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# Consumer behaviour regarding energy products

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***Abstract:*** *The population increase along with its orientation towards consumerism, economic growth and the reduction of debts, determined by each individual's intention to progress all represent an interesting challenge if one considers achieving them sustainably. That being said, the present paper gives emphasis to some theoretical and practical information regarding the consumer behaviour regarding energy products. The first part presents some theoretical concepts related to consumer behaviour, both the individual and the organisational one, followed by the second part, which shows the concern for managing energy resources in the case of the top 50 companies from Romania.*

***Key-words:*** *energy, consumer, behaviour, sustainability*

## 1. Introduction

The first articles about the promotion of renewables appeared during the energy crisis of 1973, when alternative energies were becoming interesting for specialists in the field. After this time, the issue of such resources has been increasingly unveiled. In treatises, the first article was that of Nakarado, in 1996, i.e. "A marketing orientation is the key to a Sustainable Energy Future", which proposes the analysis of consumer preferences as a success parameter in promoting renewable energy resources.

In the '60s, the theme of consumer behaviour started to be discussed as a distinct field, with strong influences and contributions from other specific fields such as psychology, sociology, anthropology, and so on. There are various definitions in treatises: for example, The American Marketing Association describes it as "a dynamic interaction on impression and perception, behaviour and common situations in which people conduct their exchange activities".

All of this behaviour is based on the receptivity of information by the consumer, which, in the opinion of Stigler, the Nobel laureate for economics, "is not an easy or pleasant task for most people".

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Up to the decision to purchase, all this information processing involves the use of intelligence in choosing the best option. The psychologist Howard Gardner argues that there are several types of intelligence, different from those that help people do well in school. They help people solve various situations that occur in life. On this basis, Goleman approaches the contemporary term of ecological intelligence, which ”allows us to apply what we learn about how human activities affect ecosystems, so that they do less harm and lead to a sustainable livelihood - now extended to the entire planet”.

As regards energy products, which represent the focus of the present paper, Devine-Wright believes that there are three areas in which different technologies of renewable energy sources and principles of energy efficiency can be applied: the micro level, which requires a single building, household, etc; the meso one, which involves a region, community, and the macro one, which involves their use on a large scale, such as energy parks.

Numerous successful initiatives can be seen on all these three plans, both worldwide and in Romania, which confirms consumers' orientation towards sustainability. Moreover, by their concern for this type of products and services, the development of sustainable and interesting businesses can be determined. In Romania, for example, a town in the county of Maramures, Seini, known as one of the most polluted places, is now producing electricity for itself, through a biogas plant which converts waste into heat and electricity.

## 2. Theoretical aspects regarding consumer behaviour regarding energy products

According to Kotler, marketing represents a social and managerial process by which individuals and groups of individuals, having a certain value, get what they need and want by creating, offering and exchanging products. There are no two ways about simple products that serve a population mass, or mass resource exploitation, or about consumers who do not inform themselves. In this respect, competition has increased and has become tougher, consumers are informed and look for quality, cooperation between production and the market is more complicated in that it takes into consideration the available resources and the environmental protection.

In this context, marketing involves the strategic planning of production geared not only to achieve short-term profit, but also to generate long-term value. Thus, considering the circumstances, the same author argues that “green opportunities will arise for companies and marketers that can create new solutions related to prosperity through environmental protection”. From the point of view of the focus on value, he identified four market segments based on ecology:

| Market segmentation | | | | |
|---|---|---|---|---|
| | **Original** | **Pragmatic** | **Conformist** | **Prudent** |
| Profile | ▪ environment lover,<br>▪ strong emotional and spiritual motivation to ecological products<br>▪ seeks competitive advantage through eco-innovation | – pragmatic concern, environment protection<br>– rational motivation to ecological products<br>– aims to increase efficiency and cost savings | - - conservative of environment,<br>- - waits to see the utility of the products<br>- - is already using standard products | - does not think in terms of ecological products |
| Market position for targeting | Innovative product | More value with less impact | Table-use product | It is not worth the trouble |

Source: Kotler (2010), "Marketing 3.0.", Publica, p. 217

Table 1. *Market segmentation*

Conformists are those who hold the majority and represent the part with the greatest interest in marketers. This is because they are customers who can be easily influenced to make responsible decisions, and so marketing people ought to keep them away from inappropriate choices.

