

THE FUTURE OF ENERGY LABELS IN EUROPE

A consumer and stakeholder approach
to the revisions of the EU Energy Label

by

Eivind Stø and Pål Strandbakken¹

Abstract

The European Union's mandatory labelling of electric appliances has been an attempt at changing behaviour of consumers as well as of producers/importers. Appliances in the market should be labelled for their energy efficiency, rating from A to G, with A being the best. Rather quickly, and according to the intentions of the legislator, the inefficient appliances seemed to disappear, and As and Bs started to dominate the market. This means that the mandatory EU energy label has been hit by its own success, and needs a *revision*. There has been a common understanding among relevant stakeholders and political authorities that a revision is necessary. There is also an agreement that the new label has to be more *dynamic*, in order to include future technical innovations, without having to restart the bureaucratic revision process. The stakeholders have, however, so far not been able to agree on how this may dynamic dimension might be included in the scheme. The revision of the Energy label is the theme of this paper. We are able to identify three main positions in the discourse, held by the following agents: The European Commission, The European Household Appliance Industry and European Consumer organisation and Environmental NGOs

Keywords: energy labels, consumer behaviour, innovations, stakeholders

National Institute for Consumer Research, Oslo, Norway.
In cooperation with the BAREENERGY team: TNO, Delft, University of Surrey, Electricité de France, Universität Sankt Gallen, University of Groningen, Central European University, Centre for Sustainable Energy, UK. www.BAREENERGY.eu

Introduction and objectives

The European Union's mandatory labelling of electric appliances has been an attempt at changing behaviour of consumers as well as of producers/importers. Appliances in the market should be labelled for their energy efficiency, rating from A to G, with A being the best. Rather quickly, and according to the intentions of the legislator, the inefficient appliances seemed to disappear, and As and Bs started to dominate the market. From 2004 this led to a change, where for fridges and freezers the A category had to be subdivided into three classes: Standard A, A + and A ++. Some A ++ machines might as much as 60 % better than Standard As in terms of energy efficiency (<http://www.energylabels.org.uk/eulabel.html>)

This means that the mandatory EU energy label has been hit by its own success, and needs a *revision*. A scale from A to G, where letters lower than B are not in use, seems rather inefficient. There has been a common understanding among relevant stakeholders and political authorities on national and European level that a revision is necessary. There is also an agreement that the new label has to be more *dynamic*, in order to include future technical innovations, without having to restart the bureaucratic revision process. The stakeholders have, however, so far not been able to agree on how this may dynamic dimension might be included in the scheme. The revision of the Energy label is the theme of this paper.

The framework for our analysis is the BAREENERGY project, funded by the ENERGY part of the 7th Framework Programme. Based upon state of the art we have identified the following barriers for change in energy consumption among households and consumers (Strandbakken 2006, Throne-Holst, Strandbakken & Stø 2008, Lüthi and Stø 2009):

- 1) Physical and structural barriers,
- 2) Political barriers,
- 3) Cultural-normative or social barriers,
- 4) Economic barriers,
- 5) Knowledge based barriers and
- 6) Individual-psychological barriers

BAREENERGY aims at combining an individual and institutional approach. This means that individual and household energy behaviour – and changes in this behaviour – will only be understood by integrating values, attitudes, norms and knowledge among individuals with studies of the context in which this behaviour takes place. We also want to consider the potential for change in relationship to *the situations of opportunities* (Svane, 2002). The revision of the EU energy label represents an excellent window of opportunity for all involved stakeholders to raise other energy policy related questions

In the project we are focusing on the strength and relevance of various barriers for change in consumer energy behaviour and how can these barriers may be overcome by technical innovations, changes in the supply from energy producers and political measures by political authorities on local, national and European level. Lack of knowledge and information among consumers have been identified as one of the main barriers for change in energy consumption in households (Throne-Holst, Strandbakken and Stø, 2008; Lüthi and Stø, 2009).

