

**BMW'S APPROACH TO GLOBAL WARMING AND ENVIRONMENTAL
MANAGEMENT: CORPORATE SOCIAL RESPONSIBILITY OR GREENWASHING?**

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ABSTRACT

“Corporate Social Responsibility” (CSR) is a term that has been used for several decades. Recently, CSR has become more visible with strong global dimensions as reflected in the United Nations Global Compact which was launched in 2000 and now has 4,100 participating companies from more than 100 countries. One increasingly important dimension of CSR is environmental management.. This paper will examine the BMW Group (BMW) in the context of two prominent academic corporate social responsibility frameworks: the traditional approach as described by Davis and Frederick (1984), and a recent conceptual innovation by Basu and Palazzo (2008).

An important issue is to what extent is BMW using its engineering heritage in a socially responsible manner to optimize its environmental footprint or to what extent is BMW conducting sophisticated 21st century public relations by disseminating many publications detailing its environmentally friendly activities while continuing business practices that contribute to global warming. Environmental activists have used the term, *greenwashing*, to describe “the practice of companies disingenuously spinning their products and policies as environmentally friendly....It is a deceptive use of green PR or green marketing. The term *green sheen* has similarly been used to describe organizations that attempt to show that they are adopting practices beneficial to the environment.” (Wikipedia)

CORPORATE SOCIAL RESPONSIBILITY MODELS

One of the more prominent social responsibility models of the last three decades has been discussed by Davis and Fredrick (1984) in several editions of their textbook. Frederick is of particular significance because he has served as Dean of the Joseph Katz Business School at the University of Pittsburgh. Davis and Frederick divide business/society interactions into two major categories: primary and secondary: “primary interactions include employees, stockholders, wholesalers and retailers, creditors, suppliers, customers, and competitors; secondary interactions include local communities, governments, social activist groups, media, business support groups, and public opinion”. They argue that many corporate decisions reflect the dynamic interaction among these many stakeholders. Making profits and satisfying only the shareholders will not suffice; corporations also have to become “socially intelligent” by combining the goals of economic gains and social contributions. Modern corporations need to understand that they need to be accepted by the social groups as corporations that care for their social surroundings and the environment by improving society’s quality of life. Different social groups are the judges of what quality of life means. The essence of the Davis and Frederick approach can be best described in their own words: “In the long-run, the greatness of business as an institution may depend as much on its heart as on its brain” (Davis and Frederick, 1984).

A fascinating recent addition to the methodology for analyzing Corporate Social Responsibility has been developed by Basu and Palazzo (2008). They emphasize analysis of “internal institutional determinants, such as the mental frames and sensemaking processes”. This approach is particularly pertinent to BMW, because the mindset of the company appears to be

based on a strong engineering heritage. According to its many publications, BMW since 1973 has been actively pursuing many research and development projects to minimize the environmental impact of its products. These documents include detailed analysis of BMW's activities including the CO₂ emissions of their automobiles, model by model. Strategically, BMW's environmental approach can be summarized in the context of the Basu and Palazzo terminology as follows: BMW's mindset is engineering and its sensemaking processes have decided on a long term basis to deploy scientific talent to pursue environmentally friendly strategies, such as hydrogen cars, while in the short-term trying to minimize the impact of what BMW (as well as other German automobile companies and their unions) consider to be aggressive environmental regulation in the form of tax penalties for high CO₂ emissions that could significantly reduce BMW revenues. BMW argues in favor of a gradual approach to environmental sustainability. BMW heralds the low CO₂ emissions of its small Mini cars, the BMW 1 and the BMW 3 series automobiles, while fighting regulations that would tax its more powerful BMW 5 and 7 series vehicles.

CORPORATE SOCIAL RESPONSIBILITY AND GLOBAL WARMING

Before analyzing in more detail the Corporate Social Responsibility approach of BMW, a description of its broader stakeholder environment, particularly the political dynamics in Europe is appropriate. The 21st century has seen a great emphasis on global warming, especially since the wide distribution of the Al Gore film, "An Inconvenient Truth," which resulted in the former American Vice-President receiving the Nobel Peace Prize. In Europe, the debate on how to minimize CO₂ emissions has been extensive. Each European country has the potential to regulate automobiles, but there is widespread recognition that an European Union approach is more appropriate. Thus, a fierce battle is under way about the best EU policies to lower the CO₂

emission levels of automobiles, and how much taxes should be applied to vehicles that exceed EU standards. If the CO₂ taxes are high, the purchases of profitable luxury cars could dramatically decline. The stakeholders associated with the automobile industry would be strongly affected, especially in Germany. In fact, the political leadership of Germany is united in demanding that any CO₂ regulations consider the economic impact and related effects on German jobs (Mahony, 2007).