Pragmatic people are the most difficult ones, because their decisions are based on reason, so it will be very difficult to determine them to change, as they are rigid, especially if additional costs are involved. This category could include most of the electricity consumers who have the possibility to invest in energy efficiency on the long term.

The originals, characterised by fanaticism for nature, are those who must be taken into consideration by the innovators who will be presented later in the present paper; they are interested to take part in the process of making products that are offered. Therefore, the consumer behaviour of the present needs to be analysed considering the transition from the classical relationship company-consumer to the prosumers-company relationship, driven by the new wave of technology based on sustainable development.

Prosumers are actually ordinary consumers who are engaged in a productive-creative process and become aware of their value. This change requires a sustained effort from the part of the companies which want to use such innovative techniques in order to motivate simple consumers to become producers at the same time. Godin believes that business success is not possible without the support of communities. It is easy to understand that the benefits are shared: on the one hand, consumers are involved in creating the product that will meet their needs, and, on the other hand,

companies are encouraged to direct resources towards those products that bring the highest benefit to their clients. But how to do that in renewable energy?

Whether we are talking about industrial consumers or householders, they will always be interested in obtaining a product at the lowest costs and corresponding in terms of quality. However, in recent years, awareness of how mankind's energy needed for living affects the environment has become of real interest, the beneficiaries being increasingly interested in how the energy consumed by people is obtained. Therefore, their involvement in the process of innovating in renewable energy, by identifying requirements, can represent a catalyst for progress in this area. There are already examples related to this "awareness", if we refer to electricity and heat produced by solar panels mounted on houses, wind energy exploited independently in households and/or enterprises, small hydro plants installed in favourable areas in order to serve neighbouring municipalities.

## 3. Organisational consumer behaviour

It is important to analyse the organisational consumer behaviour: firstly, because it is a field related to sustainable development and also because nowadays individual consumers are more interested in what is "embedded" in the products or services they get.

Between 1973 - 1981, after the increase of energy prices, many companies appointed supervisors among employees to monitor energy consumption. "The business market", as it is called by Kotler, is characterized by a large volume and value of goods, both sold and purchased, compared to the consumer.

Given that we deal with a large volume of products, services and complex decisions involved in the buying process, long-term relationships between the players of the market become of capital importance. Apart from the field of activity, the environmental challenges for sustainable development should be taken into consideration, together with the waste and pollution management, the procurement and resource management, including the energy.

In the decision making process of organisational consumers, economic factors should be the most important; however, there are a lot of other aspects which are conducive to the decision of buying products/services, like: environmental factors (demand, economic climate, interest rate, technology challenges, political challenges, competition, considerations of social responsibility), organisational factors (objectives, politics, procedures, organisational structures, systems), interpersonal factors (interests, authority, statute, empathy, persuasion) and individual factors (age, income, studies, position in company, personality, attitude towards risk, culture).

From an environmental point of view, depending on the overall economic condition, the process of buying could be encouraged or not. Assuming that an

economic recession exists, no matter the field in which the company operates, it will avoid investments in energy efficiency equipment because they involve some considerable initial costs; it will always prioritize other important investments for its current activities.

If we consider interpersonal factors, the personal interest of every decision maker becomes important, should it be transferred to the organisation. The benefits for the company would be that different personalities can interact so that the decisions being taken are the most favourable possible. In a company there may be decision makers oriented towards energy solutions, sustainability, for example.

The last category of factors comes together with the interpersonal one, so that the diversity of participants in the buying process in terms of age, income, education etc. leads to different opinions and different styles in the buying decision.