This paper deals mainly with the relationship between the *political barrier* (or level) – the EU energy label – and the *knowledge based barrier*: consumers' knowledge, trust and use of the label as information tool for purchase behaviour. To some degree we also address the structural barrier because technical innovations may be part of the first barrier mentioned above. At this stage in the project our analysis will be based upon a consumer and stakeholder approach. In the political struggles over the revision(s), the stakeholders' perception of barriers to changed consumer behaviour becomes central. The debates between the relevant stakeholders; political authorities, businesses, NGOs, science, constitute the data for this paper. Our main objectives are:

- *What are the main dimensions and positions of the actors in the revision of the EU energy label, and how may these different positions be explained?*
- *Have stakeholders used this window of opportunity to put other related topics on the political agenda?*
- *Will the new label contribute to overcome barriers for individual behaviour and households practices?*

Our main data is interviews with stakeholders for household appliances, at national and European levels, as well as documents and written reports from the EU Commission, consumer organisations and business associations²

The problematic success story of the EU Energy Label

The EU mandatory Energy Label has been a definitive success. The label is based upon the framework directive 92/75/CE and covers today all large household electrical appliances such as freezers and refrigerators; electrical ovens for household use and microwave ovens; washing machines, tumble dryers and dishwashers. The label is mandatory both for producers

² To some degree these document also presents data from consumer studies, but the BAREENERGY project will address consumer values, attitudes and practises in a later stage of the project.

and retailers. It has to be classified by the producers and the label must be visible in shops. The products is classified from an A to G scale where A is the most energy effective.

Figure 1

Substantial technical innovations have taken place for all the relevant product categories during the last decade. In the period from 1995 to 2008 technical innovations have reduced the electric consumption for white households' equipment in Europe with 12% (37 TWh) (CECED, 2005). The EU Energy Labels has been the main institutional framework for these innovations; it has constituted the platform for technology improvements and competition in the European market.

During this period we have seen a development from G to A in most European countries, and this has been the case for all product categories. The label is well-known and trusted among European consumers (Ipsos MORI, 2008), and it is actively used in the households' decision-making processes

However, already in 2004 the sale of A-labelled refrigerators reached 50% of the market shares; and for washing machines $\frac{3}{4}$ of the sold products in 2001 was labelled either A or B (CEDED, 2005). Today, A-labelled products are dominating the market totally for most product categories. This might more or less have destroyed the use of the label as a communication tool between sellers and buyers. It is difficult to identify the best product in the market if they are all labelled with an A. For refrigerators this has, as mentioned, lead to the introduction of A+ and A++.

The main reason for these problems probably is that the criteria for the product categories have not been developed parallel to the technical innovations. Technological development and product innovations have made the A level criteria irrelevant.

Even though there is a common understanding that the Energy Label has been a success, we have also witnesses other problematic aspects with the performance of the label in the market, in addition to the "A-inflation":

- The label is to a large degree not found on the products in shops (ANEC, 2007)
- The testing of classification is complicated and expensive. Many countries don't regularly carry out tests
- In most countries there is no reaction and enforcement against this insufficient market performance

Even if new products sold from retailers have been energy efficient, we know that there still is a large amount of older goods within all product categories in households (CECED, 2005), and it will take years to phase them out. Research has also shown that to some degree new products are not replacing old products, but often add to them. Old products are kept and used after new energy saving products is bought. Refrigerators and freezers are relevant examples (Strandbakken 2007).

But our focus here is the crowding of the A category. This has been decisive for the revision process. When there is no difference between the classifications of products, the label will not function as an instrument for competition. The EU Commission has for some years been working with a revision, and the need for radical changes was announced both in the Energy Efficiency Action Plan in 2006 (COM (2006) 545) and in the Sustainable Consumption and Production Action Plan from 2008.