The European Commission on December 2007 proposed to lower the CO₂ emissions for cars to 120 grams per kilometer by 2012, with the introduction of fines of 95 euros per gram/km by 2015 for those manufacturers who fail to comply (Vucheva, EUObserver 2007). According to this proposed regulation, car manufacturers will have to achieve a level of emissions of 130 grams per km through cleaner engines and an additional 10 grams through other means, such as more efficient air conditioning, the use of biofuels, and changes to tires. Of course these measures burden manufacturers of larger cars, especially Germany car makers. BMW characterized these measures as naïve steps that would favor producers of smaller cars, such as France's Peugeot and Italy's Fiat. The figures from the 2006 data show that German car groups increased CO₂ emissions from new cars sold by an average of 0.6%, while French and Italian group lowered the emissions by 1.6%. The current average across manufacturers is 160 grams per kilometer and account for 12% of the EU's total CO₂ emissions (Vucheva, 2008).

The response from BMW to the EU efforts to lower the CO₂ emissions came through one of its publications:

...in the discussion of climate change and individual traffic, many interdependencies must be taken into account in order to arrive at a holistic environmental improvement. This is a fact that is often neglected in public debate, which often proceeds along lines of either black or white.

Nevertheless, because of its technological competence, innovative strength and integrative approach to solutions, the BMW Group is confident that the company is in a good position on the road to sustainable mobility. But achieving this goal requires new and universally reliable conditions. A uniform upper limit of CO₂ emissions for all automobiles holds significant risks for business development and the earnings performance of many companies. The BMW Group argues emphatically for variable CO₂ limits adapted to the various classes of vehicles and thus to customer demands and expectations. A uniform limit on all manufacturers and vehicle classes denies pure physics and is both ecologically and economically counterproductive. An environmentally effective improvement requires measures relating to all vehicle classes (The BMW Group, Sustainable Value Report 2007/2008, p. 27).

In the same publication the BMW Group presented the transportation sector's share of worldwide CO₂ emissions in 2007. This is probably a reply to the groups that have focused mostly, sometimes only, on car manufactures in order to lower the CO₂ emissions. In a chart (see Appendix, Table C), it clearly emphasized that there are many areas where world society should expand environmental efforts and that it should not focus only on the automobile industry.

After all the reactions and the fear of loss of thousands of jobs, the EU environment commissioner, Stavros Dimas, indicated on April 2008 that he is "willing to ease pollution-reducing targets for German car manufacturers so long as the general target across Europe is maintained and if large and small car manufacturers contribute differently to the overall target of reducing CO₂ emissions to an average of 120 grams per kilometer by 2012" (Mahony, 2008). This was a great victory on behalf of the large German car makers, such as BMW, Audi, Mercedes and Porsche. Let us also not forget that Berlin and Paris have for a long time been debating CO₂ emissions, with producers of smaller energy-efficient cars fighting larger car manufacturers. German Chancellor Angela Merkel and French President Nicolas Sarkozy on February 2008 agreed to "the setting up of a working group to try to see if both sides could work out their differences, with no success to date" (Mahony, 2008).

Joining in the debate has been the prominent Danish climate skeptic, Professor Bjorn Lomborg, who disagreed with the Commissioner's climate package designed to reduce CO₂ emissions by 20% of 1990 levels by 2020. Professor Lomborg argued that the problem of climate change is a problem that should be handled over a 50-100 year period, and not by immediate and very expensive cuts to emissions: "The EU feels like it must do something over the next five to ten years. But if we cut deeply right now, it will cost much more than the euro 60 billion the Commissioner reckons it will" (Philips, EU Observer, 2008). Lomborg called for spending the money on research and development of new technologies that would solve the problems in the long run. Commissioner Dimas countered that the ingenuity to solve the climate change problems may take years. "To wait for technological solutions to come about before policymakers make any change is a dangerous perspective. What if human ingenuity does not deliver in time?" (Philips, EUObserver, 2008).