## 4. Qualitative research regarding energy sustainability in the top 50 companies in Romania (by annual turnover)

The sample used for this research comprised 50 companies ranked in terms of their annual turnover, as shown on the web site www.doingbusiness.ro, based on 2015 financial reports submitted by the companies operating in Romania. These companies are operating in various fields of the Romanian economy, with a cumulated turnover of about 44 billion euros in 2015 (about 27% of 2015 GDP). We are dealing with companies that operate mainly in industry and commerce, domains with a significant contribution to Romania's GDP.

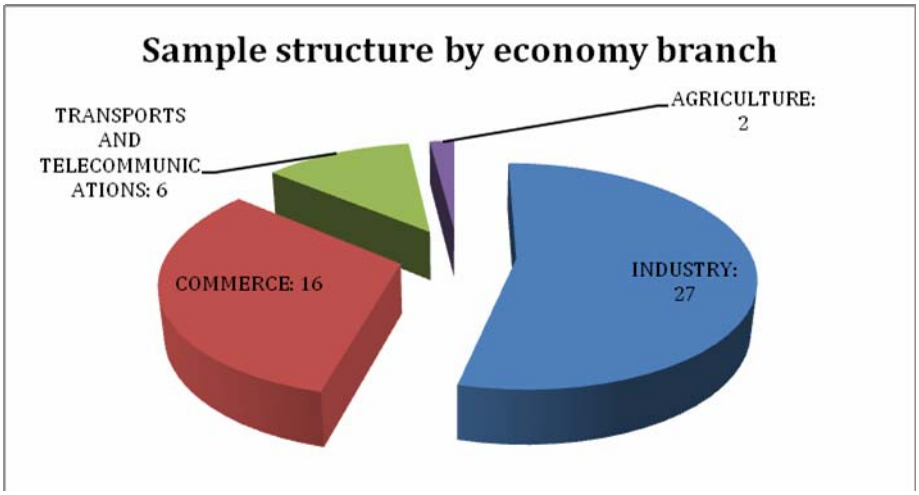


Fig. 1. *Sample structure by economy branch*

The purpose of this marketing research is to determine the extent to which the largest companies operating on the Romanian economy consider sustainability in their operations, with emphasis on energy and its environmental impact.

To do this, we first analysed a number of features regarding the reports published by those companies (in the cases where they exist), as follows:

- Report availability
- Report reference year
- Report availability in Romanian
- COP21 partnership

It was revealed that 72% of the companies subject to this research had a sustainability report (or a similar document), corresponding to a number of 37 companies out of 50. Furthermore, only 7 out of the 37 reports available were published in Romanian, 2 in German, and the rest in English.

The reference year was also taken into account to see how companies considered updating their information regarding sustainability: 46% of the available reports were from 2015, 49% from 2014 and 5% from 2013.

The analysis followed also the engagement in supporting and promoting environmental policies, using as a benchmark the active involvement in the conference COP21 held from 30 November to 12 December 2015 in Paris, under the aegis of the United Nations, with the topic of global climate change. Based on the information available on the official conference site, it could be determined that 6 out of the 50 companies considered were involved in this major conference The number, though it seems small, is quite important for a country the size of Romania. In this respect, we can mention Orange, Carrefour, Michelin, Enel and Renault Group (present in our country through Dacia and by its division of sales of commercial vehicles).

After analysing the characteristics of the reports and the importance given to the publication of this kind of information, emphasis was given to the sustainability analysis of the actual data regarding energy and the environment, as follows:

- Concern for reducing CO2 emissions and energy consumption
- Use of renewable energy
- Optimisation of logistics to minimize environmental impact

### 4.1. Concern for reducing CO2 emissions

The analysis of the data available in the sustainability reports revealed that almost all companies declared a serious concern for reducing CO2 emissions and energy consumption. The situation is somewhat normal since reducing energy consumption implies lower CO2 emissions (to a greater or lesser degree, depending on the field of activity). This goal is especially important in energy-intensive domains, both through the production process and the product itself, such as the automotive industry.