The Commission used a stakeholder dialogue in the development of the revision of the Council Directive 92/75/EEC. The consultation process included three elements:

1. Web-site input between December 2007 and February 22, 2008
2. Workshop on February 8, 2008
3. Written answer from various stakeholders

Based upon these feedbacks the EU Commission developed their proposal for a revision of the directive for the European Parliament and the Council in November 13, 2008 (COM (2008) 778 final). Since then the EU Commission has struggled to find a political and scientific compromise among member's states and all involved stakeholders. Various solutions were also discussed at the European Sustainable Energy Week in Brussels, February 10, 2009.

The EU-Commission reached to a final conclusion on April 1, and went to the EU-Parliament and the Council with a new proposal for the Energy Label. However, crucial parts of this proposal were rejected by the Parliament, and the future of the energy label is definitely uncertain. The Commission have to come up with a new proposal. This may take some time because there will be an election to the new Parliament in June and a new Commission will also soon be in charge.

This means that we are not able to conclude in this paper. Thus, our main focus will be on the political process from the Energy Efficiency Action Plan in 2006 to the proposal by the EU-Commission in April and the voting by the Parliament in May 2009.

A consumer and stakeholder approach

The BAREENERGY project is concentrating on consumers and households. Within the academic literature it is possible to identify various theories and approaches to understand the role of consumption in modern societies and the potentials for change (Stø et al 2007). We will below give a brief overview of relevant theories. The reason for this undertaking is to develop a more nuanced perspective on labels in consumption; how labels are conceived and understood in the different theoretical traditions, based on a rather pragmatic idea that there are valuable insights and perspectives that might be lifted from a lot of approaches.

In many ways it is easy to place labels as relevant tools within the paradigm of various rational choice theories, where the influence of *Theory of Planned Behaviour* (Ajzen and Fishbein, 1977;1980) has been very strong within consumer research. According to this theory, behaviour should be predicted from actors' attitudes and intentions. This might be related to the common sense basic rationale for all labelling systems and brands: The label is the bridge between the attitudes of the consumer and the producer. The producer triggers the behaviour of the consumer with a label that connects to the consumer's pre existing attitudes. The relevant attitudes here are most likely to be a concern over the environment (the link between energy use and climate change), or a concern over costs; the expectation that lower energy consumption in use will cover the extra investment. Or, obviously, the relevant attitudes are a combination of environmental and economic concerns.

However, labels may also play a significant part within other models of consumer behaviour. Many authors emphasize the symbolic values of consumption: "*The fundamental conceptual hypothesis for a sociological analysis of consumption is not use value, the relation to needs, but symbolic exchange value...*" (Baudrillard 1981:30). This phenomenon was also recognised by Veblen (1899/1925) for more than a hundred years ago, in the more recent writings of Bourdieu (1992) and in the post-modernistic "tradition" (Featherstone 1991). Consumption connects to the identity of modern individuals, (Douglas and Isherwood, 1979). In this perspective, a label will guide the consumer in his struggle for the creation and maintenance of a specific identity; here perhaps as a concerned environmentally oriented citizen.

A third contribution is the *Theory of the Dream Society* by the Danish futurist Rolf Jensen (1990), relatively closely linked to the symbolic values of consumption described above. Goods are not (mainly) produced and consumed for material reasons in affluent societies, but for emotional reasons. Future products have to appeal to our hearts, more than to our heads. Industries and business have to understand this fundamental change because the

market for the market for dreams is growing. Consumers are to an increasing extent looking for good stories linked to their good and services. The label is here supposed to trigger the feel good factor. Basically, this Dream Society “theory” should probably be regarded as a case belonging to the symbol value approach.

A forth contribution comes from Gronow and Warde in the book “Ordinary Consumption” (2001). They claim that the focus of consumer research has changed from spectacular to *ordinary* consumption. Consumption is mainly about the everyday life of ordinary consumers, and this should be better reflected in contemporary research. Consumption in modern societies to a very large degree is mass-consumption of ordinary products with few opportunities to excitements. Gronow and Warde are inspired by anthropology, where the *routines* of the everyday life always have played an important part. As for the energy label, this might be a remainder that this environmental product information system (EPIS) works with incremental change and rather small and not very dramatic improvements of rather mundane products.

