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GREEN MARKETING

A Case Study of the Sub-Industry in Turkey

Ayca Can Kirgiz

Green Marketing

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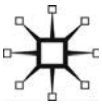

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To my mother and father

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Preface

The environment and people are two dynamic phenomena that influence each other in the cycle of life. These two factors have the power to influence as well as to destroy. Today, we can see the aftermath of the negative interaction of these two interlinked issues in the destruction of nature and ecological systems, and numerous people have lost their lives as a consequence. Rapid industrialization and the consequent dumping of chemicals, heavy metals and toxic substances, along with uncontrolled urbanization, rapid population growth, increases in soil usage, climate change, electromagnetic pollution caused by base stations, and rapidly increasing air and water pollution threaten the world's ecological balance, biological diversity and human health. Nowadays, the increase in environmental problems has led to a reconsideration of views on nature. For this reason, many disciplines have evolved along the lines of "green thinking." In light of this, the traditional discipline of marketing has also been restructured to make it more sensitive to the environment and as a result, the concept of green marketing has emerged. Traditional marketing's one-sided brutal exploitation of nature cleared the ground for the emergence of green marketing, which is focused on people, the environment and other living creatures, and this too has brought about changes in society's demands for the future.

Given today's conditions it is necessary for enterprises to have a flexible structure so that they can adapt to rapid changes in line with advancing technology and a globalizing world. Every day enterprises confront new concepts

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as new rising trends introduce quickly changing needs. This change and innovation is used not only for enterprises but also for strategic pressure/interest groups upon which enterprises are organically dependent, namely, through customers. Enterprises must take those issues into consideration to remain efficient. Today, enterprises' responsibilities are constantly updated to meet the changing demands of customers. A new view of enterprises in contemporary management philosophy has come to the agenda as regards to finding strategic solutions for damage done to the environment by companies. Today's customers make decisions by considering the social responsibility attributes of organizations as well as their products or services.

Green business administration means focusing on alternatives that will cause the least harm to the ecological balance, even eliminating such damage completely, by selecting subcontractors and suppliers that are ecologically minded. This process takes green products and services beyond just being a marketing strategy and promotes the creation of the quality of green life. In this context, enterprises' green responsibilities and ethics are a driving force in the prevalence of green understanding in other segments of society as well, in particular consumers.

The concept of the environment is developing in Turkey due to the continuation of industrialization, and in this regard national environmental policies are becoming clearer and enterprises are improving their marketing strategies in this direction. Green marketing, which is currently in the development stage in Turkey, needs to be united with the target of causing the least harm to nature and the environment by introducing changes that satisfy the needs and demands of society.

In this book, the automotive sub-industry has been chosen because three basic changes have been observed in general when the economic development processes of developed and developing countries are examined. The first one is the general direction of development from agriculture to industry and from industry to the services sector. The second is the fact that in the process of this development, the share of heavy industry in total manufacturing increases. And the third is the share of automotive production in heavy industry, which is indicative of an increase in manufacturing.

The world's automotive sector is equivalent to the world's 6th largest economy with a turnover of 2 trillion euro, a tax income of 433 billion euro and an R&D investment of 85 billion euro. It is estimated that approximately 50 engine manufacturers doing business in about 20 countries

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employ a total of 50 million people. The world's automotive market is expected to grow by 3.5% per year on average until 2028. Turkey's automotive market ranked 19th with a share of 0.97%, while automotive production ranked 16th with a share of 1.26% in 2012. In the rankings of Europe, Turkey ranked 5th in sales and 6th in manufacturing.

The automotive sector is among the driving sectors in terms of economic growth in Turkey. With exports of over 19 billion US dollars per year, the sector ranks first among exports and is a major pillar of the economy, employing around 400,000 people.