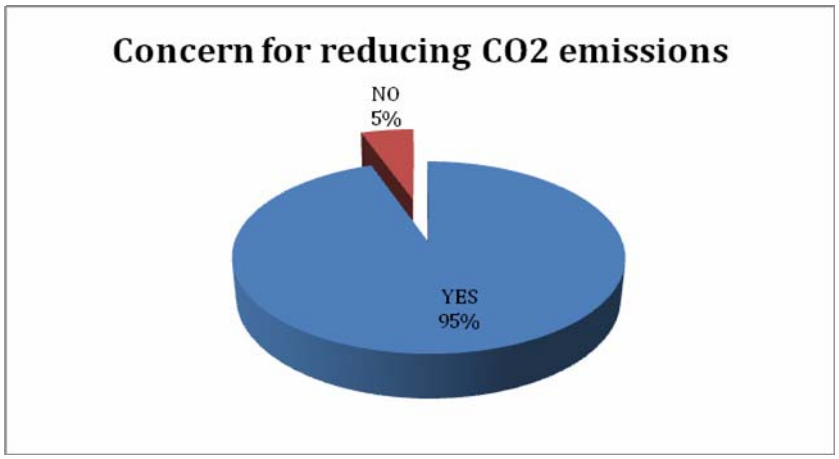


Fig. 2. *Concern for reducing CO2 emissions*

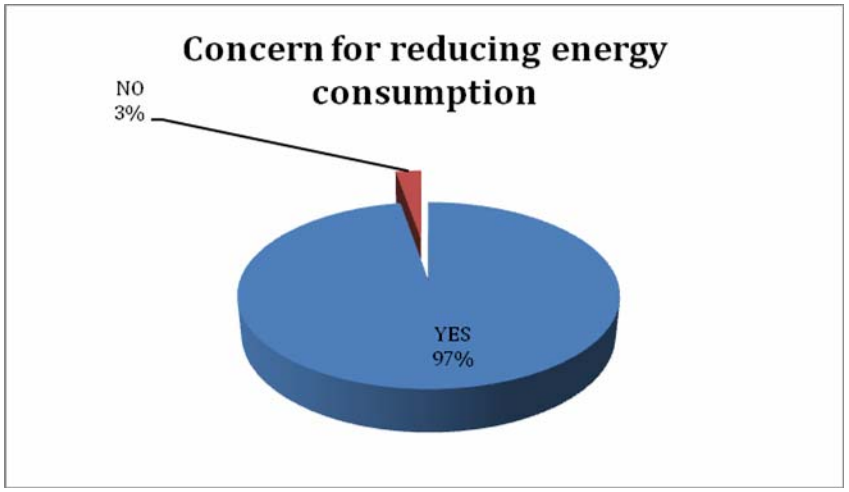


Fig. 3. *Concern for reducing energy consumption*

For example, the two giants of the automotive industry present in Romania, Ford and Renault, both show in their sustainability reports data on reducing CO2 emissions and the types of investments made to achieve these results. Thus, the Renault group, present in Romania through Dacia Automobile and directly through its division of sales of commercial vehicles declares a target of 3% annual reduction between 2010 and 2016 of its global carbon footprint, impact deriving both from vehicle emissions during their lifespan and from the manufacturing process. For its operations, the manufacturer gives examples such as investments in LED lighting,

heat energy recovery contained in the hot exhaust air from the process of production, and new installations of painting that are more efficient in terms of energy usage. Although it lacks a sustainability report of its own, Dacia Automobile publishes on its website a series of similar measures meant to reduce energy consumption and limit carbon dioxide emissions.

US giant Ford, present in Romania through the factory in Craiova, presents a series of similar measures with the same aim: to reduce emissions of greenhouse gases and energy consumption. For example, the group globally invested about 25 million dollars in 2014 only in LED lighting, expecting savings of about 7 million dollars per year from reduced electricity consumption.

