Why Europe should introduce mandatory product registration and a public database for energy related products

Discussion paper

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Topten International Services (TIS)

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Summary

Important economies such as Australia, Canada, China, Brazil, India and the USA have a mandatory product registration system for products with an Energy Label and/or minimum energy performance standards in place. These registration systems and related public databases provide an up to date and accurate picture of the market, serving as a basis for decisions on product policies such as Labels and MEPS (minimum energy performance standards). Additionally they enable authorities to quickly and easily access individual product details, supporting market surveillance activities, and can help consumers to find products fitting their needs. The example of cars shows that a product registration system is possible in the EU.

Product registration with a public database for energy related products would bring similar benefits also in the EU. Today there is a lack of up-to-date and complete market data, which can lead to policy measures such as Energy Labels or Ecodesign requirements not being ambitious enough. And in many countries market surveillance regarding efficiency and energy consumption of products does not take place at a sufficient level.

The European Commission (EC) should take actions to introduce mandatory registration and a related public database for all product categories for which an Energy Label, Ecodesign regulation or a Voluntary Agreement is in force. The effort for the EC to set up such a database would be paid back quickly by the great advantages it brings to policy setting and market surveillance. Cost details from Australia show that a registration system needs not cost a lot. Product specifications that are public today would be centrally available for all policy stakeholders, consumers and procurers and dealers. Suppliers would need to fill in this information only once, whereas today they have to provide it to dealers, market surveillance authorities, researchers and consultants separately. The administrative effort needed to register products before they are put on the market could be minimised by clever software solutions, allowing suppliers to easily fill in a registration form which is provided.

Clearly, the devil is in the detail, and a product registration and database offers many details for discussion. The intention of this paper is to serve as a basis for discussions about how a mandatory product registration and database can be implemented in the EU. Experiences with existing product registration systems in other regions and the car registration system in the EU should be considered in these discussions, which have already started.

Introduction

During the discussions related to market surveillance and the review of the Ecodesign and the Energy Label Directives, the idea of mandatory registration for energy related products (ErP) and a related database started to take shape. The idea is mainly fuelled by the need for improvements in market surveillance and market data availability for policy decisions regarding Ecodesign requirements and Energy Labels.
The Evaluation study of the Ecodesign Directive (CSES, 2012) had already concluded: *"Consideration should be given to the feasibility of introducing a requirement in the Ecodesign Directive or in individual Implementing Measures for the registration of new products by those placing these products in the EU market. The registration should be at an EU level and designed to minimise administrative costs. It would assist in market surveillance but also serve as a key source of information to monitor developments in the market."*
Chapter 8 of the Evaluation of the Energy Labelling Directive and specific aspects of the Ecodesign Directive (Ecofys, 2014), further preparing the grounds for a revision of these two Directives, is also dedicated to the idea of a product registration database. The idea was tested for acceptance in the large survey among stakeholders in the frame of the Energy Label evaluation study: more than 50% of the respondents considered mandatory product registration as effective or very effective. Next to environmental interest groups, government and surveillance bodies and energy agencies, also one quarter of the industry interest groups responded in a positive way (Ecofys, 2014). In the comments on the 'first findings report' (Ecofys, 2014) many stakeholders commented the idea of product registration in a positive way. Industry representatives stressed that it could be burdensome for industry, and that confidentiality and data sharing issues should be carefully assessed.
Mandatory product registration with a related database would provide market data for policy decisions and support market surveillance:

Use for policy making

Today: lack of market data
Today the European Commission often has to define new Energy Labels and Ecodesign requirements without having sound market data at hand. Data provided by the industry is often incomplete and outdated, and it can't be compared between countries and over time. As a result, some of the regulations have been of little effect, because they were not designed ambitiously enough. Examples are new Energy Labels with top classes already full after one year or less (washing machines, dishwashers, air conditioners. The process of data gathering and discussions about the data quality are time-consuming and can lead to postponing the adoption of regulations.

A product database could support policy decisions
A product database would provide an up-to-date overview on what's on the market: this overview on the efficiency, energy consumption, size/volume and technology of all models on the market could help to track market developments. The information from a product database could support decisions on new Label scales and/or Ecodesign requirements in the frame of revisions or new policies and on their timing. To some extent could also be used to monitor the impact of product policies.. The content of the database would enable the European Commission and all other policy stakeholders to have access to up-to-date market information; the dependency on industry to provide data could be reduced. Less time and money would have to be spent for data search in the preparatory studies: the data accessible in the database would be complete and up-to-date and thus of better quality than what the preparatory study consultants usually can come up with.

Complement product information with sales data?
In a product-based database each model has the same weight, whereas certain models may sell a lot, others not; some brands differentiate their models for each little feature, others market a lower number of model names. By providing different weight to the models sales data allow for a more comprehensive picture of the market. Including sales data into a DB is a critical issue, often opposed by the industry. However, the wish for sales data could be realised on the longer term by adding a requirement for manufacturers to provide sales data to the database – as it is done in New Zealand. Sales data would of course be confidential and public reports would only present aggregated data. Alternatively and on the short term this gap could be closed by purchasing aggregated sales data from professional market research companies (example on TVs: Michel, Attali, Bush, 2014; example from Switzerland: S.A.F.E. and FEA, 2014).

Use for market surveillance

Today: barriers for international market surveillance cooperation
Several projects looking at market surveillance activities in EU Member States regarding Energy Label and Ecodesign requirements have concluded that they do not take place at a sufficient level (Krivošík, Attali, 2014). It is estimated that a fifth of the savings by Energy Labels and Ecodesign requirements, equalling 100 TWh per year, is lost because of non-compliant products (MarketWatch). Also industry organisations point out how important a sufficient level of market surveillance is (e.g. EPEE). Manufacturers complying with requirements need to be protected from free-riders.
For different reasons (too expensive, not enough accredited laboratories, not enough resources, wrong institutional organisation, etc.), many countries do not carry out enough product tests. A manufacturer can make very few tests before putting a product on sale on the whole of EU, but each market surveillance authority (MSA) has to purchase and test four units: the costs of proving non-compliance are high. Under these circumstances it'd be especially important that the Member States could share test results among themselves. A barrier to results sharing is that a model is often not clearly defined: technically identical models can have many different names in different countries, or products with the same model name can have different technical specifications. This makes it very complex for MSAs to find out if a non-compliant model is present on their national market and under which name. Today MSAs have to ask for the model names on their market for each model another MSA has tested, and only manufacturers have the overview on 'model families' – technically identical models with different names.

