, Swiss energy and climate policies, as well as best energy efficient practice, were introduced and well received by the Chinese and international attendants.



Image above: The embassy reception on China-Swiss Energy Efficiency Dialogue at the Residence of the Embassy of Switzerland on 11th of April 2016 in Beijing, Source: Topten China Status Report 2016

PROJECTS-KEY RESULTS

In June 2015, WWF China initiated a three-year project to carry out a comprehensive up-grade of an industrial transformation pilot project in Zhenjiang. In the first year, our partner WWF chose motor energy-saving renovation as an entry point, as industrial motors consume around 77% of Zhenjiang's total electricity. Topten China strengthened collaboration with WWF China and became an important partner in this project. During the reporting period, Topten China

- conducted on-site testing
- developed retrofit plans for motor system energy saving for selected enterprises
- provided advice for pilot enterprises on motor system improvement project financing plan
- proposed financial incentive standard for awarding the champion enterprises

In Addition, Topten helped WWF China with its Climate Solver programme to select CO2 emission reduction emerging technologies from various Chinese SMEs between December 2015 and March 2016. Topten China calculated the following emission reduction potential of new technologies.

Estimated emission reductions related to selected emerging technologies (Source: Topten China Status Report 2016):

Solution	Emission reduction (million ton CO2/year)
Kitchen waste treatment	56.81
Bamboo-based compositing pipes	63.29
High efficient soft film crystalline silicon solar technology	51.91
New heat-exchange technology	51.97
Blue-ray disk data centre	31.05
Total	255.03

Topten South America

In the recent years, Topten worked hard to initiate a market transformation scheme for consumer goods in South America. Since the regional Topten workshop in São Paolo in March 2013, relationships with the national partners of Chile and Argentina, have been strengthened. In addition, fundraising efforts with international, national, and regional institutions were pursued. Due to this development, major success can be reported for new Topten portals launched in Latin America in 2015.

Argentina

Topten Argentina was launched in December 2015 and is managed by Fundación Vida Silvestre Argentina, a non-profit organisation and WWF associate since 1988. Argentina's energy (electricity) intensity in 2013 was 3'093 kWh per capita, on the fifth place of the electricity consumption per capita regionally. In Argentina, the residential sector is one of the biggest consumers of secondary energy, consuming as much energy as the transport sector, and it has had the highest increment in the last 15 years, overtaking the industry sector. Furthermore, the residential sector is the biggest consumer of natural gas accounting for 45% of the total natural gas consumption. In general, 70% of the electricity generated in Argentina comes from the usage of fossil fuels.

There's an increasing interest among people to start saving energy since the energy bills, that have always been ridiculously cheap in Argentina's major cities, are being raised. Also, a Secretary of Saving and Energy Efficiency was created by the new government.

ESTABLISHING IMPORTANT RELATIONSHIPS - KEY RESULTS

Topten Argentina was officially launched in December 2015, within an event at the Swiss Embassy in Buenos Aires. It was attended by the Ambassador of Switzerland in Argentina, Mr. Hanspeter Mock, the Energy Planning Secretary, Mr. Daniel Redondo and the Energy Efficiency Sub-Secretary, Mrs. Andrea Heins, both belonging to the Energy and Mining Ministry of Argentina.

Since then, Topten has established an important connection to the Argentina Institute of Standardization (IRAM), an entity in charge of the development of labelling regulations. More specifically, IRAM revises and modifies energy efficiency labelling norms of household appliances regarding new technologies and market transformation.

In addition, Topten Argentina has met with many manufacturers, governmental regulatory agencies, certifiers and retailers introducing the Topten initiative to them. These meetings were more than satisfactory. There is strong interest and enthusiasm about energy efficiency projects were shown, especially from manufacturers, interested in improving their equipment to become part of Topten. Following Topten's engagement in developing important relationships, in 2016, LG electronics started using a Topten Argentina's logo sticker on their Topten products in retail stores, including air conditioners, refrigerators and washing machines. This led to other brands becoming interested in working together with Topten and opened a new path for funding opportunities.

In the late days of 2016, Topten Argentina came to an agreement with the Ministry of Energy and Mining of Argentina to work together through 2017, including communication campaigns, market analysis of Topten Argentina's products and of the general public's knowledge about energy efficiency labels.