The various stakeholders in Europe are vigorously debating the appropriate level of regulation and taxes for various classes of automobiles. Davis and Frederick could argue that this discussion is taking place within their social responsibility framework of primary and secondary stakeholders.

ECOLOGICALLY SUSTAINABLE COMPETITIVE STRATEGIES

To accommodate both primary and secondary stakeholders, one approach is to pursue ecologically sustainable practices. BMW since 1973 has pursued what it considers environmentally friendly policies by consuming fewer resources in its production practices. In 1993, BMW adopted environmental guidelines based on the Charter for Sustainable Development of the International Chamber of Commerce. Since the early 1990's, BMW has been pursuing "the

aspiration to factor in relevant ecological implication of vehicle components” by introducing Life Cycle Assessment (LCA), which has culminated in a widespread network of recovery centers in the EU for the acceptance and recycling of vehicles. As a result, customers have been able to return BMW vehicles without charge since January 1, 2007. Also, since 1994 the company operates in Munich, Germany, a Recycling and Dismantling Center which is “today the world’s leading facility of this kind and a certified specialized waste management operation, as well as a competence center for education and further training” (The BMW Group - Sustainable Value Report, 2007/2008, p. 38). Moreover, BMW installs components in its vehicles that are produced from materials that are recycled from old parts. Recyclables comprise 15% of the total weight of plastic components, with intentions to increase this to 20% (The BMW Group - Sustainable Value Report, 2007/2008, p. 38).

More recently, BMW signed the International Declaration on Cleaner Production from the United Nation’s Environmental Programme of 2001. One of BMW’s stated commitments is to “make preventative environmental protection the model of its own production processes” (The BMW Group - Sustainable Value Report, 2007/2008, p. 40).

The long-term ecological strategy of BMW emphasizes hydrogen as an alternative fuel. The BMW Group’s hydrogen-powered vehicle with combustion engine is based on the BMW 7 series. The current sixth generation of hydrogen-powered vehicles has both a hydrogen and a petrol tank. With this dual mode combustion engine, the vehicle can be used in the early development phase when hydrogen filling stations are few and far between. Thus, automobile drivers will maintain their freedom of movement while the hydrogen infrastructure is still being established. The first 100 vehicles were presented in 2007 to prominent individuals in business, politics, and society.

The BMW Group has cooperated with a network of industrial partners on the development of its hydrogen automobile. For example Magna Steyr is developing and supplying the tank for the hydrogen. This cryo-tank holds 140 liters of cryogenic liquid hydrogen and permits a range between 200 and 300 kilometers in addition to that provided by the petrol tank. To be able to use hydrogen-powered vehicles, it is essential to have a fully functional infrastructure, including a “uniform” tank-filling system for liquid hydrogen available from a wide network of hydrogen filling stations. The infrastructure also requires the establishment of a standard tanking system that is just as easy to use as existing ones.

In 2001, BMW initiated the Clean Energy Partnership (CEP) in order to advance practical hydrogen technology in Germany. The project with a budget of 33 million euros and supported by the German Federal Government, was scheduled to run until 2007 (The BMW Group - Sustainable Value Report, 2005/2006, p. 29). In order to produce the hydrogen, CEP suggests using, as far as possible, energy whose generation does not cause CO₂ emissions. This includes hydrogen generated by solar, water, and wind power or the gasification of biomass. The BMW Group provides the CEP with hydrogen cars.

The BMW Group supports the worldwide introduction of hydrogen as a fuel through international partnerships, projects and initiatives. Specialists of the BMW Group have been appointed to numerous international advisory bodies, the California Hydrogen Highway Implementation Advisory Panel, the European Hydrogen and Fuel Cell Technology Platform, and the Deployment Strategy Panel (The BMW Group - Sustainable Value Report, 2005/2006, p. 30). Moreover, BMW is the co-founder of the Transport Energy Strategy (TES); members of this group are leading companies in the petroleum, energy production, and automotive industries.

These companies are working towards the wide implementation of a functioning hydrogen economy. The BMW Group is developing a hydrogen tank-filling system in cooperation with General Motors and Honda (The BMW Group - Sustainable Value Report, 2005/2006, p. 28).