Overview on 'model families' would facilitate international use of test results
A product registration database would serve MSAs primarily to easily and clearly identify 'model families' – which models are declared based on the test of which technically identical 'basic' model. This would allow MSAs to see at one glance for which models specific test results are valid, and would facilitate the use of test results from one MSA in other Member States.

Overview on responsible suppliers
Another problem is that for some products it is not clear who is responsible for their compliance, because there can be more than one supplier for a national market. A product database could also provide an overview on responsible suppliers.

Option for information sharing platform between MSAs?
A third problem, the actual sharing of information regarding planned, on-going and completed testing activities between MSAs, is currently being tackled by two projects: The Internet-supported information and communication system for the pan-European market surveillance (ICSMS) and a pilot database within the Intelligent Energy Europe (IEE) project Ecopliant.

A database-section with access restricted to MSAs and the EC could also be a possible platform for sharing information.

Market surveillance and registration projects in the EU

Market surveillance projects

There is a number of Intelligent Energy Europe (IEE) projects aiming at improving energy-related market surveillance in the EU:
' ATLETE' (Appliance Testing for Energy Label Evaluation) conducted compliance tests of domestic refrigerators and freezers, between 2009 and 2011. The follow-up project ATLETE II is focusing on washing machines and is finalised in October 2014. 'Come On Labels' did not conduct any product tests, but visited some 900 shops in order to check the correct display of the new Energy Label. It also established comprehensive lists of product tests actually undertaken, of the results and action taken. The project also published a report on the potential use of a database for information exchange between MSAs (Krivošík, Toulouse, 2013). 'Ecopliant' is testing products and building up a pilot database. 'MarketWatch' is carrying out shop and product tests. 'ComplianTV' will also conduct product tests, focusing on TVs. A database will be established containing all product information of the tested TVs.

Product Safety and Market Surveillance Package (PSMSP)
With this policy package the European Commission addresses problems in ensuring that products traded in the EU are safe and comply with all relevant standards. In the EU 'single market', no internal borders exist for products. The package shall ensure that also for standards, rules, tests and actions by market surveillance authorities no borders exist. The package includes two regulation proposals, which are expected to be adopted before the end of 2014: a regulation on consumer product safety, and one on market surveillance. The latter includes a European Market Surveillance Forum (EMSF), consisting of Member States' representatives and ensuring a high level of coordination and information exchange. The EMSF shall be supported by the Commission and assisted by an executive Commission secretariat.

Registration systems and projects in the EU

A number of registration systems or projects exists in the EU, focusing on different product aspects:

REACH: control and registration of chemical substances
Under the regulation on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) No. 1907/2006 chemical substances are regulated. There is a database, where all chemicals imported or produced have to registered. Part of the information is publicly available:
http://echa.europa.eu/de/information-on-chemicals/registered-substances

WEEE: regulating waste electrical and electronic equipment (WEEE)
The recast of the WEEE Directive No 2012/19/EU sets collection targets, provides tools to fight illegal waste exports and defines the national registration and reporting requirements. Based on the Directive, producers of EEE are registered and information on the quantity and category of EEE put on the market, collected, recovered and exported is collected in national registers. The quantities (in kg or tonnes) of ten different EEE categories are assessed. Manufacturers and importers of EEE have to register in each Member State. The recast of the Directive aims at improving the harmonisation of national registration and reporting

requirements. The European weee registers network provides an overview on national registers and aims at harmonising the reporting procedure: https://www.ewrn.org/

Energy-related products database (ERPD) by the European Commission
The European Commission is working on the 'development and management of a database on energy efficiency and other environmental aspects of products made available on the EU market' (EACI/IEE/2013/002), including lighting products, air conditioners, vacuum cleaners, tyres, computers and computer servers and an additional product category to be defined. Sogeti, a company from Luxembourg, is in charge of establishing a database and will then start collecting freely available data regarding energy efficiency and environmental aspects of all models available on the market. The project optionally includes sales information and is valid for 3 years. The project will provide important experiences in collecting and managing product data. If it is a success and works well it will provide a basis to start a product database for all product categories.

Cars: type certification and registration of each vehicle
There is a product registration system in the European Union, which is working since the 1970ies: for passenger cars.
Based on a Directive from 1970 car types that are sold on the European market must be certified in one EU Member State. For each new car type manufacturers submit an application, including all necessary specifications, to one of the Member States. The Member State approves the application, passes the information related to the new type on to other Member States and is in charge of verifying the conformity of the type with the approved prototype. Each vehicle must be accompanied by a certification of conformity – with this it can be sold all over the EU.
Each individual car that is sold is registered in the country of sale. Based on a Commission Decision from 2000 Member States collect sales data and report the number of registered cars plus average values for all specifications annually to the European Environment Agency (EAA). Each Member State has its own system of data compilation, and in some Member States sales data can be collected by a trade association, while in others each vehicle sold has to be registered and sales data are collected by national authorities directly.
Based on the regulation setting emission performance standards for new passenger cars from 2009 the EAA calculates the fleet emission progress and issues annual reports, showing if car manufacturers are on track to meeting the CO_2 emission targets. The EAA assignes models sold under different brand names in different countries to their manufacturer according to a harmonised denomination. The EAA first prepares a provisional report, which is sent for scrutiny to car manufacturers. Based on the final report the EAA together with the Commission defines the individual CO_2 emission targets for each manufacturer for the following year. Manufacturer-specific data is only published with the final report, and also the entire database is published.
An annual report showing how individual manufacturers are on track to meeting the specific emission targets is issued by Transport & Environment (T&E). T&E does not only praise the system, but has also points of critique. A main problem is the test procedure, which does not represent real-life conditions (Archer, 2014). Reported emission values are therefore much lower than real emissions and real fuel consumption. CO_2 emission targets are therefore only reached 'on paper', but not in reality. The problem is tightened by the fact that manufacturers are free to choose the country where a new model is tested and certified. As a result there is a competition among Member States not only regarding testing and certification prices, but mainly regarding how low the results of the emission tests tend to be. Testing services are not fully independent, and manufacturers choose those that usually have low emission results – this matters to them because taxes are linked to the declared specific CO_2 emissions and because they must meet the average fleet emission target in order to avoid penalties.
The cars' example shows that product registration is possible in the EU, even with the registration of every single unit that is sold.