Closely linked to routines is the Theory of Practice (Reckwitz, 2002; Warde, 2005). Human beings, in their role as consumers, take parts in a large number of activities, and their concrete praxis are decisive for their choices in the market. The main reference to the modern theory of praxis is Pierre Bourdieu (1977, 1990). The challenge in this part of the work by Bourdieu is to develop a theory that establishes a balance in individual behaviour between determination and freedom. Habitus create a dialectic relationship between social and mental structures. Habitus both determine individual behaviour, and is determined by collective practises.

A last relevant contribution is the theory of political consumption, relatively closely linked to the Dream Society. Consumption turns into *politics* when consumers choose markets arenas to influence decisions made by governments and companies, and mobilise other consumers to take part in this activity (Micheletti, Føllesdal and Stolle (2004). Micheletti calls this phenomenon political consumerism, or *individual collective action* (2003). Citizens may use the market arena to express themselves when other arenas have failed. It also makes it possible to influence the value decisions in private corporations, often a difficult task through other channels.

It is easy to understand that these six contributions to the theory of consumption in modern societies offers alternative and also to some degree competitive understanding of consumer behaviour. On the other hand they also to some degree, support each other. Energy labels fit very well into the rational choice behaviour; they help people to make rational

shopping decisions. But this is also the case for theories that are more concerned about symbols and the meaning of consumption, like the dream society and the political consumerism. At last, energy labels are also a natural part of the routinised consumption and the theory of praxis.

However, consumers and their organisations are only one of the relevant stakeholders as far as energy labels are concerned. Before we discuss other stakeholders we have to clarify the stakeholder concept. What do we mean by a *stakeholder* approach? The “classical” stakeholder concept was developed within the management theory dealing with the relationship between business firms and corporations on the one hand, and their environment on the other. It was an expansion of the well-known *shareholder* concept. Firms have to take into account not only the interests of their shareholders, but also their stakeholders. In his important book “*Strategic Management: A Stakeholder Approach*”, Freeman defines stakeholders as “*any group or individual who can affect or is affected by the achievement of the firm’s objectives*” (Freeman 1984). During the last twenty years this concept has been developed in various directions, and three of them are relevant for this paper

First of all we have seen the development towards a “*Corporate Social Responsibility*” (Carroll 1999; Windsor 2001). Businesses have responsibility beyond the economic performance of the company, and have to take into account other interests than their shareholders’. In addition the mandatory labels voluntary agreement within the European household appliance industry may also have contributed to the reduction of energy use for white goods

Secondly, the concept has expanded from the business management theory to the society; it integrates the responsibilities of organisations, policy makers, science and consumers (Dentchev and Heene 2003). This expansion has been controversial, but not without success (Scholl 2000). This means that also organisations and other political institutions may be regarded as stakeholders

At last, we have witnessed a discussion on the categorisation of various groups of stakeholders. The most relevant distinction is between primary and secondary stakeholders: “A primary stakeholder group is one without whose continuing participation the corporation cannot survive. Secondary stakeholder groups are defines as those who influence or affect, or are affected by the corporation” (Clarkson 1995: 196-197).

For the Energy label we have identified three groups of relevant stakeholders:

- *The EU commission and national political authorities responsible for energy efficiency and innovation as secondary stakeholders*

- *European household appliance industry and primary stakeholders and their organisations as secondary stakeholders*
- *European consumers as primary consumers and their organisation as secondary stakeholders*

We will below describe their positions in the revision of the EU Energy Label Directive.

The EU Energy Label stakeholder process

We have so far focused on the revision of the A-G scale, and we will mainly continue with this topic. The reason for this priority is the controversy we have registered in this specific discourse. However, both the EU Commission and a number of relevant stakeholders have used the windows of opportunities to raise other important questions concerning the EU Energy label. We will first use some space for these topics.