Another BMW goal is to develop a hybrid model. The hybrid efforts are being carried out in cooperation with two other large automobile manufacturers, Chrysler and General Motors. In September 2005, BMW started working with these companies in a joint development center near Detroit, Michigan on a so called “two-Mode drive”, to reduce fuel consumption by up to 20% compared to an identical automobile with a combustion engine. According to this project, the new fully hybrid model is an integrated combination of electric and combustion engine. The goal of this cooperation is “to bundle the wide expertise of the companies, to utilize synergies, and to realize efficiency potentials” (The BMW Group, Sustainable Value Report 2007/2008, p. 29). Furthermore, BMW has intensified its collaboration with the Mercedes Car Group to develop a hybrid model for a rear-wheel drive passenger vehicle in the premium segment.

Ecological changes in BMW factories have resulted in significant improvements in environmental efficiency. By using natural gas as well as combined heat and power systems, BMW reduced its CO₂ emissions 30% per unit produced in Europe during the last ten years (The BMW Group, Sustainable Value Report 2005/2006, p. 46). This has helped BMW meet its commitments to the EU towards achieving the Kyoto objectives. Although the American government did not ratify the Kyoto Treaty, BMW transferred environmentally friendly processes developed in Europe to its South Carolina operations. In 2001, BMW developed a project to capture the methane gas in the Palmetto Landfill to provide electricity for its car factory in nearby Spartanburg. BMW constructed a nine-mile pipeline and used the thermal energy from the landfill

to fuel four power turbines. This reduced CO₂ emissions by 59,000 tons a year and provided the annual energy equivalent of more than 93 million automobile miles plus the heating of more than 13,500 homes a year (The BMW Group, Sustainable Value Report 2007/2008, p. 44; Climatevision, 2004). BMW also heralds the low CO₂ emissions of its small Mini car, and the BMW 1 and 3 series automobiles, while fighting regulations that would tax its more powerful BMW 5 and 7 series vehicles.

SENSEMAKING FRAMEWORK OF BASU AND PALAZZO

The recently published sensemaking framework of Basu and Palazzo provides additional insights into the decision-making dynamics of BMW. Basu and Palazzo offer six juxtapositional perspectives which have both economic and social considerations. The first, identity orientation dimension, posits the choices of Individualistic, Relational and Collectivistic. From a Collective viewpoint, it can be argued that BMW should emphasize preserving a healthy environment for all people, but perhaps the orientation of BMW is individualistic because of its determination to produce the 'Ultimate Driving Machine.' The path to lower CO₂ emissions is hindered by BMW's pursuit of high performance engines. In order to offer this experience to its customers, but at the same time contribute to the reduced fuel consumption of its fleet, BMW has introduced the concept of Efficient Dynamics:

"A package consisting of highly efficient engines, innovative lightweight construction measures, improved aerodynamics, and sophisticated energy management in the vehicle. The BMW Efficient Dynamics measures include roll resistance-reduced tires, brake energy regeneration, electric steering assistance, gear shift indicator, diesel engines with high precision injection and lean operation, air flap control, demand-controlled fuel, coolant, and oil pumps" (The BMW Group, Sustainable Value Report 2007/2008, p. 29).

The second Basu and Palazzo dimension, Legitimacy, presents Pragmatic, Cognitive, and Moral alternatives. Will BMW be pragmatic or moral in terms of environmental regulations? It appears that BMW's behavior is following a more pragmatic approach whereby it lobbies against near-term taxes on CO2 emissions while simultaneously conducting a green public relations campaign that promotes the company's environmental and societal profile.

The third dimension is Justification. The possibilities presented by Basu and Palazzo are legal, scientific, economic and ethical. Can BMW pursue all four simultaneously, or will economic considerations dominate. Other social responsibility stakeholders such as government and its union allies might also have a strong societal impact on BMW's actions.

Legally, BMW is obligated to obey EU laws and regulations, but it most likely will try to influence their development. BMW and its automobile industry allies are arguing for slower implementation of tougher emission regulations because of the negative impact on German employment. BMW's high performance cars, the 5, 6 7, X, and M series, may need to be discontinued, if high emission taxes are assessed.