Platforms for exchanging information on market surveillance

Several platforms or projects for exchanging information regarding product tests or test results exist in the EU. However, to date there is no platform focussing on Ecodesign and Energy Labelling:

RAPEX: Rapid alert system for non-food dangerous products
RAPEX serves as information exchange tool between Market surveillance Authorities and the Commission about dangerous products and measures taken. RAPEX focuses on products posing a health risk (toys, textiles, etc.) and is not used to report on non-compliance regarding energy efficiency. In a weekly report, lists of products removed from the market are reported, following tests showing non-compliance, or voluntarily by manufacturers.
Weekly RAPEX reports:
http://ec.europa.eu/consumers/safety/rapex/alerts/main/index.cfm?event=main.listNotifications

ICSMS: Internet-supported information and communication system for the pan-European market surveillance
DG ENTR has set up this platform, allowing market surveillance authorities to exchange information on products found to be non-compliant, among themselves and with consumers. ICSMS is not yet much used for information exchange on test results regarding Ecodesign or Energy Labelling, but with some adaptation it could be used systematically for this purpose (Krivošík, Toulouse, 2013). Such a platform should contain information on both tests showing compliance and non-compliance, it should also contain information on planned testing activities and tests conducted by actors other than MSAs, such as IEE projects.
https://webgate.ec.europa.eu/icsms/

eCompliance system
Under this title the Commission has launched the idea of making all the product information needed by market surveillance authorities electronically available. Member States and economic operators have been asked for input, and different options have been formulated: system could either be voluntary or mandatory, centralised and managed by the Commission or not centralised. If centralised, the basis for this system could be ICSMS, if not centralised, the information would be uploaded to dedicated sections of the manufacturers' websites. The paper by DG ENTR from October 2014 does not consider the use of such a system for market monitoring and policy making, and it is not mentioned that the information should be publicly accessible.

ADCO: Administrative Cooperation Working Group
There is an administrative cooperation (ADCO) working Group focusing on Ecodesign market surveillance and one focusing on Energy Labelling MS. The groups aim at harmonising MS practices regarding the respective Directives among Member States. They have no formal power, but meet twice a year to discuss and reach a common understanding on certain issues.

Ecopliant database
Work Package 4 of the IEE project Ecopliant is focusing on data sharing between Member States and includes the set up of a pilot database. Access to the database is restricted to MSAs (at the moment to project partners, but will be granted to other MSAs at a later stage), because it can contain sensitive commercial data. It will allow the sharing of testing plans and also about products found to be compliant. The database has been launched with six product categories (electric motors, external power supplies, fans, TVs, washing machines and water pumps) and will be extended to other products categories. Merging of the content with ICSMS will be considered.
http://www.ecopliant.eu/ (Database, with restricted access: https://db.ecopliant.eu)

ComplianTV results database
ComplianTV is undertaking TV compliance tests. The test results will be collected in a publicly accessible database. Details and test results for all models that are tested in the ComplianTV project will be publicly accessible.
www.compliantv.eu

Product registration in other regions

Other important economic regions have been implementing product registration systems for products with Energy Labels or MEPS in place[1]. Europe can profit and learn from their experiences when setting up an own database.

USA
Models of all product and equipment categories that are subject to Federal conservation standards have to be registered when they are marketed in the US. Manufacturers provide the product information and a compliance statement with an Excel template. The 'Compliance Certification Database' and key product information are publicly accessible. Importantly, also the information on 'basic model' and 'individual model covered by basic model' is publically available. The Certification Database is hosted by the US Department of Energy (DOE). It is mainly intended for the use by the DOE to monitor the energy efficiency of appliances and energy use, but the database has also a selection tool facilitating the search for products by e.g. consumers.