The Volkswagen Group only present in Romania through its subsidiary, the Porsche Romania group, which sells vehicles in our country, has similar policies to reduce emissions and energy consumption. For example, it states in its report that it involved its employees in providing solutions to save energy. An example would be to apply labels in factories to encourage energy saving. The group also replaced worldwide obsolete IT equipment with high energy efficiency equipment (notably monitors).

### 4.2. Use of renewable energy

The data available showed that only 43% of the companies promote the use of renewable energy.

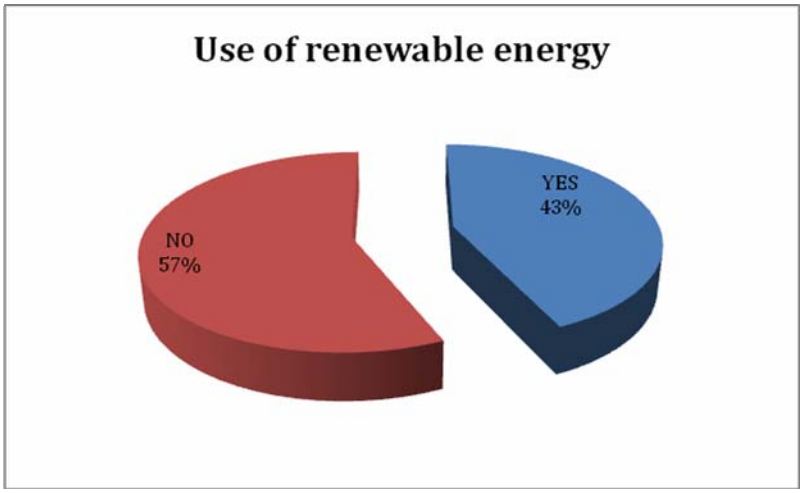


Fig. 4. *Use of renewable energy*

From all the areas of activity present in the sample, a good representation is held by the automotive industry, telecommunications and energy production. Regarding this

one, the most significant representative for the Romanian market is the Austrian group OMV, present in Romania through Petrom. The company's 2014 report focuses on its strategic vision related to future fuels (called Eco-Innovation), giving as examples investments in promoting hydrogen as an alternative fuel both through its distribution (for now only in Austria) and its sustainable production. It also sought alternative fuels with a lower environmental impact such as Syngas (fuel made from water and carbon dioxide) or fuel produced from micro-algae and agricultural products.

Considerable investment in renewable energy has also been made by the German group E.ON, present in Romania through its subsidiary with the same name. Thus, in the 2015 report, it states that, starting from 2007, it has spent over 10 billion euros for using renewable energy, recording a percentage of 14% of renewable energy in the total energy produced by the company (mainly from wind power, with a 3391 MW installed capacity in 2015).

The Italian group Enel (also present in our country) has invested heavily in the production capacities of energy from renewable resources: for example, about 31% of its production of electricity in 2015 and the percentage increases to 41% if we refer to production capacities.

### 4.3. Optimisation of logistics to minimize environmental impact

Regarding the optimisation of logistics to minimize the impact on the environment, a relative balance could be noticed between the companies that took this aspect into consideration and those which did not.