In the revision process the EU Commission has given priority to include other products under the Energy Label umbrella. There is a common agreement among all stakeholders to expand the label to other product categories such as televisions and non-households energy-using products, such as electrical motors. Furthermore, there is also an agreement to extend the labels to non-energy using product, such as windows and tyres. The reason for this latest expansion is that both products may have a positive impact on direct energy use. There is also a common understanding to link the revision of the Energy Label Directive to the new Directive on Eco-design. An agreement, or compromise, on the revision of the Energy Label has been one of the preconditions for a new version of the Eco-Design directive.

BEUC/ANEC on their hand have put the control regime and the enforcement of the directive on the political agenda. The reason for this position is the high measurement tolerance that exists in the testing of the standards. Without this tolerance a substantial large part of the products had to be placed in a lower category. This fact undermines the trust in the label among consumer and their organisations. In principle, there seems to be an agreement on the control regimes along two dimensions. First of all to accept a tighter tolerance in the measurement standards, in order to avoid that B-products are labelled in the A product category. Also the industry accepts this statement. However, it remains to be seen if the agreement also may be shown in practise.

Secondly, there also seems to be a theoretical agreement that the regime requires improved enforcement in respect of both manufactures meeting the set standard and retailers displaying the correct information. But it is still up to national political authority to decide both on testing regimes and possible penalties. Experiences have shown that very few

European countries have given priority to this task. There is no reason to believe that new European money will be available to make it possible for independent test institution to control the self-declaration from the industry and to carry out necessary inspections in the shops. This is crucial because independent testing is expensive and the testing procedure complicated. Furthermore, testing have shown that a substantial part of the products are not correct labelled.

Thus, the EU Commission has on April 1 2009; put a new proposal before the EU-Parliament on the Council. We have witnessed is a common understanding between the EU Commission, the consumer organisations and CECED - European Committee of Domestic Equipment Manufacturer, that the criteria must be dynamics. However, there has all the way been a disagreement about how this should be implemented, and this agreement was also brought into the discussion in the EU-Parliament. In the voting on April 25 the Parliament rejected the proposal from the Commission and voted in favour of retaining the closed A-C scale complemented by a validity period on the label, and that a regular rescaling should take place to ensure technological innovation are reflected on label. The Council will now need to come up with a common position on the text.

Three positions in the revision of the A-G scale

We are able to identify three main positions in the discourse, held by the following agents:

- The European Commission
- The European Household Appliance Industry
- European Consumer organisation and Environmental NGOs

1. The EU Commission wants to keep the well-known label but has at the same time decided to put forward some changes. The EU Commission want a flexible and dynamic label where the technical innovations easily are communicated to consumers, without bureaucratic barriers.

Figure 2

The new Energy label has kept the A-G scale, but has at the same time introduced the possibility to label products beyond the A criteria. The A+ and A++ labels are replaced with a percentage showing the additional savings they provide when the product is compared with a standard A classification. A -20%, means that the product is 20% better than the A class, A -40% means that it is 40% better (fig. 2).

The label is still a matter of self-classification. We know today that the tolerance between A and B class is relatively broad. This means that the new classes have to be 20% or 40% and not 17% or even 17, 5%. The classes have to be designed with a relatively broad pencil

2. CECED. This classification system is today supported by the European household appliance industry (CECED). However, in February 2008 CECED proposed a numerical alternative to the A-G classification (fig. 3).

Figure 3

In the stakeholder consultation in January/February 2008, CECED proposed to replace the A-G with a numerical open ended scale starting at 1. A direct translation will mean that A-G becomes 7-1, where 1 is the poorest quality. The argument for this change is the same as the EU-Commission; the label must be flexible and dynamic. When technical innovation takes place it is easy to expand the scale from 7 to 8 or 9 without any bureaucratic problem. An open-ended label will boost innovations. However, CECED have more or less left this position and is today supporting the new proposal the EU Commission. This means that the new proposed labelling system is a compromise they may live with.