The sub-industry which supports the formation of such a large industry is also quite developed. The revenue and size elasticity of the automotive sub-industry is high in Turkey, and a 1% increase in the population and gross national product creates an increase of more than 1% in manufacturing and the added value of this sector (www.tubitak.gov.tr/tubitak_content_files/vizyon2023/mm/Ek6a.pdf). Because of this, the automotive sub-industry is extremely important with regard to the current account deficit and employment in Turkey which has grown by 4% per year on average. Therefore, Turkey needs to produce more on par with global standards for exports and industrial investments.

The automotive sub-industry in Turkey is considered to be an important potential area of investment by the world's automotive companies due to its geopolitical and geo-economical position. The sector makes large contributions to the promotion of the country through the export of manufactured vehicles. For this reason, an increase in the production of the automotive sub-industry will lead to increases in manufacturing, employment and added value for other sectors by creating substantial demand through the multiplier effect.

The core element of a healthy economy is competitiveness. At the same time, the competitiveness of an economy is dependent on increases in the power of innovation and productivity. In turn, productivity and innovation result from technological development. The automotive sub-industry increases the competitiveness of a country's economy by spreading technical culture in the sector, and by creating technical employment positions and regular investments. Lagging behind in the automotive sub-industry has a negative effect on many other sectors and on economic growth as a whole. The implementation and internalization of green marketing by the automotive sub-industry, which is one of the main sectors in Turkey's economy, is one of the fundamental requirements for export-oriented growth.

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In this book, green marketing is examined conceptually, and examples from Turkey are given in the broader global context. The green marketing strategies of Sa-Ba Inc., which is a pioneering enterprise in Turkey's automotive sub-industry, are analyzed as the case study.

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List of Abbreviations

ADR	Accident Data Recorder
AMA	American Marketing Association
APO	Advanced Planner and Optimizer
ATEX	Atmosphere and Exposible
B2B	Business-to-Business
B2C	Business-to-Consumer
CES	Consumer Electronics Show
CO_2	Carbon Dioxide
CTF	Clean Technology Fund
DSD	Duales System Deutschland
DSI	Devlet Su İsleri (State Water Administration)
EBRD	European Bank for Reconstruction and Development
ECE	Economic Commission for Europe
EDI	Electronic Data Interchange
EHC	Environment High Commission
EIA	Environment Impact Assessment
EMS	Express Mail Service
ERP	Enterprise Resource Planning
EU	European Union
GIA	Global Industry Analyst
GMO	Genetically Modified Organism
HFC	Hydrofluorocarbon
IEA	International Energy Agent
IMDS	International Material Data System
IPCC	Intergovernmental Panel on Climate Change
ISO	International Standardization Organization
LEC	Local Environment Committees
MDS	Material Data Sheet

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MMS	Multimedia Messaging Service
MSDS	Material Safety Data Sheets
NAFTA	North American Free Trade Agreement
NEC	National Environment Council
OEE	Overall Equipment Effectiveness
OEM	Original Equipment Manufacturer
PVC	Polyvinyl Chloride
SAE	Society of Automotive Engineers
SAP	Systems Applications Products
SCM	Supply Chain Management
SME	Small and Medium Enterprise
SMS	Short Message Service
TAYSAD	Taşıt Araçları Yan Sanayicileri Derneği (Association of Automotive Parts & Components Manufacturers)
TEN	Trans-Europe Networks
TEP	Tons Equivalent Petroleum
TOE	Türk Otomotiv Endüstri (Turkish Automotive Industry)
TOSB	TAYSAD Organize Sanayi Bölgesi (TAYSAD Organized Industrial Zone)
TTGV	Turkiye Teknoloji Gelistirme Vakfi (Technology Development Foundation of Turkey)
TÜKÇEV	Tüketici ve Çevre Eğitim Vakfı (Consumer and Environmental Education Foundation)
TÜMOSAN	Türk Motor Sanayi ve Ticaret (Turkish Motor Industry and Trade)
TURSEFF	Turkey Sustainable Energy Financing Facility
TÜSİAD	Türk Sanayicileri ve İşadamları Derneği (Turkish Industry & Business Association)
VSM	Value Stream Mapping
WPO	World Packaging Organization
WWF	World Wildlife Fund