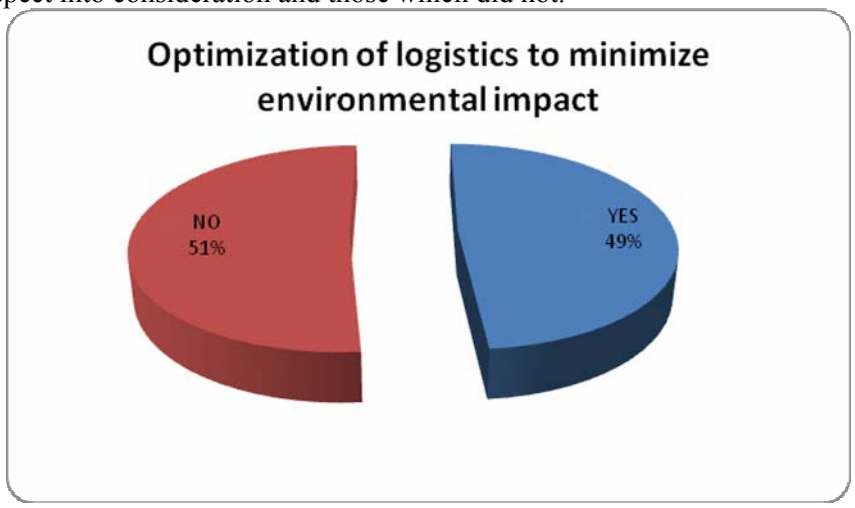


Fig. 5. *Optimisation of logistics to minimize its environmental impact*

Although logistics is an indispensable part of any economic activity, regardless of its scope, the business impact is different. Thus, among the fields present in our hierarchy, logistics plays a key role for the retail segment, and again the automotive industry. It is indeed gratifying that for the overwhelming majority of actors operating in these two areas, there is a real concern for efficient logistics in terms of the environmental impact, as shown by their reports. Thus, the French retailer Carrefour plans to reduce CO2 emissions by 30% from logistics operations by 2025, rethinking them in order to reduce distances between warehouses and stores and optimise trucks loads. It also tries to use cleaner fuels for its transport vehicles. Similar lines of action were followed by Coop, the Swiss group present in Romania through Selgros cash & carry, by investing in environmentally friendly transport vehicles worldwide and moving certain transports from road to rail. Also, the German group Metro, also present in Romania, aims to reduce the distances between stores and warehouses (this also involves purchasing products from local suppliers), the use of a fleet of vehicles that is as environmentally friendly as possible, and the optimisation of loading transport vehicles, including creating special packaging designed to achieve this goal.

## 5. Conclusions

No matter the type of consumer taken into consideration, it is obvious that there is an increasing interest in the energy resources that are being consumed, and most of all, in the impact these resources have on the environment. Organisations on the other hand attach increasing importance to this aspect, as they have become aware that, irrespective of the more or less severe environmental regulations, protecting the environment is a must if we want to have a future on our planet.

## 6. References

Blithe, J., 1998. *Consumer Behaviour*. Bucharest: Teora.

Devine-Wright, P., 2007. *Reconsidering public attitudes and public acceptance of renewable energy technologies: a critical review*. University of Manchester, published by School of Environment and Development

Gardner, H., 2005. *Multiple intelligences and education* [online] Available at: <http://academic.regis.edu/ed205/gardner.pdf> [Accessed 01 October 2016].

Goleman, D., 2009. *Ecologic Intelligence*. Bucharest: Curtea Veche.

Kotler, P., 1997. *Marketing Management*. Bucharest: Teora.

Kotler Ph. et al., 2010. *Marketing 3.0.* Publica, p. 217

Stigler, G., 1961. The economics of information. *The Journal of Political Economy*, Vol. 69, issue 3, p. 216.

Adevarul.ro, 31 July 2016. *Seini este primul oras din tara care isi produce singur energia electrica, din gunoi* [online]. Available at: <http://adevarul.ro/locale/baia-mare/seini-oras-isi-produce-singur-energia-electricadin-gunoi-1_579deb765ab6550cb85b8dc7/index.html> [Accessed 2 October 2016].

Arcelormittal.com *Raport de Responsabilitate Corporativă 2013* [online] Available at: <http://galati.arcelormittal.com/~/media/Files/A/Arcelormittal-Romania-Galati/Raport%20Responsabilitate%20Corporativa%202013%20ROM.pdf>

Arcelikas.com *Sustainability Report 2015* [online]. Available at: <http://www.arcelikas.com/UserFiles/file/KSS2015_30_06_2016.pdf>

Autoliv.com *Annual report 2014* [online]. Available at: <https://www.autoliv.com/Investors/Financial%20Reports/AR2014.pdf>

Bat.com *Sustainability Summary 2015* [online]. Available at: <http://www.bat.com/group/sites/uk__9d9kcy.nsf/vwPagesWebLive/DO9DCL3P/$FILE/medMDA87Q5T.pdf?openelement>