3. Consumer organisations. This could also have be the case with BEUC/ANEC's position. However, the European consumer organisations have, together with the environmental NGOs, expressed their scepticism to the proposal from the EU-Commission., and have successfully convinced the majority in the Parliament about their positions.

BEUC/ANEC has the last year defended the existing A-G label. The reason for this is that the label has been a success; it has functioned as a communication tool in the market. There have definitely been problems with lack of testing and penalties, but consumer knows the label, and they trust the system. There are no reasons to make radical changes.

Figure 4

BEUC/ANEC is also in favour of a flexible and dynamic label. This could be taken care of by periodic changes in the criteria. This procedure is used by the classical eco labels in Europe such as the Blue Engel in Germany and the Nordic White Swan. The new version of the Energy Label could inform for which years the label is valid, for example from 2009 to 2011. New criteria could mean that the product must be downscaled from A to B. BEUC has argued against the position from the industry. The numerical 1-7 label will confuse consumer because they will not know if 7 really is the best product on the market. It also strange that for some product 7 will be the top quality product while 9 could be the best for other products. BEUC/ANEC has based their opinion upon feedback from national consumer organisations in

Europe, and on a consumer survey carried out in six European countries. Studies have shown that consumer in seven European countries prefer the A-G labelling system.

BEUC has also argued against the proposal from the Commission. The concept of – 20% may surely be misunderstood by consumers.

Conclusions: Barriers for change and situation of opportunities?

The main focus in the BARENERGY project is the identification of various barriers for change and how these barriers can be overcome by political and economic instruments from political authorities, businesses and NGOs. The perceived barriers to change among consumers are obviously also a part of the context that stakeholders operate in.

The mandatory EU energy label has been a success, in spite of some problems and short-comings. It has managed to constitute a legitimate platform for technical innovation in the household appliance industry and the label is used in the market communication between producers and sellers on the one hand and consumers and households on the other. Furthermore, there is a common agreement among all stakeholders that it has been a success, but that the label needs a revision, in order to continue the success story.

The energy label fits well several theories about consumption in general and linked to the potential for change more specific. Energy labels help consumers to make rational shopping decisions; they are a crucial factor in the routinised everyday life consumption; and they have relevance for the symbolic aspects of consumption. In the long run you both save money and contribute to save the world. This is probably one of the reasons behind the success.

How has this revision process influenced our six barriers? We are primarily concerned with three of the barriers: 1) technical innovation within the structural barrier, 2) Political barriers and 3) Knowledge barriers

- **Technical innovation.** During the last decade most of the producers were able to meet the A standards for nearly all product categories. This was probably the case already some years ago. This could be an indication that the label not any longer functioned as a platform for technical innovations within the industry. With the new dynamic labelling scheme the EU Commission probably will re-establish it as platform for radical change.
- **Political barriers.** The way the EU-commission has run the revision process has probably strengthened the political legitimacy of the Energy Labelling Scheme. Both

the consumer organisations and the industry associations have proposed alternative solutions to the revision, but they have both agreed that changes have been necessary. There are reasons to believe that these stakeholders will continue to support the energy label.

- **Knowledge and information.** This is more problematic. Studies have shown that consumer preferred the old label, and a new design may confuse large consumer groups. However, this is a matter of experiences and further research. If the main graphical design solution is preserved, which seems most probable, the brand recognition effect of the EE label will continue to work.

<http://www.energylabels.org.uk/eulabel.html>

. The EU Commission has for some years been working with a revision, and the need for radical changes was announced both in the Energy Efficiency Action Plan in 2006(COM (2006) 545) and in the Sustainable Consumption and Production Action Plan from 2008.