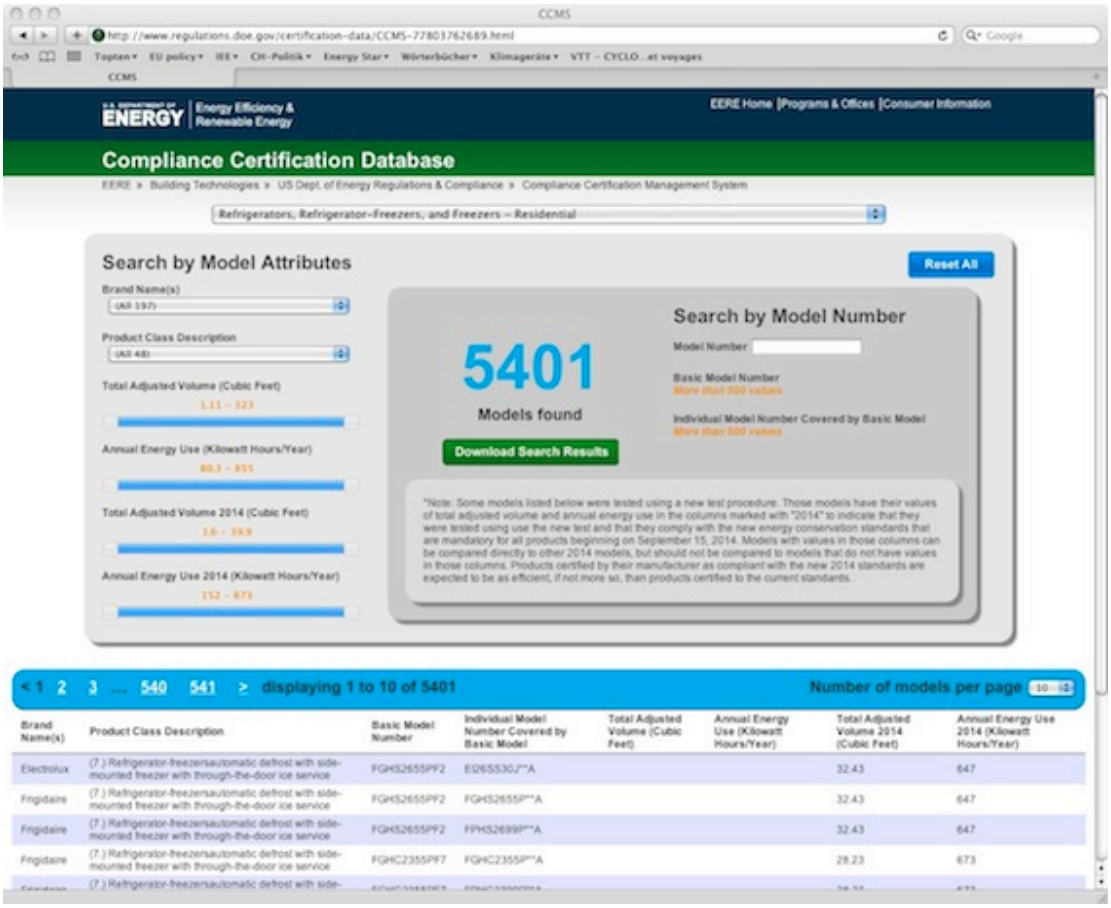

Fig. 1: Screenshot of the US compliance certification database: residential refrigerator and freezer models. http://www.regulations.doe.gov/certification-data/

[1] Also some emerging economies have product registration, e.g. Vietnam.

China

Also in China all products that are covered by an Energy Label have to be registered. By now around 30 product categories, including nearly all household appliances, lamps, office and industrial equipment are covered. The registration system and database is managed by CNIS (China National Institute of Standardisation), the national institute that also releases Energy Labels, Minimum Energy Performance Standards and test standards. When revising standards and labels, CNIS uses the product database as a source of information. In order to register a model, manufacturers download template forms which they have to fill in – including an energy efficiency test report template. Test reports are only accepted from accredited laboratories - which is another interesting aspect since it introduces third party testing (as opposed to self declaration). CNIS approves the application based on the information, then the manufacturer can complete the Energy Label template with the model data. Information on the brand, model, energy efficiency and for some products additional information is publicly accessible through the database.

Fig. 2: Screenshot of the Chinese model database. The drop-down menu on the left allows choosing the product category.
http://www.energylabel.gov.cn/NewsMore.aspx?para=uncc_bagg

Australia and New Zealand

In both countries all products for which an Energy Label or Minimum Energy Performance Standards (MEPS) are in place have to be registered. The shared model database between the two countries is public and is promoted as a search tool for energy efficient product to consumers. The database provides information on a model's energy efficiency, energy consumption, electricity costs and its country of manufacture. A new app for mobile phones allows consumers to see the total cost (purchase price plus electricity cost over lifetime) of any model. The government uses the data for assessments when revising MEPS and Energy Labels. Additionally the Australian government monitored the market with sales data bought

from GfK from 1993 to 2010. New Zealand requires suppliers to report sales data annually (see below).

In order to register a product (once for both countries), manufacturers need to fill in an online registration form and to provide a test report to show that the product meets the MEPS. The software checks automatically if the data is complete and consistent, but each registration entry is also quickly looked at by a person before it is accepted. The registration is processed within one month, then the applicant receives a confirmation and a registration number. In Australia a registration is valid for 5 years, whatever the product.

Costs of the Australian system
The costs of a registration system depend on the number of product categories and the number of registrations. According to the company which used to run the registration system from 2000 to 2011, covering about 12 product categories and managing about 5000 registrations per year, the costs they charged for this were around 150'000 Australian Dollars per year (around EUR 100'000) (Harrington, 2014). The Australian expert estimates that a similar system in Europe would cost around three to four times this amount (Harrington, 2014). The typical effort for suppliers to register a model is estimated at 10 to 20 minutes, depending on product complexity and if user details have already been fed into the system before (Harrington, 2014).