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1
Sustainable Green Marketing

Abstract: *Green business administration means focusing on alternatives that will cause the least harm to the ecological balance, or even eliminate such damage completely, by selecting subcontractors and suppliers that are ecologically minded. In this chapter, the traditional discipline of marketing has been restructured to make it more sensitive to the environment and as a result, the concept of green marketing has emerged. Besides, the green marketing strategies are examined conceptually, and examples from Turkey are given in the broader global context.*

Keywords: green marketing; green marketing strategies; green pressure

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1.1 An overview of the green marketing concept

Green marketing is perceived by many to be a means of promotion or advertisement used in the marketing of products made in an environmentally sensitive manner. Consumers usually associate terms such as GDO-free, recyclable, ozone layer friendly and environmentally friendly with green marketing. In fact, even though these terms are related to green marketing, it is a much more comprehensive concept that is used for consumption goods, industrial products and even services. Green marketing includes products, processes of production, packaging, pricing, supply, logistics and promotional activities (Polonsky, 1995, 29).

This concept is referred to in various ways in the terminology, such as environmental marketing, nature-friendly marketing and ecological marketing. By the time it became popularly known in the 1980s and early 1990s, green marketing had already been established in the field. The American Marketing Association (AMA) published its first study about ecological marketing in 1975. The reports in that study facilitated the publication of the book *Ecological Marketing*, the first in its field, following which many books on the topic have been published. Green marketing has been defined by the AMA as "the marketing of products that are presumed to be environmentally safe." In addition, it states that it is the "development and marketing of products designed to minimize negative effects on the physical environment or to improve its quality" (http://www.marketingpower.com/ _layouts/Dictionary.aspx?dLetter=G).

According to another definition, green marketing is a "kind of exchange of activities developed in order to satisfy the demands and needs of people and it is a kind of marketing ensuring that this performance [is carried out] in a manner causing minimum damage to the natural environment while meeting these needs and demands" (Polonsky, 1995, 30). In this way, it can be seen that green marketing is related both to activities seeking to satisfy human demands and needs as well as those that benefit businesses in the process. In short, it involves a mutual exchange in which activities that are harmful for the natural environment are minimized. Green marketing has also been defined as "activities which are planned, created and designed in order to meet changing human needs and demands as causing minimum damage to the environment" (Grove, Fisk, Pickett and Kangun, 1996, 57).

Green marketing, which is based on respecting and protecting nature, all forms of life and the integrity of society, is grounded on the efficient

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utilization of limited natural sources without creating new areas of consumption. The focus is on ensuring and maintaining the natural balance while keeping energy consumption at the lowest levels possible, and it does not encourage the production of disposable products. Green marketing seeks out alternatives that eliminate environmental pollution created by industry, promotes the use of environmentally friendly products, keeps packaging processes to a minimum and encourages awareness of recycling in society.

Green marketing is actually a part of detailed business strategies (Prakash, 2002, 285). When it is used in conjunction with traditional marketing mix (goods, products, price and promotion), it needs being understood of processes concerning the public order. However, green marketing is related to the industrial ecology and environmental sustainability issues such as extended producer responsibility, life cycle analyses, material usage, source flow and eco-efficiency. Therefore, it can be said that green marketing is closely related both to business strategies and public order. Business entities can make themselves green through three ways: value addition process (at company level), management systems (at company level) and their products (at product level).

Upon enhancement of social and political pressures, enterprises have headed to produce green products, to implement production technologies and methods that will control and prevent wastes and pollution, to make designs and packaging that consume less sources and studies that make the recycling possible in order to prevent environmental pollution, decrease wastes, even eradicate them. Enterprises' managing marketing studies for the purpose of identification of green markets and offering green products appropriate to desires of consumers in these markets will provide important acquisitions in terms of creation of new opportunities, efficiency of resources and, most importantly, fulfillment of social responsibilities. While consumers demand innovation, quality and products equipped with technological superiorities, on the one hand, they also expect environmentally sensitive efforts from enterprises on the other hand (Ay and Ecevit, 2005, 238). For this reason green marketing applications have become quite important for enterprises.