Cargill.com *2015 Corporate Responsability Report* [online] Available at: <http://www.cargill.com/wcm/groups/public/@ccom/documents/document/na31965255.pdf>

Coca-colahellenic.ro *Raport de responsabilitate corporativa 2012-2014* [online] Available at: <www.coca-colahellenic.ro/Download.aspx?ResourceId=191095>

Continental-corporation.com *Annual Report 2015* [online] Available at: <http://www.continental-corporation.com/www/download/portal_com_en/themes/ir/financial_reports/download/ar_2015_en.pdf>

Coop.ch *Sustainability Report 2015* [online] Available at: <http://www.coop.ch/pb/site/common/get/documents/coop_main/elements/ueber/geschaeftsbericht/2016/_pdf/COOP_NHB_2015_e_low.pd>

Delphi.com *2015 Corporate Social Responsibility Report* [online] Available at: <http://delphi.com/docs/default-source/responsibility-docs/2015-delphi-csr-report.pdf>

Enel.com *Sustainability Report 2015* [online] Available at: <https://www.enel.com/it-it/Documents/report2016/bds_2015it.pdf>

Eon.com *Sustainability Report 2015* [online] Available at: <http://www.eon.com/content/dam/eon-com/Nachhaltigkeit/CS-Report-2015/downloads/EON_Sustainability_Report_2015_final_PDF_EN.pdf>

Ford.com *Sustainability Report 2014-2015* [online] Available at: <https://corporate.ford.com/microsites/sustainability-report-2014-15/index.html>

Groupe-auchan.com *Activity and Sustainable Development Report 2015* [online] Available at: <http://asp.zone-secure.net/v2/index.jsp?id=198/2213/64199&lng=en>

Group.renault.com *2015 CSR Report* [online] Available at: <https://group.renault.com/wp-content/uploads/2016/07/rapport-rse-2015_en_.pdf>

Hidroelectrica.ro *Raport de mediu 2011-2014* [online] Available at: <http://www.hidroelectrica.ro/rapoarte/Raport%20Mediu%202011-2014_RO.pdf>

Jt.com *JT Group Sustainability Report 2015* [online] Available at: <https://www.jt.com/csr/report/pdf/JT_Group_Sustainability_Report_FY2015.pdf>

Metrogroup.de *Corporate Responsability Report 2013/*2014 [online] Available <http://reports.metrogroup.de/2013-2014/corporate-responsibility-report/>

Michelin.com *Document de Reference 2015* [online] Available at: <http://www.michelin.com/fre/finance/actionnaire-individuel/kit-information-actionnaire>

Omv.com *Sustainability Report 2015* [online] Available at: <https://www.omv.com/SecurityServlet/secure?cid=1255753870553&lang=en&swa_id=348194127506.8143&swa_site=>

Orange.ro *Raport de responsabilitate sociala 2014* [online] Available at: <https://www.orange.ro/about/2014_raport_csr.pdf>

Pmi.com *PMI Communication on Progress 2015* [online] Available at: <http://www.pmi.com/eng/Documents/Philip%20Morris%20International%20Communication%20on%20Progress%202015.pdf>

Porsche.com *Sustainability Report 2015* [online] Available at: <https://newsroom.porsche.com/en/sustainability/downloads/en/Porsche_SustainabilityReport2015.pdf>

Scribd.com *Carrefour 2015 annual activity and responsible commitment report* [online] Available at: <https://www.scribd.com/doc/313471818/Carrefour-2015-Annual-Activity-and-Responsible-Report>

Telekom.ro *Raport de responsabilitate corporativa 2014* [online] Available at: <https://www.telekom.ro/images/Rapoarte_CR/Raport_de_sustenabilitate_2014_Telekom.pdf>

Volkswagenag.com *Sustainability Report 2014* [online] Available at: <http://www.volkswagenag.com/content/vwcorp/info_center/en/publications/2015/04/group-sustainability-report-2014.bin.html/binarystorageitem/file/Volkswagen_Sustainability_Report_2014.pdf>