PRESS RELEASES AND MEDIA ATTENTION - KEY RESULTS

The launch of Topten Argentina was covered by many newspapers and web pages. Carlos Tanides, for example, Topten Argentina's coordinator, was invited to speak on TV and to take part in several radio interviews. Furthermore, on two consecutive days, the Topten advertisement "You can buy electric appliances with cash, credit card or intelligence" was published in Clarin, the most important newspaper of Argentina, free of charge. Similarly, a Topten radio spot was broadcasted in 13 radio stations for free, having a marketing value of dozens of thousands of dollars.

COMMUNICATION HIGHLIGHTS AND EVENTS - KEY RESULTS

One example of a communication cooperation with manufacturers includes LG electronics, which used their social media channels, with more than a million followers nationwide, to promote Toptenargentina.org on several occasions. LG representatives have also sent an internal email to employees and promised to train 60 sellers regarding energy efficiency and general Topten information.



LG air conditioner with Topten logo, Source: Topten Argentina

Topten Argentina also organised an event in Buenos Aires' most famous shopping mall where people could play a "How to buy and use a household appliance in the energy efficient way" quiz. A similar event was held in the Carrefour premises, one of the biggest retailers in Argentina. It has also featured audio spots in 99 Carrefour stores, during one month, promoting Topten and inviting consumers to use the web page.

In Addition, Argentinian celebrities (including one of the most famous actresses in the country, with over 3 million followers) have been active on social media to promote Topten. They tweeted a Topten tip for saving energy, promoting the web page and making a remarkable impact on the number of web visitors.

Chile

FIRST TOPTEN WEBSITE IN SOUTH AMERICA - KEY RESULTS

Topten Argentina was launched in December 2015 and is managed by Fundación Vida Silvestre Argentina, a non-profit organisation and WWF associate since 1988. Argentina's energy (electricity) intensity in 2013 was 3'093 kWh per capita, on the fifth place of the electricity consumption per capita regionally.

The first South American Topten platform, enabling consumers to make energy-smart choices, was launched in August 2015 in Chile. Topten Chile is a tool adapted by Fundación Chile and supported by the Ministry of Energy and WWF Chile to promote energy efficient products.

Chile can be considered a dynamic consumer economy, with a dominant and growing middle class that has now over 50% of the population. Today, the Chilean consumer is better informed, selective and competitive. The population in Chile is 18 million; the number of households is 5.5 million. Consumers buy about 300'000 electricity/gas consuming products per year and 400'000 motor vehicles per year. Since 2010, the household electricity cost has increased by 20%. Consumer awareness on the use of energy efficient products is slowly increasing. Over 50% of the national residential electric energy consumption comes from: refrigerators (29%), lighting (16%) and TVs (12%). In order to progress about the subject, the government has established several programmes, agencies, laws and targets in respect to the energy sector and in particular to energy efficiency, including energy labelling, Minimum Energy Performance Standards (MEPS) and the Topten Chile project.

OUTREACH AND COMMUNICATION - KEY RESULTS

Communication channels: Since November 2015, Topten Chile has been creating contents related to energy efficiency, sustainability and recycling, among others. The development of these issues is made through articles where the main concepts are explained using a simple and clear language and writing closer to the ordinary user.

The articles published on the website and the posts shared on social networking are a nexus to bring information that was previously related to technical content.

Communications platforms: There are currently two content sections: "Noticias" (news) and "En La Prensa" (in the press) where Topten Chile publishes weekly articles related to energy efficiency and contents that talk about what is happening in Chile and around the world at that stage. These articles are shared on our social networks (Facebook and Twitter) with the objective of generating continuity between the development of contents and Topten users and followers. These publications helped achieve 3'500 followers in Facebook and 475 in Twitter.

Also, in order to raise awareness of Topten Chile, the team has done an important work to develop an automatic Topten sticker saying "product selected by Top-Ten.cl, opt for energy efficiency". This sticker can be implemented on retail websites: if a product is Topten rated, the sticker appears on the collaborating website and if it is not, no logo is shown. This tool is very powerful to start working with retailers and brands because it is a concrete and simple action to them. It is already present in a price comparator as it can be seen below:

In summary, thanks to all these activities, the website achieved a cumulated amount of 47'200 visits since its launch–with an average of 82% new visitors, the majority being from Chile but also people from other countries such as Argentina or Mexico.