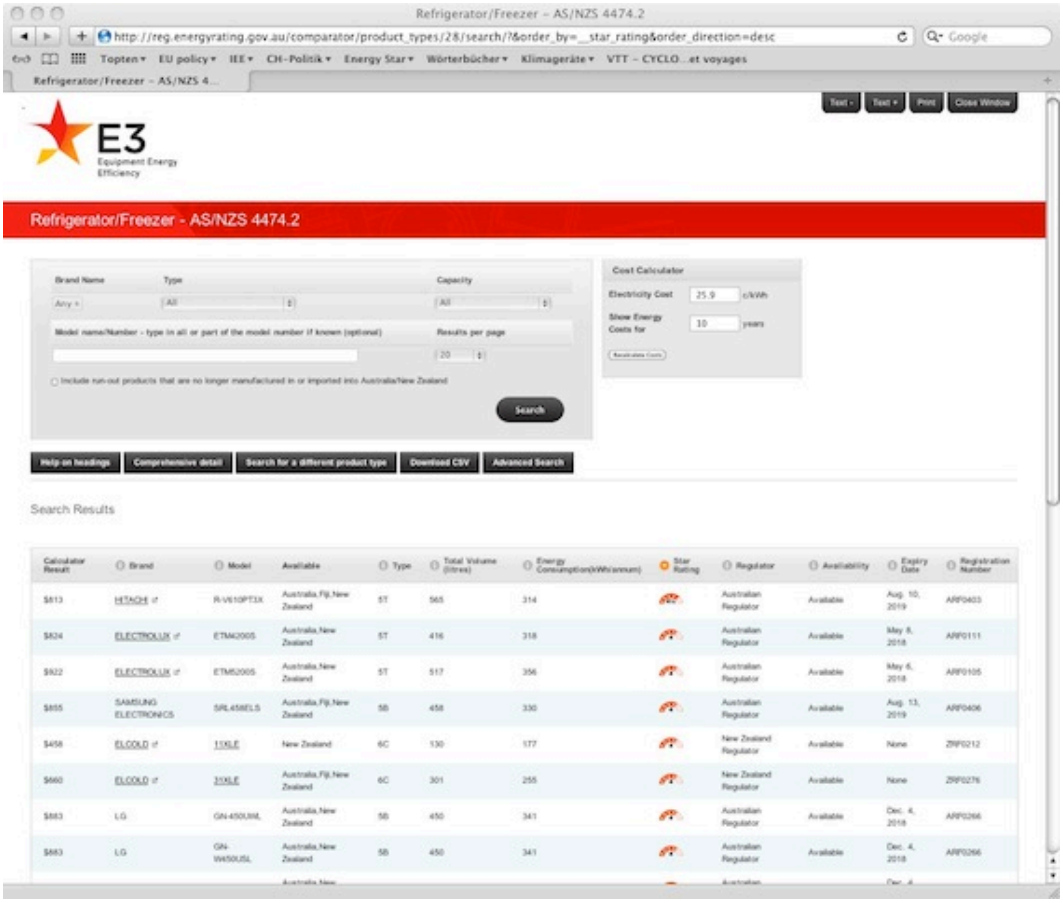

Fig. 3: Screenshot of the Australian refrigerator/freezer product list. Lists can be ordered according to different items (e.g. 'Star rating' or 'energy consumption') and searched for products meeting specific needs. www.energyrating.gov.au/

New Zealand: also sales information
Additionally to the registration requirement, in New Zealand manufacturers must provide sales data per product annually to the Energy Efficiency and Conservation Authority (EECA).

EECA publishes an annual report on the efficiency development and energy savings based on the sales data. The report contains only aggregated data and no details.

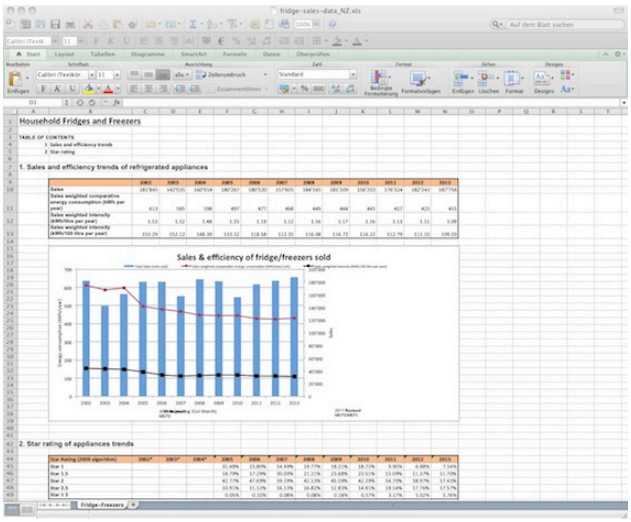

Fig. 4: Screenshot of the NZ sales and energy efficiency report on refrigerators and freezers, 2002 – 2014, in .xls format. http://www.eeca.govt.nz/

Canada

The Canadian product database includes household appliances, commercial refrigerated and heated machines, electronics and office equipment, heating, cooling and ventilation equipment, lighting products and building components. Users can select to see all models available in Canada or only Energy Star products. Dealers have to provide an 'energy efficiency report' before importing or selling an energy using product. If the model has already been registered, the additional supplier that wants to start selling a product, too, does not need to register again. For each product an excel form is available online, which has to be completed and sent to Natural Resouces Canada (NRCan) by e-mail. NRCan checks the products' compliance based on the energy efficiency report and adds the model to the product database.

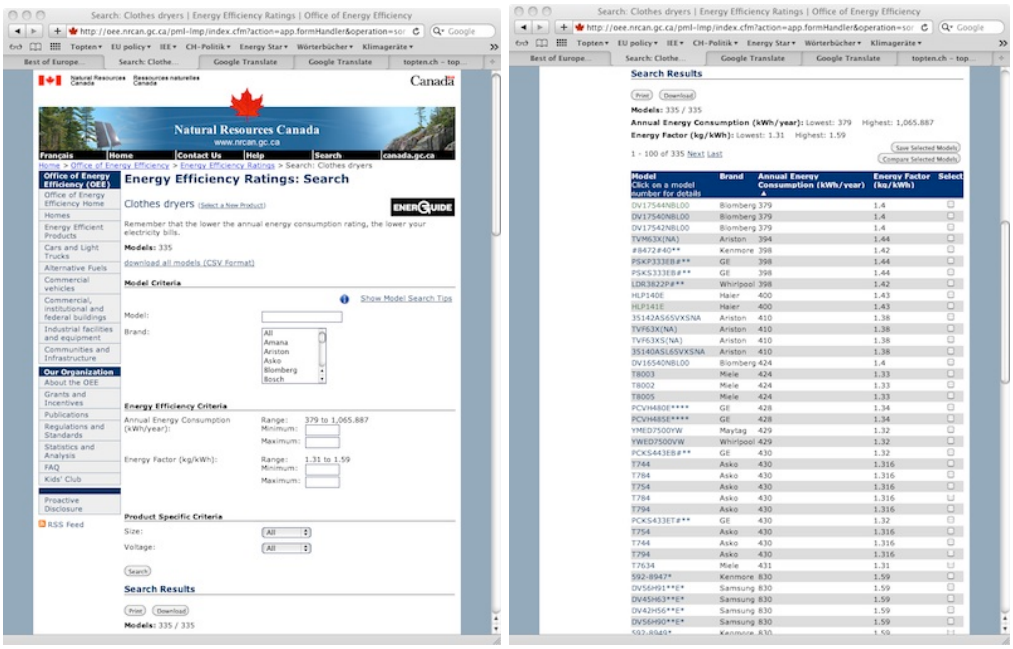

Fig. 5: Screenshots of Canada's product database search mask (left) and resulting product list (right). http://oee.nrcan.gc.ca/pml-lmp/index.cfm?action=app.welcome-bienvenue