Human beings have limited resources on earth to meet their limitless desires. In the event of using these resources inefficiently in line with the desires, one day resources will be consumed away and much greater problems may occur. Therefore, human beings' using their free choice right for the products and services least damaging the resources will be

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at their own benefit. Companies also must develop methods and strategies that least damage these resources to meet the unlimited needs of consumers because we have limited natural resources. Green marketing takes care how marketing activities handle these limited resources as to ensure both sides reach to their objectives while meeting the desires of consumers and enterprises.

The following items can be listed among the essential reasons of the enterprises to give importance to the studies related to green marketing (Polonsky, 2005, 31):

- seeing green marketing as an opportunity to reach their goals;
- using their environment-related activities as a pressure element on other companies being rivaled;
- the parties' collaboration in the reduction of wastes;
- being aware of the cost-lowering effects such as effective use of resources and recycling studies;
- believing that they boost their morals by showing sensitivity to the environmental issues,
- the obligations for complying with rules and practices about the environment of various institutions along with the central and local administrations.

1.2 What are the stages of green marketing?

Green marketing is related to products and services aiming to protect environment. However, this concept is not only comprised of naturally friendly product design. This concept, which covering a fairly wide process, also covers the green production and sales, market research strategies, marketing mix, production technologies and product packaging, consumption, disposal and the states after turning in wastes (Uydacı, 2011, 140).

There are four stages of green marketing (Warner, 1996, 3225). While some enterprises pass these stages one by one, some start from any of these stages. An enterprise that has adopted environmentally friendly production as a principle will leave behind the first and second stages. Because neither it has produced until now nor will produce a product damaging the environment. The first stage is green targeting. At this stage the production of green products is considered for environmentalist consumers. In addition, the enterprise continues to produce nongreen

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products. The second stage is the development of green strategies. At this stage, the production of green and nongreen products continues. In the meantime, the enterprise starts to develop strategies inclined to the environment and tries to identify environmental policies. Environmental measures are taken in the enterprise. For example, to advance, to improve energy and efficiency and generate less wastes. The third stage is environmental orientation. The production of nongreen products stops. Only the products in green classification are produced. Products are continuously renewed so as to ensure compliance with new environmental requirements, are adapted to current conditions. The enterprise devotes itself completely to the production of green products. At the last stage, the enterprise appears as a socially responsible organization. In this case the enterprise isn't only engaged in green issues, but at the same time deals with current social matters such as equality of opportunity and minimum wage policies. In this stage, the green developments are in the status of being a part of social responsibility.

The enterprises' passing to "green" status is also dependent on the intercompany criteria. These criteria are: to what extent the implemented programs reduce the risks on the environment, fund allocation, general views of managers, senior management's involvement with the green issues and the support it provides, development of programs for the environment, integration for the enterprise, informing the senior management at every stage and the principles of the information (Uydacı, 2005, 140–141).

1.3 What are the green marketing strategies?

Today many companies are seeking out ways to be both green and profitable. Some are trying to develop a green image, while others have been unable to maintain long-term activities that support their claims of being green. In particular, some companies have attempted to demonstrate that they are sensitive to environmental problems but haven't made serious efforts to make their products more environmentally friendly, and this has made consumers suspicious about the "green marketing trend." This is the result of an understanding of green marketing that can best be defined as opportunist and tactical, and unfortunately this has had a negative impact on the development of activities that are truly sensitive to the environment in the long run. However, this shouldn't mean that

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tactical marketing activities are simply "wrong." Companies have come to realize that marketing tactics will provide benefits for only a short period of time and that to achieve long-term benefits it is necessary to organizationally implement green marketing in a broader sense. To yield successful results, it must be perceived as a component of the "cultural fabric" that constitutes the organizational structure and connects organizations with one another. Such a company spirit is a reflection of organizational strategies and is revealed in the tactical implementation of strategies. This shift in the general viewpoint of a company will help it acquire the distinction of being an environmentally aware entrepreneurial entity and thus will provide sustainable competitiveness teeming with new opportunities.