Scientifically, BMW is developing hydrogen technology. This option has many critics, who consider hydrogen to be impractical and dangerous, but BMW and its scientists consider it the inexpensive, zero-emission technology of the future which is why the company has been doing research on hydrogen since the 1980s.

The final possibility under the Justification dimension is Ethical. The mental framework of BMW is perhaps best expressed by its Chairman, Norbert Reithofer, in its Sustainable Value Report of 2007/2008, p.2: "we are looking for solutions that generate the greatest possible added

value – both for society and for our company.” The four possibilities (Scientific, Economic, Legal, and Ethical) within Justification can be viewed as both separate and interconnected, e.g., scientific research and development will lead to innovations (low emission cars), which will help meet the legal requirements. Economically, this could provide a competitive advantage to the company as well as be ethically acceptable to society.

The fourth dimension, Transparency with its choices of Biased and Balanced, is particularly significant in terms of BMW’s interaction with society. Will BMW be consciously *biased* in its communication with the public, or will it seek to be *balanced* in presenting all the pros and cons of its environmental management? This dimension is problematic to measure, because it is human nature to emphasize positive developments and minimize disadvantages. In this respect, the company will not likely be completely balanced, but the degree to which negative aspects of environmental impact are communicated and discussed can at least be analyzed.

The fifth dimension, Posture, presents the choices of Defensive, Tentative or Open. In its collaboration with other car companies--Mercedes, Honda, Chrysler, General Motors--with the German Government, and in the joint effort of CARS 21 with the EU Commission, BMW can be viewed as exhibiting open characteristics.

The last dimension is Commitment, and the two choices are Instrumental and Normative. Perhaps this is the ultimate question of Social Responsibility. Will BMW be committed to being a Normative company that seeks to make a positive, long-term contribution to providing environmentally friendly forms of transportation or will it pursue an Instrumental approach to maximize shareholder profits? An interesting response is provided by its chairman, Norbert Reithofer:

“We are not interested in short-term actions or sensationalism. The problems that face us around the world are too serious for that. The issue is rather one of creating a long-term, lasting effect. Sometimes this also means that we have to tread an uncomfortable path, and we take this fact on board at a conscious level. This is because we are looking for solutions that generate the greatest possible added value –both for the society and for our company” (Norbert Reithofer, Chairman of the Board of Management, The BMW Group, Sustainable Value Report 2007/2008, p. 2).

CORPORATE SOCIAL RESPONSIBILITY OR GREENWASHING?

This paper has reviewed a prominent social responsibility framework (Davis and Frederick) as well as the psychological sense making dimensions of the corporation (Basu and Palazzo, 2008). BMW was selected as a case study to analyze its environmental activities. One goal was to ask whether BMW is acting in terms of CSR or just greenwashing its customers, current and potential. The Concise Oxford English Dictionary (10th Edition) defines greenwash as: “Disinformation disseminated by an organization so as to present an environmentally responsible public image. Webster’s New Millennium Dictionary of English says it is: “The practice of promoting environmentally friendly programs to deflect attention from an organization’s environmentally unfriendly or less savory activities.” Both these definitions suggest that the public is the target of public relations to improve the corporate image, create more loyal customers, attract new ones, and increase the consumer-company identification. Many corporations have turned their attention to “green marketing,” considering it the future of brand imaging. But according to recent research results by TerraChoice Environmental Marketing Inc., greenwashing may be a violation of corporate social responsibility itself. It describes the “Six Sins of GreenwashingTM” (2007). These are “The Sin of the Hidden Trade-Off, the Sin of No Proof, the Sin of Vagueness, the Sin of Irrelevance, the Sin of Fibbing, and the Sin of Lesser of Two Evils.” And the number of organizations that commit one, some, or all of these six sins, is

far too large. With advertising, sustainability publications, and the use of the marketing for “green” promotions, organizations can be viewed as creating a fog before consumers’ eyes, and hindering real green efforts.

The brand identity of BMW is the “Ultimate Driving Machine,” and to fulfill this promise, the company’s engineers have created powerful engines that have high CO₂ emissions and consume huge amounts of water. The various actions taken by the company’s designers and engineers for greater comfort and safety, increase the weight of the vehicles which have environmental consequences.