Brazil

In Brazil a wide range of products have to be registered – a total of 51 product categories. Not only energy using products such as lamps, cookers, air conditioners, motors and pumps, but also items such as car or bike components, school or party products. Suppliers have to sign a conformity declaration, and the registration has to be updated annually. The database does not contain many product details, but all contact data of the supplier.

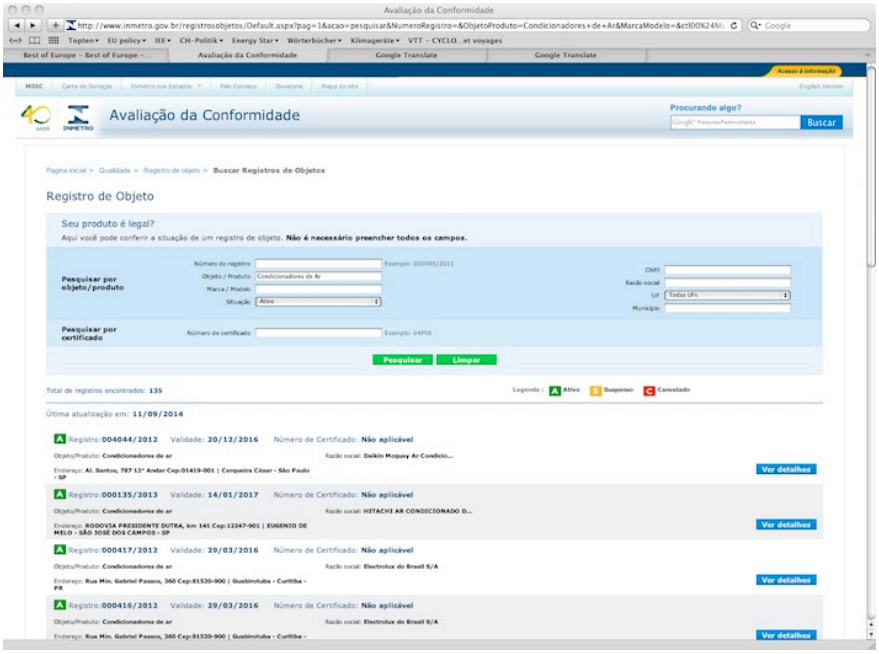

Fig. 6: Screenshot of Brazil's list of active air conditioner registrations. www.inmetro.gov.br/registrosobjetos/Default.aspx?pag=1

India

In India refrigerators, pumps, lamps, fans, water heaters, air conditioners, TVs, laptops/ computers, washing machines and transformers are registered at the bureau of energy efficiency. These products are covered by the standards & energy label programme, and they have to be registered. Companies have to register themselves and the models they want to offer for sale. The model registration includes providing a test report to the Bureau. Products in the database can be selected with different filters.

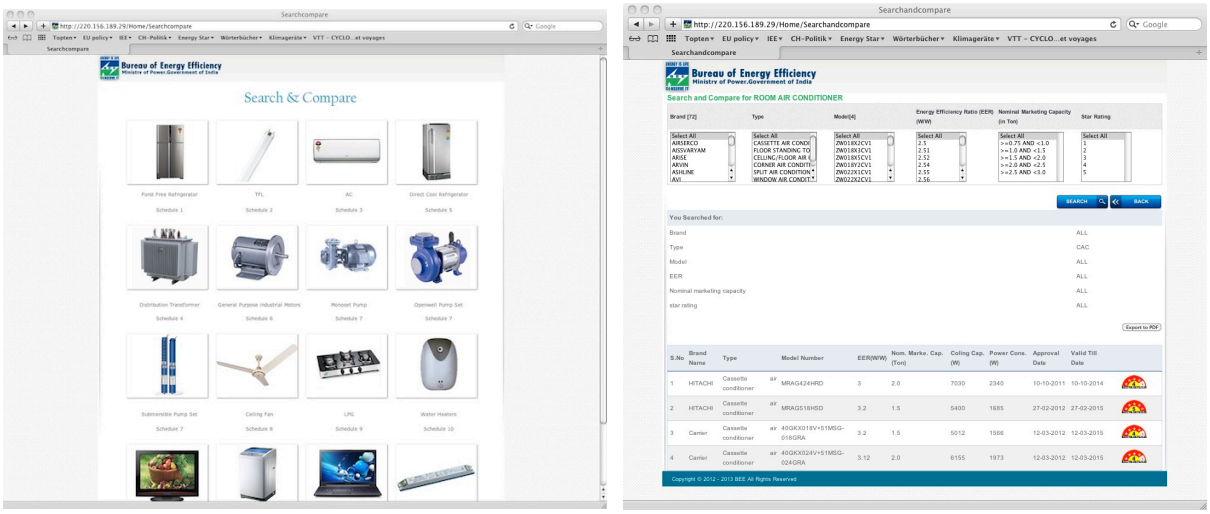

Fig. 7: India's product database website: overview (left) and an air conditioner product list (right). http://220.156.189.29/Home/Searchcompare

Discussion: product registration and database in Europe

Set up
Our position is that the European Commission should take actions to introduce a mandatory product registration for all product categories with an Energy Label and / or Ecodesign requirements or a voluntary industry agreement (VA) in place, and establish a product database, which should be, for a large part, publicly accessible.
The effort for the EC to set up such a database would be paid back quickly by the great advantages it brings to policy setting, market surveillance and the credibility of the Energy Label.