The green marketing has been included in different dimensions into the marketing strategies of companies. Some implementations observed most commonly are as given here:

- Repositioning without making any change in the contents of existing products.
- Changing the features of existing products as being compatible with the environment and being less harmful.
- Changing the culture of the entire institution taking into consideration the environment factor in all of the marketing activities.
- Establishment of new companies that produce only green products and target the green consumer mass in the market.

Today, the framework of marketing has been expanded to cover the environmental dimension, and the enterprises have begun to implement green marketing intensely. The environmental understanding has a significant effect on the product development processes in many industrial areas. Green marketing is a long process that begins from the design stage of the product, continues at the production stage and highlights how it will disappear at the end of its life. This process also has a fairly important impact on the marketing mix elements. Enterprises are developing strategies that will bring the environment, human health and respect to the right to life of animal/plant into the forefront by taking into consideration the consumer typologies mentioned in Tables 1.1 and 1.2, and they are integrating these strategies with marketing mix elements.

It is possible to divide the green marketing into market segments according to the status of consumers' being green.

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TABLE 1.1 *Consumer typology (1)*

16%	Activists	Those inclined to purchase green products and services
34%	Realists	Those worrying about the environment but approaching suspiciously to the green behavior
28%	Those unconcerned	Those waiting for solution from others
22%	Those remained unfamiliar	Those not aware of the green problems or considering these problems as temporary

Source: Adapted from Emma Rex and Henrikke Baumann, "Beyond Ecolabels: What Green Marketing Can Learn from Conventional Marketing", *Journal of Cleaner Production*, Vol. 15, No. 6, 2007, 568.

TABLE 1.2 *Consumer typology (2)*

11%	Faithful greens	Those purchasing green products at the most
5%	Fake greens	Those purchasing green products but not adopting this as a life style
33%	Those improving	Those indifferent but spending just a little more in order to buy green products
18%	Complainants	Those thinking the environment is the problem of others
31%	Those not caring	Those not taking seriously the environmental problems

Source: Adapted from Emma Rex and Henrikke Baumann, "Beyond Ecolabels: What Green Marketing Can Learn from Conventional Marketing", *Journal of Cleaner Production*, Vol. 15, No. 6, 2007, 569.

Many enterprises attach importance to exhibit a sensitive stance against the community/environment and social responsibility activities. Today, in practice, every enterprise makes available social responsibility reports with titles such as "Social Responsibility," "Environmental Report and Security," or "Sustainability Report" on their websites. Enterprises take into consideration their capability for making their products' "greenness" different from their rivals as well as the estimated size of the green market in their own industries before choosing one of the green marketing strategies.

While some enterprises have designed more effective manufacturing processes lowering the need for raw material and reducing wastes, some enterprises are producing environmentally friendly products. Implementation or realization of green procedures by an enterprise within its body doesn't mean that it will reflect these changes to the public

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opinion. However, in countries where consumers' knowledge levels and consciousness levels are high, announcing green activities to consumers will both contribute positively to the credibility of the enterprise and also serve the promotion of the image and company/brand value. The green activities are not included in the agenda of enterprises because being green in less developed or developing countries doesn't provide a positive influence on the reputation of the institution and not cause to increase the sales or the market share.

Enterprise managers should ask two group questions with regard to green marketing strategy. First, can they raise enterprise revenues by increasing the perceived green level? Does the enterprise suffer financial loss if consumers perceive the enterprise green at an insufficient level? Or, are too many consumers concerned about the capability of the enterprise for offering green-compatible services? Second, can the brand or the enterprise be differentiated at the green dimension? Has the enterprise got any understanding about what being green means and a decisiveness about being green at management level? Can competitors be coped with at this dimension, or would it be a very expensive and disappointing situation to compete on environmental issues with enterprises that are green at advanced level in this field?