But to achieve BMW’s sustainability objectives in the area of product responsibility, the company has initiated a series of projects –some already achieved and other ongoing- for CO₂ emissions reductions, water preservation, product recycling, and product safety. It is worth mentioning that the company achieved a decrease in fuel consumption by the BMW fleet in Germany by almost 30% between 1990 and 2005, a reduction of water consumption from 3.32 m³ in 2002 to 2.56 m³ in 2006 per vehicle produced, and a total reduction of water consumption from 3,618,995 m³ in 2002 to 3,500,197 in 2006 (Tables A and B, Appendix) (The BMW Group - Sustainable Value Report, 2007/2008, p. 26).

Paradoxically, BMW both produces cars such as the BMW M5 that are among the worst polluters, while simultaneously, using marketing techniques to build an environmentally sensitive brand image that started more than three decades ago. BMW Environmental Services Manager, Gary Weinreich, says that the company has a commitment to reducing ‘its environmental footprint’ and believes that mobility and the environment go hand in hand. “BMW spends a lot of time on brand image and what it means worldwide.... is tied to a company that has a good

environmental record” (Zacher, 2003). If we go back to Basu and Palazzo’s dimension of Legitimacy, this could be interpreted that the company is following a pragmatic approach, building powerful cars with sophisticated green advertising campaigns.

CONCLUSION

Social responsibility frameworks have interesting implications for the automobile industry, particularly BMW. Until the 1990’s, an automobile manufacturer was considered successful when it produced cars that were either cost leaders or attractive to their target customers. As environmental consciousness has increased, social activists have raised their voices criticizing car manufacturers that produce polluting and unsafe cars. Successful automobile manufacturers may be the ones that respond to these voices and create products that are safer and more environmentally friendly.

BMW has expended considerable efforts to improve the ecological efficiencies of its automobiles, including the development of several engineering oriented processes. In developing an ecologically sustainable economy, various stakeholders throughout the world are debating the parameters of an optimum transportation system encompassing commercial delivery of goods and services, public air and rail networks, and perhaps most importantly for BMW, the socially responsible production of personal automobiles serving a wide range of tastes and preferences.

In the debate about corporate social responsibility and the role of the automobile, BMW is one of many participants. Moreover, the detailed publication of its many environmentally related activities can be described as corporate socially responsible participation in the overall societal

debate about the role of personal automobiles. More specifically, in terms of the Basus and Palazzo framework, BMW can be viewed as contributing its heritage of engineering sense-making framework to decision-making. So, is BMW one more example of a company that is trying to Greenwash us, or are its environmentally friendly efforts genuine and sincere? This vital corporate social responsibility question is a critically important issue for society and its various stakeholders.

APPENDIX

Table A

Water (in m3)	2002	2003	2004	2005	2006
Water Consumption	3,618,995	3,633,135	3,789,703	3,417,341	3,500,197