Scope
At least all product categories with an Energy Label and / or Ecodesign requirements or a Voluntary Agreement (VA) in place should be required to be registered before new models are put on the market. In the future additional product categories for which there is a standardised declaration of the energy consumption could also be registered.

Registration procedure
Models would have to be registered by suppliers placing a product on the market in any of the Member States. If a model has already been registered, additional suppliers would not have to register the model again, but simply add their contact to the list of suppliers of the specific product. If in the frame of the product safety and market surveillance package a solution for difficulties with the current definition of the responsible economic operator is found, responsibility for registration should be adapted accordingly.
Each model should be registered separately, except where equivalent models are declared.
Product registration should be compulsory prior to the placing on the market of the particular product. Product registrations would have to be renewed after a certain period, e.g. every 12 months after the initial registration, as long as the product is still being produced. Information on products with expired registration should still be accessible, but could automatically be moved to an archive section.
The registration site should provide a tool / form, which could be downloaded and completed by the suppliers or completed directly on-line (the two solution exist in product registrations of other economies). Today's software solutions will be able to come up with easy-to-handle forms, minimising the effort needed for registration. The software should be able to check the provided data for completeness and consistency automatically.
For suppliers the administrative burden for declaring products could even be lowered by a central product database: all the data would have to be provided only once for each product. There would be no need anymore to provide data separately to dealers, MSAs and researchers. Also for Online Energy Labels, which are mandatory from January 2015, the data could be collected from the product database.

Information captured in the database
It is recommended that the database be divided into two sections: the main section being publicly accessible, the other solely for the use by MSAs and possibly the Commission.

The public part of the database would essentially contain the product information that is public today via the Energy Label, product fiche, or based on Ecodesign information requirements. Basically all the technical details that have to be provided today would also be in the public part of the database.
Additionally the database would need to provide the complete information on which models ('individual models') are declared based on the test of another model ('basic model'), their unique identification number (EAN) and their market entering (or registration) date.

A model would have to be clearly defined: if the technical specifications change due to a new component or software, a model would have to be registered under a different name.
If appropriate, additional information could be fed into and published in the registration database. For example, for many product categories it would be useful to have the Energy Efficiency Index (EEI) published. Today the EEI is not communicated, while for plausibility checks it would be useful, and it cannot always be calculated with the information provided. The EEI and other highly technical aspects could be 'hidden', though easily accessible by perhaps checking a box on the listed product. This would ensure the database remains useful and relevant for users. If possible, it would be very useful especially for consumer tools, procurers and MSAs to know in which countries a model is available.

In the database section with access for MSAs and the EC only, additional information could be available: the suppliers' contact information, and information requirements referred to as 'technical documentation' by the Labelling and Ecodesign regulation. Today suppliers have to provide this information to MSAs on request, but often MSAs have to wait a long time. This database section could also be used by MSAs to exchange information regarding planned, on-going or completed compliance tests, test reports and remedy actions.

Database use
The database can serve four different purposes:
- It can serve as a basis for policy decisions,
- facilitate the information exchange between market surveillance authorities,
- help consumers and procurers to make an informed choice, and
- it can allow dealers to download and print the Energy Label.

In order to **support policy decisions** and the monitoring of policies, all stakeholders would have to have access to the product data in the database. This way the database would provide objective and complete information on the market, the quality of which would not need to be discussed at stakeholder meetings. It would contribute to more information symmetry between all policy stakeholders, and speed up the process leading to new policies. The time-consuming task of gathering market data (of questionable quality) would belong to the past. The data would allow tracking market developments and thus help to monitor the impact of policies.
By filtering the registered models in the database by date or year of registration, developments could easily be seen, and annual reports could be published. The product database would allow the Commission to decide on the timing for revisions of Ecodesign and Energy Labelling regulations and to base decisions on Ecodesign and Label thresholds on accurate data.
If at some point sales data can be linked to the product database, this would provide even more accurate information regarding market developments. After some years, the combination of sales data and energy specifications would allow for precise consumption models and scenarios. If not linked to the product database, the sales information could also be obtained from professional market research companies.

For **market surveillance** authorities a product database would bring clarity and much needed intelligence on the market. From the perspective of national authorities, a registration, and its subsequent database could serve two primary functions.
First, it would facilitate the exchange between Member States on compliance test results. Test results could be clearly and easily attributed to a certain model and assigned to all models of the same series in all EU countries. This would strongly increase the effectiveness of tests since it can allow Member States to use test results internationally. Even the costs could be shared between the States where a tested model is available. Therefore, the information regarding 'model families' (equivalent model names and numbers) would absolutely have to be accessible in the database.

Second, a complete product database would make it easier for MSAs to select models for compliance tests. A product database that is searchable with filters could be used for a random selection of a range of products that is representative for the entire market, or it could be used to pick products for tests based on specific specification or brands (e.g. based on previous enforcement actions or on intelligence received by third parties).

While the product database established by mandatory product registration would provide an overview on the products that are on the market and their specifications, a practical platform for sharing information about compliance tests would still be of great use for MSAs. Such a platform for sharing test plans and results could be based on ICSMS or the database being built up by Ecopliant. Alternatively it could also be linked to the product database. In this case access to this section of the database with sensitive information would have to be restricted to MSAs and possibly Commission staff.

Tools based on the information in the database could provide **consumers and procurers** with an overview on the market and support them for making an informed purchasing decision. Easy online or mobile tools could enable consumers to filter or sort the products according to different aspects to find the products best meeting their needs. For this, it would help a lot if countries of availability could be stated in the database. Consumer and environmental groups, as well as networks such as MarketWatch, would also be able to contribute more to enforcement, providing independent checks regarding correct declaration.