The answers to be given for both question groups show that they are useful in the determination of how far will an enterprise highlight the green level as a differentiation qualification in the marketing strategy, and not useful in the determination of how much it should invest in environmentally friendly green business applications. Enterprises are required to choose one of the following green marketing strategies depending on how these questions are answered (Gingsberg and Bloom, 2004, 81–83).

Inclined green: The enterprises prone to green have not focused on the subject to publicize or market their green initiatives. Instead, they are interested in reducing their costs and increasing their efficiencies. They usually try to find long-term preventive solutions and to comply with regulations; however, they don't believe that substantial amounts of revenue will be obtained from the segment of green market. Inclined green enterprises usually hesitate to introduce their green activities or qualifications of their green products for the fear of obligation for applying higher standards and don't change themselves for their competitors.

Supportive green: The supportive greens use the green marketing usually as a measure in the nature of precaution to respond to a crisis or

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actions of their competitors. They haven't got the strength that differentiates them from their competitors about green products. For this reason even if they perform studies continuously about the environment and green products, these efforts are rarely known by consumers.

Hidden green: The hidden greens invest in an environmentally friendly process, which is seen in the whole system, with long terms requiring an important financial and nonfinancial commitment. These enterprises regard the green marketing "as an opportunity on developing technologies and revolutionary products satisfying the needs and resulting in competitive advantage." Although they have the ability to transform themselves truly in green, they earn much more revenue by offering other attributes and benefits to the customers. The hidden greens essentially promote the direct, tangible benefits provided to customers and sell their products through the agency of distribution channels preferred throughout the community.

Excessive green: The excessive green enterprises are embodied in holistic philosophies and values. Environmental and sustainability issues are in a status fully integrated into the enterprise and product life cycle processes of these enterprises. Being green has often become a propellant power behind the enterprise from the first day. Excessive green enterprises usually serve small markets and sell their products or services through boutique stores.

The differences between the four strategies of the green marketing can be seen with reference to how the four items are used in the marketing mix are used in each of these strategies. The inclined green strategy is a strategy that is prone to manifest being green mostly in product development, design and production. The supportive green strategy basically contains the promotion feature of the marketing mix and uses public relations activities that are particularly less costly rather than using tools like advertisement. Supportive greens maintain being green silently in product development, design and production activities. The hidden green strategy emphasizes the green as secondary in the introduction efforts performed and additionally maintains being green also in price-related activities if efficiency is achieved regarding the costs as well as product development, design and production. Finally, in the excessive green strategy, all items of the marketing mix are used mostly because of the distribution systems and retailer sellers are chosen privately and encouraged in the sense of being green (Uydacı, 2011, 146).

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1.3.1 In which circumstances the green marketing strategies should be cared

Companies' sensitivities to the environment and the society and the marketing strategies prepared in line with this is of vital importance in today's competitive environment. However, this becomes a more critical and priority issue in some sectors. Esty and Winston (2008, 41) has determined that the risks and acquisitions were increased in the companies that have the following features:

1. High brand recognition: The companies whose firm value is high and have sentimental values (like Coca-Cola, Procter&Gamble) may confront with special problems.
2. Great impact on the environment: The companies engaged in mining or heavy industry manufacturing (like BP, Exxon, Alcoa and LaFarge) are a lot more likely to be taken under the spotlight.
3. Dependency on natural resources: The companies selling fish, food and forest products (like Cargill, Nestle and International Paper) can take place at the most frontline with the perception of the limits of nature in a tangible way by communities.
4. Current responsibility level in the face of legislations: It plays an important role for environmental strategy problems: the companies required to work with hazardous materials (Dupont) or the companies offering electricity, water, and so on services (AEP) subject to a strict inspection and regulations.
5. The increasing liabilities before the law: Automobile manufacturers and electronic companies (like Ford and Intel) are obliged to purchase back the worn-out products from customers who are no longer utilizing the products sold due to "repurchase" laws enacted recently in Europe.
6. Competition for the skill: The companies in the service sector and new economy companies (Citigroup, Intel and Microsoft) are dependent on the talented manpower. Employees are the basic assets and can leave their jobs in case of being unsatisfied with the company's values. Therefore these companies should give priority to the environmental issues.
7. Low market power: The companies (generally small and medium-sized B2B companies) that have relied on major customers that can ask questions to themselves about their environmental