References

- Ajzen, I & Fishbein, M (1977): *Attitude-behaviour relations: A theoretical analysis and review of empirical research*, Psychology Bulletin 84, 888-918
- Ajzen, I. and Fishbein, M. (1980). *Understanding attitudes and predicting social behaviour*. Englewood Cliffs, NJ Prentice-Hall.
- ANEC, 2007. *A review of the range activity throughout Member States related to compliance with the EU Energy Label regulation in those countries*. ANEC-R&T-2006-ENV-008
- Baudrillard, J. (1988). *The System of Objects in Selected Writings*. Cambridge: Polity Press
- Bourdieu, P. (1992): *Distinction. A Social Critique of the Judgement of Taste*, London: Routledge
- Carrol, A.B. (1999). Corporate social responsibility. Evaluation of a definitional construct. *Business & Society* 38(3) pp. 268-295
- CECED, 2005. Energy-Efficiency. A shortcut to Kyoto targets. The Vision of European Home Appliance Manufactures
- CECED, 2008. Energy-Efficient Europe. The CECED solutions
- Clarkson, M.B.E. (1995). A Stakeholder Framework for Analyzing and Evaluating Corporate Social Performance. *The Academy of Management Review*, Vol. 20, No. 1 (Jan., 1995), pp. 92-117.
- Dentchev N.A. and A. Heene (2003). Toward stakeholder responsibility and stakeholder motivation: Systemic and holistic perspectives on corporate sustainability. Working paper 203/196: University of Gent, Belgium
- Douglas, M, and Isherwood, B. (1996) *The World of Goods. Towards an Anthropology of Consumption*. New Your and London: Routledge.
- Featherstone, M. (1991). *Consumer, Culture and Post-modernism*. London: Sage.
- Freeman. R.E. 1984. *Strategic Management: A Stakeholder Approach*. Boston: Pitman.
- Gronow, J. & Warde, A. (Eds.) (2001): *Ordinary Consumption*. London: Routledge
Princeton
- Ipsos MORI, 2008 Project Energy, Online Omnibus in 7 markets .May 2008
- Kaiser, F., Wolfing, S. and Fuhrer, U. (1999). Environmental attitude and ecological behaviour. *Journal of Environmental Psychology*, 19, 1-9.
- Lüthi, Sonja and Stø, Eivind. *Overcoming barriers to energy efficiency in cooking: A Swiss survey among key players in politics, business, and NGOs* Paper presented at the ecee 2009 Summer Study, June 2-5

- Micheletti, M. (2003) *Political Virtue and Shopping*. New York: Palgrave Macmillan
- Micheletti, M, Follesdal, A. and Stolle, D (eds), (2004) *Politics, Products and Markets*. New Brunswick and London: Transaction Publishers
- Miller, D. (1998). *A theory of shopping*. New York, Ithaca: Cornell University press.
- Rubik, F. and Scholl, G. (ed.) (2002): *Eco-labelling practices in Europe. An overview of environmental product information schemes*. Berlin: IÖW discussion paper Series, No. 162/02
- Reckwitz, A (2002): *Toward a Theory of Social Practices: A Development in Culturalist Theorizing*, *European Journal of Social Theory* (5)2: 243-63
- Rubik, F. and Frankl, P. (2005) *The Future of Eco-labelling. Making Environmental Product Information System Effective*. London: Greenleaf Publishing
- Scholl, H.J. 2002. *Applying Stakeholder Theory to E-Government. Benefit and Limits*. Working paper, NY: University of Albany.
- Strandbakken, P. (2006) *Produktlevetid og miljø. (Lifespan of products and the environment)*. PhD. dissertation, University of Tromsø, and National Institute of Consumer Research
- Stø, E (ed), (2004). *The involvement of consumers to develop and implement tools for sustainable households in the city of tomorrow. Final report to the European Commission*. Oslo: SIFO
- Strandbakken, Pål. (2009). *Sociology fools the technicians. Product durability and social constraints to eco efficiency for refrigerators and freezers*. *International Journal of Consumer Studies* 33 (2) pp 146 -150
- Stø, E., Throne-Holst, H. And Vittersø, G. (2005). *The Role of Consumers in Environmental Successes*. In Grunert, K.G. and Thøgersen, J. (Eds) *Consumers, Policy and the Environment. A Tribute to Folke Ölander: 325 - 356*. New York: Springer
- Stø, Eivind, Throne-Holst, Harald, Strandbakken, Pål & Vittersø, Gunnar (2008): *Review: a multi-dimensional approach to the study of consumption in modern societies and the potential for radical sustainable change*, in Tukker et al eds): *System Innovation for Sustainability. Perspectives on radical changes to sustainable consumption and production*, Greenleaf, London
- Svane, Ö. (2002). *Nordic Households and Sustainable Housing - Mapping Situations of Opportunity*. TemaNord 2002: 523, Nordiska Ministerrådet.