Furthermore the database should allow **dealers** to download and print (or show online) the Energy Label and the Fiche for the products they are selling, thus improving all aspects of the deployment of the energy label. A product database would also enlarge the possibilities for the labels' future, as they could one day become (partly) digital, using the database as a basis.

Accessibility
It is absolutely crucial that most of the information in the product registration database would be publicly accessible. Various other regions in the world have shown this to be a realistic and positive approach. The functions mentioned above can only be fulfilled if the information in the product database is generally publically accessible.
Only confidential data (e.g. 'technical documentation' according to Energy Label regulations, suppliers' contact information and possibly test reports) should be in a section of the database with access restricted to MSAs and the Commission.

Surveillance related to the mandatory product registration
A plausibility check upon registration can automatically be performed by software. To ensure that all - but only real - models are registered and that the product information in the database corresponds to the product information online and at the POS, at least spot checks will have to be performed. This can either fall into the responsibility of national Market Surveillance Authorities, or of an EU level market surveillance secretariat. The possibilities depend on the result of the discussion regarding the PSMSP.

Conclusion

Important economies such as Australia, Brazil, Canada, China, India and the USA have a mandatory product registration for products with an Energy Label and/or minimum energy performance standards in place. A registration system for cars has been in place in the EU since the 1970ies. A product registration for other energy related products with a public database would bring a lot in the EU. It would greatly facilitate the collaboration of market surveillance authorities of different Member States and, through improved market surveillance, increase the credibility of the Energy Label. And a product database would provide constant information on the market development regarding energy efficiency and energy consumption. This information would support policy makers in monitoring the effect of policies, deciding on revision dates of Labelling and Ecodesign regulations and provide a sound basis for deciding on new thresholds of Label classes and Ecodesign tiers. The presence of a product database, which would have to be publicly accessible to a large extent, would further reduce today's information asymmetry between product policy stakeholders. Clearly, the devil is in the detail, and a product registration and database offers many details for discussion. Experiences with existing product registration systems in other regions and the car registration system in the EU should be considered. The discussion how a mandatory product registration with a publicly accessible database can be implemented in the EU has already started.

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European Commission: Directive 70/156 on the approximation of the laws of the Member States relating to the type-approval of motor vehicles and their trailers

European Commission: Decision No 1753/2000 establishing a scheme to monitor the average specific emissions of CO_2 from new passenger cars

European Commission: Regulation No 443/2009 setting emission performance standards for new passenger cars as part of the Community's integrated approach to reduce CO_2 emissions from light-duty vehicles

European Commission, DG ENTR: Provisional options for an eCompliance system and relevant questions to the interested parties. October 2014.

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Transport & Environment, publications regarding cars and CO2 emissions: http://www.transportenvironment.org/what-we-do/cars-and-co2/publications

Links

European Commission

Directorat-General Energy: http://ec.europa.eu/energy

Documents regarding the Product Safety and Market Surveillance Package (PSMSP): http://ec.europa.eu/consumers/consumers_safety/product_safety_legislation/product_safety_and_market_surveillance_package/index_en.htm

EU market surveillance projects

ATLETE I and II: Appliance Testing for Energy Label Evaluation: http://www.atlete.eu/

Come On Labels: http://www.come-on-labels.eu
Collection of product tests and results:
http://www.come-on-labels.eu/appliance-testing/appliance-tests-2011-2013

Ecopliant: http://www.ecopliant.eu/

Market Watch: http://www.market-watch.eu/

ComplianTV: Compliance of TVs with Energy Label and Ecodesign requirements: http://www.compliantv.eu

EACI call for tender IEE/2013/002 for an Energy-related products database:
http://ec.europa.eu/energy/intelligent/files/tender/doc/2013/tender_specifications_eaci_iee_2013_002.pdf

ICSMS: an internet-supported information and communication system for the pan-European market surveillance: https://webgate.ec.europa.eu/icsms/

EU registration systems

European Chemicals Agency ECHA: http://echa.europa.eu/
Chemical substances database:
http://echa.europa.eu/en/information-on-chemicals/registered-substances

WEEE Directive: http://ec.europa.eu/environment/waste/weee/index_en.htm
European WEEE registers network: https://www.ewrn.org/

RAPEX: http://ec.europa.eu/consumers/safety/rapex/index_en.htm

Weekly RAPEX reports:
http://ec.europa.eu/consumers/safety/rapex/alerts/main/index.cfm?event=main.listNotifications

European Environment Agency (EEA): www.eea.europa.eu
2014 report on fleet emissions:
http://www.eea.europa.eu/publications/monitoring-co2-emissions-from-new-1

Transport and Environment T&E: www.transportenvironment.org

Product registration systems in other economies

Australian and New Zealandian product database:
http://reg.energyrating.gov.au/comparator/product_types/

- Australian Equipment Energy Efficiency (3D) program:
  http://www.energyrating.gov.au/
  Report on the Energy Savings in New Zealand from improved energy efficiency based on sales data (example for residential refrigerators and freezers):
  http://www.eeca.govt.nz/resource/household-fridges-and-freezers-total-sales-and-efficiency-data

Brazil's product registration website:
http://www.inmetro.gov.br/qualidade/regObjetos.asp

Canadas product database:
http://oee.nrcan.gc.ca/pml-lmp/index.cfm?action=app.welcome-bienvenue

CNIS, China National Institute of Standardisation: http://en.cnis.gov.cn/

- Product database by CNIS (Chinese):
  http://www.energylabel.gov.cn/NewsMore.aspx?para=uncc_bagg

US Compliance Certification Database by DOE:
http://www.regulations.doe.gov/certification-data/

India, energy efficiency bureau: http://220.156.189.29/

- Product database: http://220.156.189.29/Home/Searchcompare

Vietnam, National Energy Efficiency Programme of the Ministry of Industry and Trade:
http://vneec.gov.vn/en/

- Information on the online product registration:
  http://vneec.gov.vn/en/hot-news/on-line-product-registration-facility-42003-17083.html