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performances might remain in a circumstance to revive the game. At the same time the companies (such as small-scale waste processing companies) doing business in highly competitive sectors may be forced to make investments that increase their costs or not yield returns in short time.

8 The impression of the public opinion regarding the protection of the environment: The companies that have problems about the protection of the environment in their history are now being followed more strictly by environmentalist activists groups, conscious green consumers and governmental authorities.

1.4 The green pressure: the reasons for enterprises to prefer green marketing

There are intertwined two pressure sources behind the green wave movement. The first one, the limits of the nature world, can restrict the institutional activities, change the structure of the markets and even threaten the welfare of the planet. The other one is the partners who are worried about environmental problems in larger numbers each passing day and who stand against the companies.

Today enterprise managers are required to fulfill green marketing processes for being able to obtain competitive advantage in their own markets and to ensure continuity of sales. While producing products that respect the right to life of animals, consider human and society health, are friendly to nature so that they stand out as *the* enterprise among its rivals, being supported by the large part of the community, pave way for enterprises to adopt this behavior and develop the application that will cause the least harm to the environment. Consumers want to know the contents of the products they purchase, whether they contain substances harmful for their children and the living environment. B2B customers want to learn how suppliers manufacture the products and exactly what materials they use in manufacturing. In-house employees prefer that personal and professional values do not conflict with one other and want to know where the company stands. Banks respond taking into account the concerns regarding the protection of the environment while giving loans and at one point they play a compelling role on the companies' protection of the environment. Insurance companies have begun to see environmental risks among the items posing threat for companies. The

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stock exchange analysts regard the performance displayed about the protection of the environment as a sign of quality management.

Depending on all these reasons, the enterprises' preference reasons for green marketing are as described in the following sections.

1.4.1 The advantages to enterprises

The researches carried out related to ecologic issues have shown that business managers were voluntarily adopted to the enterprise applications sensitive to the environment. Today senior managers of many brands have become aware of the relationship between the environmental responsibility and more productive and more profitable enterprise implementations (Ottman, 1998, 12), so that there are a few factors encouraging enterprises to implement green marketing strategies. These factors can be enumerated (Charter and Polonsky, 1999, 127):

- market opportunities with commercial and competitive pressures;
- environmental arrangements;
- cost saving arising from the use of different substances or the replacement of production process;
- new or developed technologies, parts and raw materials;
- internal and external pressures coming from the environmental policy of the enterprise, the concern of personnel, environmental campaigns, ethic investors or insurance business entities.

Besides these, while the green strategies secure enterprises against the laws, they provide the opportunity for lowering the long-term risks such as pollution, waste management, fluctuations in energy costs, and promote consumption of resources with a conscious approach to the environment.

Many studies demonstrate that the first two factors are the most important factors propelling enterprises to choose green marketing applications. Enterprises must take into account their suppliers, rivals, employees, clients, environmental organizations, government and even other stakeholders considering that they are not doing business alone. An enterprise shifting to green marketing applications actually can catch the success easily at one point because it will be supported by all stakeholders.

Enterprises feel the obligation to engage in the need of the production and presentation of their products in compatible with the environment

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and nature protection concept. This obligation necessitates making replacement products in every unit of the enterprises. Enterprises' taking responsibility for the social cause and desiring to implement the green marketing means formation of a new enterprise image. For this a very large process from production to pricing, distribution, supply and promotion should be performed on the basis of green thinking principles. Enterprise policies and strategies generated in these conditions will gain competitive advantage to the enterprise in its own market and, while pushing the intermediaries to the market to sell its products, it will also attract the final consumer for purchasing its products. This will also enhance the market share of the enterprise by enabling sales continuity.