(Topten sticker and sticker displayed on "SoloTodo" website, Source: Topten Chile)

NEW ACHIEVEMENTS ON TOPTEN CHILE WEBSITE

This year, in 2016, Topten Chile expanded from four product categories (with four subcategories) to six product categories (with 12 subcategories). Moreover, the web platform was improved with a new design and various new functionalities, such as filters and links to retail webpages for direct buying. Finally, at the end of 2016, Topten Chile launched its professional section for green procurement: <u>"Top-Ten Empresas"</u> with six first product categories.

ESTABLISHING IMPORTANT RELATIONSHIPS - KEY RESULTS

The Energy City or "Comuna Energética" programme is a management tool and an accreditation process for the municipalities of Chile. It defines an energy management programme with goals and objectives providing interdisciplinary plans and actions (technological, educational, etc.) as well as short, medium and long-term processes to improve energy management in the municipality.

Following the successful example of the collaboration between Topten and Energy City in Switzerland, Fundación Chile started to collaborate with Comuna Energética to implement a financial incentive programme for energy efficient products. In Chile and generally around the world, some of the main barriers for energy efficiency promotion are: the lack of public awareness, high initial investment costs of efficient products and the lack of information channels that provide confidence to users about available technologies and suppliers. Hence, this collaboration resulted in a new project: the purchase of high efficiency LED bulbs for hotels and restaurants in the city of Temuco. Besides, a fund was obtained to install LED lamps in 4 social institutions of the town. Thanks to that massive purchase, providers offered very reduced prices for the LED technology (up to 60% discounts). This project was a great first initiative and it enabled different buildings to change all their lighting installation for efficient LED products. The global estimated energy savings are around 50'000 kWh (equivalent to the annual electricity consumption of 40 houses in Chile) and the payback period of investments will be less than a year.

Besides these collaborations, Topten Chile continued to develop its network to further manufacturers and retailers. In addition, Topten Chile has initiated its work with the Government regarding policy recommendations such as developing a proposal for a new energy label for lighting, and writing a market study about electronics appliances to show the need of an updated energy label.



Energy Community, Source Topten Chile



In August 2015, an impact assessment was conducted by WWF and Infras, a research and consulting company based in Zurich. The assessment focused on the global impact of Topten activities on electricity consumption and CO2-emissions between 2006 and 2014. Because at that time, Topten Organisations did not yet exist in South America, but in the USA (does not exist anymore), the impact assessment focused on Europe, China and the USA. Due to limited data availability mainly activities addressed to private consumers and policy makers were analysed.

The results reveal the following insights:



Under *conservative assumptions,* the impact in 2014 is estimated to be in the order of about 4 TWh annual electricity savings, which corresponds to about 2.1 million tons of CO2.

0.206 ^{€/kWh} 824 ^{mio €}

With a European average electricity price for household consumers of 0.206 EUR per kWh (2016) these electricity savings amount to 824 million EUR financial savings per year. Since 2006 the annual electricity savings also continuously increased from around 0.1 TWh in 2006 to about 4 TWh by the end of 2014.



Assuming a more *optimistic scenario*, the activities of Topten are estimated to have an impact in the order of 5.4 TWh and about 2.7 million tons of CO2 in 2014. Again, this amounts to financial savings of 1'112 million EUR financial savings per year.

According to the impact assessment, with more than 70% of the total lifetime electricity savings, policy advocacy on the EU level account for the largest contribution to the overall annual savings as described above. To a large extent, it stems from improvements regarding the EU regulation of refrigerators and televisions. In the latter case, however, it is not sure how much the TV market itself was changing already which might diminish the estimated savings impact of Topten.

Overall, the quantitative and qualitative impact assessment of the activities show that Topten contributes to an increased market share of energy efficient appliances and thereby accounts for a substantial reduction in electricity consumption and related CO2-emissions. Interviewees state that Topten plays a major role in policy and as a provider of up-to-date information on the most energy efficient technologies and due to its efforts to shed light on new energy saving potentials. These activities provide a strong incentive for producers to invest in the development of products with improved energy efficiency and they facilitate the introduction of innovative products on the market thereby accelerating market transformation towards more energy efficient technologies.