Throne-Holst, H, Strandbakken, P and Stø, E. 2008 Domestic energy use between opportunity and constraint. Barriers, bottlenecks and potentials for change in consumer behaviour. *Journal of*

Throne-Holst H., Stø, E. and Strandbakken, P. (2006). The Role of Consumption and Consumers in Zero Emission Strategies. *Journal of Cleaner Production (forthcoming)*

Veblen, T. (1925) *The Theory of the Leisure Class: An Economic Study of Institutions*. London: Allen and Unwin

Warde, Alan (2005): *Consumption and Theories of Practice*, Journal of Consumer Culture, Vol. 5 (2); 131-153, London, Thousand Oaks (CA) & New Delhi

Windsor, D. 2001. The future of corporate social responsibility. *The International Journal of Organization*

Appendix

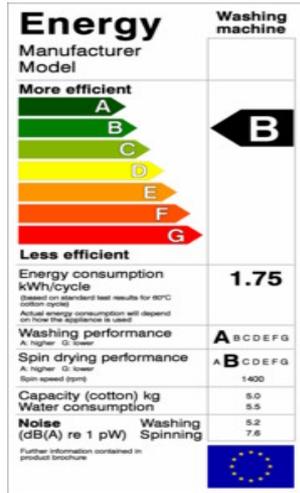


Figure 1

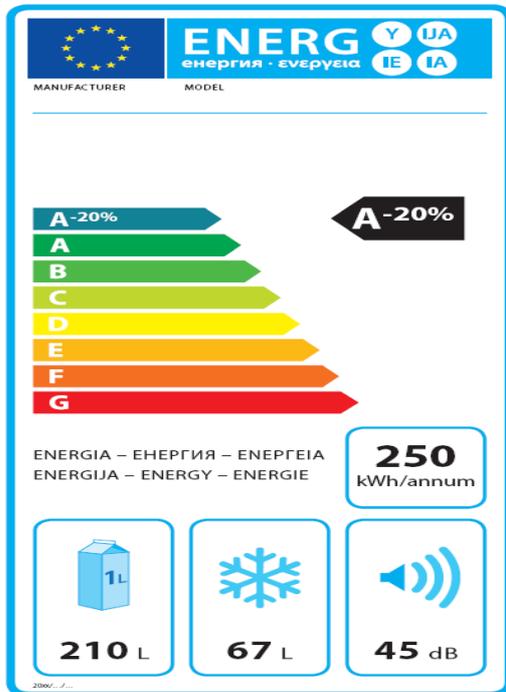


Figure 2



Figure 3

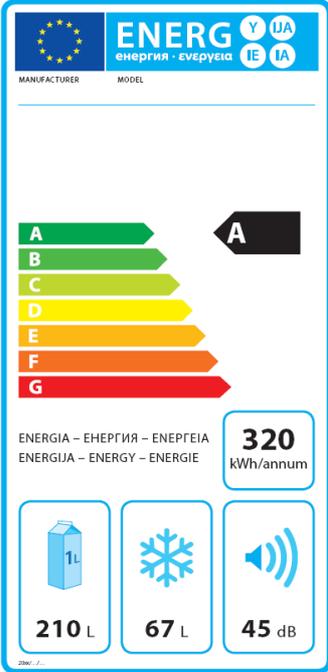


Figure 4