Table B

WATER CONSUMPTION PER UNIT PRODUCED

in m3

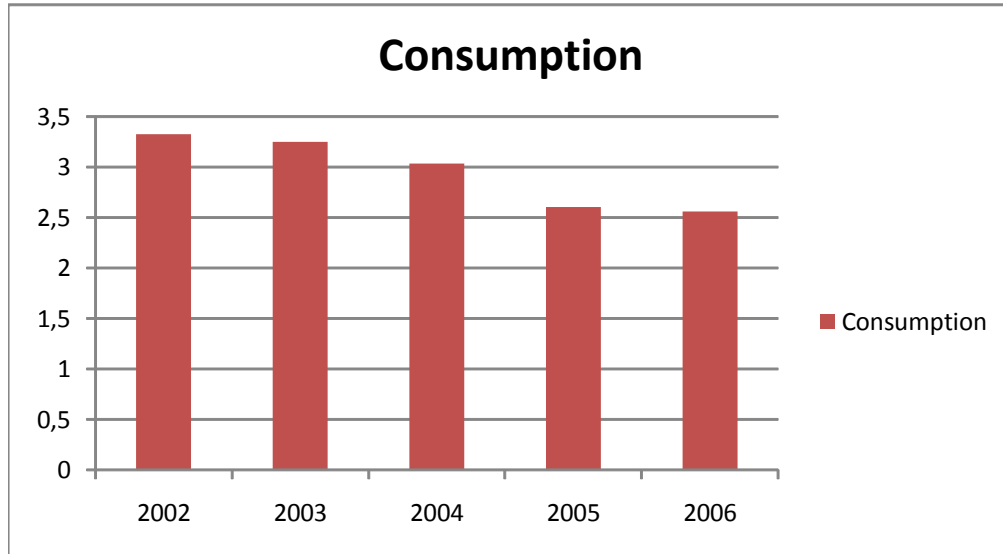


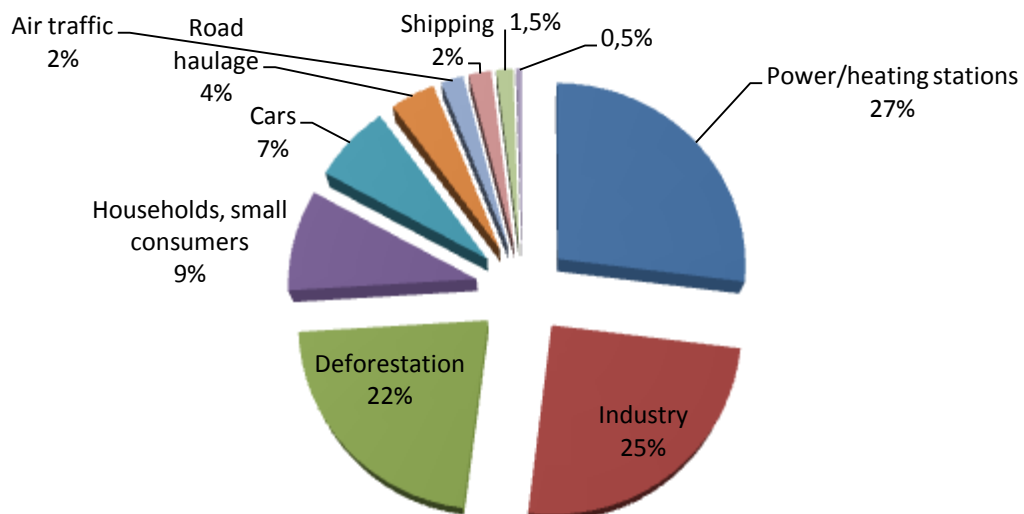
Table C

Share of traffic sector in worldwide CO2 emissions in 2004 as a percentage of 37,000 million tons of CO2	
Power/heating stations	27,0%
Industry	25,0%
Deforestation	22,0%
Households, small consumers	9,0%
Cars	7,0%
Road haulage	4,0%

Air traffic	2,0%
Shipping	2,0%
Bus traffic, 2-/3-wheeled vehicles	1,5%
Rail traffic	0,5%

Source: IPCC Fourth Assessment Report, WG III, 2007.
 World Business Council for Sustainable Development, 2004.
 Figures have been rounded.

Share of traffic sector in worldwide CO2 emissions in 2004



REFERENCES

1. Basu, Kunal & Guido Palazzo, (2008). Corporate Social Responsibility: A Process of Sensemaking, *Academy of Management Review*, Vol. 33, No. 1, 122-136
2. BMW Group (2006), Sustainable Value Report 2005/06
3. BMW Group (2007), Sustainable Value Report 2007/08
4. Climatevision (2004), Tapping into Green Energy: BMW Plant Spartanburg's Landfill Gas Project, www.climatevision.gov/sectors/automobile/pdfs/workplan_3-3.pdf

5. Davis, Keith & Frederick, William C. (1984), *Business and Society*, Fifth Edition, New York: McGraw-Hill, Inc.
6. Fischer, K., & Schot J. (1993), *Environmental strategies for industry: international perspectives on research needs and policy implications*, Washington, DC: Island Press
7. Imai, M. 1986. *Kaizen*. New York: Random House
8. Mahony, Honor, (2007), *Commission in turmoil over car emission proposals*, Retrieved on December 12, 2007 from euobserver.com/9/25369,
9. Philips, Leigh, (2008), *Europe's captains of industry say they're steering a greener course*, Retrieved on February 22, 2008 from euobserver.com,
10. Roome, N. 1992. Developing environmental management strategies. *Business Strategy and the Environment*. 1(1): 11-24
11. Vucheva, Elitsa (2007), *EU unveils controversial plans to make cars greener*, Retrieved on December 19, 2007 from euobserver.com