Topten's main partners are the EU, the ECF, the TOPTEN FUNDING 2016 IN 1000€ testing and certification department of the VDE, the WWF and the Swiss Federal Department of Economic Affairs. Next to these partners, national partners exist such as ministries, national and regional energy agencies, environmental NGOs, consumer associations, research institutions etc.

These partners support Topten in its basic research activities and communication. Amongst others, they help Topten to keep the information on the Topten websites up-to-date and at a high level of quality. On top of this, key partners also provide financial support. The graph below shows Topten's financial resources in 2016.



TOPTEN MAIN PARTNERS, SOURCE: TIG



Schweizerische Eidgenossenschaft Confédération suisse Confederazione Svizzera Confederaziun svizra













6 TOPTEN INTERNATIONAL GROUP: BOARD MEMBERS & CONTACT DETAILS

Attali Sophie, Vice President Paris, France

sophie.attali@topten.info

Brunner Conrad U.

Zurich, Switzerland cub@cub.ch

Bush Eric, President

Felsberg, Switzerland eric.bush@topten.info

Leiva Ibáñez Francisco

Santiago, Chile francisco.leiva@fch.cl

Roscher Bella

Zurich, Switzerland bella.roscher@wwf.ch

Zheng Tan

Beijing, China zheng.tan@top10.cn



Literature of this Report

European Commission (2011). A roadmap for moving to a competitive low carbon economy in 2050.

European Commission Website. Energy Efficient Products. https://ec.europa.eu/energy/en/topics/ energy-efficiency/energy efficient-products.

Federal Office of Energy/ Bundesamt für Energie (2015). Schweizerische Gesamtenergiestatistik 2015. BFE, Bern, Switzerland.

Intergovernmental Panel on Climate Change (IPCC) 2014. Climate Change 2014, Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland.

International Energy Agency (2016). Energy Efficiency Market Report 2016. OECD/IEA, Paris, France.

International Energy Agency - 4E Energy Efficient End-use Equipment (2016). Achievements of appliance energy efficiency standards and labelling programs.

United Nations Framework Convention on Climate Change (2015). Paris Agreement.

Publications about Topten

Topten Global Impact Assessment. August 2015

Euro-Topten Max: Click your way to energy saving. February 2015.

What others say about Topten: statements by key stakeholders 2011–2014.

Topten Global Annual Report 2014. April 2015.

Topten Global Annual Report 2013. July 2014.

2012 Topten Global Annual report. May 2013.

The Topten manual 'Selecting the most energy efficient products' summarizes the Topten programme and its mechanisms. October 2012.

Euro-Topten plus: Click your way to energy savings. IEE final project report. February 2012.

Publications by Topten

PROCUREMENT AND USAGE RECOMMENDATIONS

Washing at 20°C is Cool. Topten documentation. March 2014.

Professional Procurement of energy efficient Refrigerators: Recommendations for Restaurants, Take-away, Retail Stores and Hotels. February 2014.

MAIN REPORTS AND DISCUSSION PAPERS

Energy efficiency of White Goods in Europe: monitoring the market with sales data – Final report. ADEME, Anette Michel, Sophie Attali, Eric Bush. Topten 2016.

Topten position on the revision of energy labelling Directive, updated 17th December 2015: Topten supports the Commission's proposal, but recommends to better consider absolute energy consumption. Energy efficiency of White Goods in Europe: monitoring the market with sales data. Full report / short summary version. Refrigerators, washing machines and tumble driers in the EU, France and Portugal. Anette Michel, Sophie Attali, Eric Bush. June 3rd 2015.

Why and how Europe should introduce mandatory product registration and a public database for energy related products. A recommendations and discussion paper. 5. November 2015. Updated version from:

Why Europe should introduce mandatory product registration and a public database for energy related products. Discussion paper. Anette Michel, Sophie Attali, Eric Bush, Alun Jones. 12. November 2014.

European TV market 2007–2013. Second report, complemented with 2013 sales data. Anette Michel, Sophie Attali, Eric Bush. July 2014.

European TV market 2007–2012: Energy efficiency before and during the implementation of the Ecodesign and Energy Labelling regulations. Anette Michel, Sophie Attali, Eric Bush, Topten International Services, July 2013. October 2013.

Swiss appliances sales, 2004–2015. S.A.F.E. and FEA. August 2016.

Factors influencing the penetration of energy efficient electrical appliances into national markets in Europe. S. Attali, E. Bush, A. Michel for Defra / the Market Transformation Programme. June 2009.

TOPTEN PRESENTATIONS AT THE EEDAL '15 CONFERENCE IN LUCERNE, AUGUST 2015

Anette Michel: Household refrigerators: Monitoring efficiency changes in Europe and Australia over the last 10 years.

Anette Michel: Monitoring the washing machines market in Europe.

Barbara Josephy: Cold wash-Tests on the washing performance.

Eric Bush: Heat Pump Tumble Driers: Market Development in Europe and MEPS in Switzerland.

Eva Geilinger: Commercial and Professional Refrigeration Products: Promoting Energy Efficiency with Legislation, Empowered Stakeholders and Rebates.

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

Luting Huang: Top10 Sticker: A Sufficiency and Efficiency Purchase Guide in China.

Luting Huang: Study of Chinese New EES for Variable-Speed Air-conditioners, Washing Machines and Panel-TVs.

Edouard Toulouse: Lessons from a decade of efficient product market analysis.

For more information on research and publications see <u>http://www.topten.eu/english/Docu-</u> mentation.html

LIST OF ABBREVIATIONS

ADEME	French Environment and Energy Management Agency	
BAT	Best Available Technology	
CFL	Compact fluorescent lamp	
CLASP	Collaborative Labelling & Appliance Standards Programme	
CNIS	China Institute of Standardization	
ECF	European Climate Foundation	
EU	European Union	
ECF	European Climate Foundation	
GEF	Global Environment Facility	
GHG	Greenhouse Gas Emissions	
IEA	International Energy Agency	
IRAM	Argentina Institute of Standardiza- tion	
LED	Light-emitting diode	
MEPS	Minimum Energy Performance Standard	
Mtoe	Million tons of oil equivalent	
NGO	Non-Governmental Organisation	
NTRI	National Top Runner Initiative	
R&D	Research and development	
S.A.F.E.	Swiss Agency for Efficient Energy Use	
TIG	Topten International Group	
TIS	Topten International Services	
VDE	Association for Electrical, Electronic & Information Technologies	
WWF	Worldwide Fund for Nature	

LIST OF TOPTEN ORGANISATIONS WORLDWIDE

Austria	Austrian Energy Agency (AEA)	http://www.topprodukte.at
Belgium	Union for Better Environment Flanders (BBL)	http://www.topten.be
Czech Republic	The Energy Efficiency Center (SEVEn)	http://www.uspornespotrebice. cz
France	Guide Topten	http://www.guidetopten.fr
Germany	Institute for Applied Ecology (OEKU)	http://www.ecotopten.de
Italy	Eliante Social Cooperative Society (Eliante)	http://www.eurotopten.it
Lithuania	Lithuanian National Consumer Federation (LNCF)	http://top-10.lt
Luxemburg	Ecological Centre Luxemburg (OekoZenter)	http://www.oekotopten.lu
Norway	Norwegian Society for Nature Conservation (NSNC)	http://energismart.no
Poland	Polish Foundation for Energy Efficiency (FEWE)	http://www.topten.info.pl
Portugal	National Association for Nature Conservation (Quercus)	http://www.topten.pt
Romania	National Institute for Energy Research and Engineering (ICEMENERG)	http://www.topten.info.ro
Spain	World Wide Fund for Nature Spain (WWF ES)	http://www.eurotopten.es
Sweden	Swedish Society for Nature Conservation (SSNC)	http://www.toptensverige.se
Switzerland	Bush Energie GmbH	http://www.topten.ch
United Kingdom	The Energy Saving Trust (EST)	http://www.toptenuk.org
China	Renergy	http://www.top10.cn
Chile	Fundación Chile	https://top-ten.cl
Argentina	Fundación Vida Silvestre Argentina	http://www.toptenargentina.org
General Website		http://www.topten.info

General Website

http://www.topten.info