Wasik says in his book *Green Marketing and Management* (1996, 6) that there is an increasing correlation between capitalism and the green management. According to Wasik, green enterprises generate less wastes and cause less pollution by using fewer raw materials. Using fewer raw materials leads to a fall in the production costs, which in turn leads to an increase in the net profit. And the enterprises aware of this will accelerate green manufacturing by switching to total quality environmental management programs. The green marketing actually is located at the junction of the sustainability and enterprise goals.

Green marketing is one of the most effective keys of achieving the goals of enterprises. In addition to obtaining monetary advantage by offering green products to the market, enterprises can both reduce their costs and increase their sales. The benefits of green marketing applications are presented in the following sections.

Much more profit

Many enterprises, especially those polluting the environment with chemicals, greases and electronic and electricity materials, are struggling to strengthen their environmental business profiles in accordance with consumer preferences. For example, while some large American enterprises are trying to give weight to the environmental management and to recycle their wastes, some of them are using the energy for more efficient technologies. Those practices lead to a further increase in profits by reducing the production costs (Ottman, 1998, 12).

The emerging new industries are improving environmental marketing activities by developing technologies toward lowering recycling or eradicating the solid waste and selling them to other companies (Yurman, 1994, 23). Because the cost of the elimination of environmental problems

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can't be measured easily, enterprises are not able to know how much investment it will require subsequently. They can resort to preventing the problems that they might encounter in the future by participating in green marketing activities at the beginning in order to reduce or eliminate this marginal cost risk. In short, to adopt and implement green marketing strategies appears to be a factor that might be helpful greatly for enterprises toward obtaining profits, which is the most important objective of most of the enterprises. Because of all these reasons, some companies have responded fairly fast toward shifting to green marketing. For example, McDonalds has become the most prominent names with regard to recycling. Likewise, Coca Cola Company has spent money in quite large amounts in order to control pollution arising from manufacturing operations.

Stevels has mentioned in an article written in the year 2001 that there are five ways to be green and profitable (Stevels, 2001, 81). This is shown in Figure 1.1.

All of these items act as affiliated and integrated with one another. An improvement in any field will have impacts on the developments of the other fields. For example, eco-design raises the product quality by ensuring green marketing and sales, or suppliers' performance helps to improve the eco-design, green marketing as well as sales. Or, eco-designs reduce the supply costs.

FIGURE 1.1 *Five ways of obtaining profit while being green*

Source: Adapted from Ab Stevels, "Five Ways to Be Green and Profitable", *Journal of Sustainable Product Design*, No. 1, 2001, 81.

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Competitive advantage

The competitive advantage can be acquired through several different strategies such as cost leadership, selling products cheaper to customers, differentiating products from rivals, focusing on a different section of the market. In addition to this increasing the quality, productivity, innovation in products and processes and obtaining market share via vertical integration also can be advantageous. To perform studies useful for the community will provide individual benefits as well as benefit to the enterprise and the environment. The opportunity for creating additional value in the consumer and being able to do business with environmentally sensitive activities will help enterprises to acquire competitive advantage. Around 60% of managers from small and medium-scaled enterprises who participated in the research study carried out by Simpson, Taylor and Barker said that a good management and a good environmental performance will help for good products to be produced, which in turn will help enterprises to obtain a better position among their rivals (2004, 158). Customer satisfaction and environmental responsibility will determine the potential competitive advantage.

In a study performed by Bansal and Roth (2000, 724) on food retailers, automobile manufacturers, petroleum selling business entities and Japanese companies it has been set forth that companies had to compete only with regard to quality and price in the past; however, today the competition has shifted toward the environmental performance dimension. The competitive advantage now can be achieved through environmental responsibility. For this reason nowadays many marketers are well aware of the fact that pioneering innovation will provide competitive advantage not only in the environmental field but also in everything else. For example, Koç Holding, one of the leading companies of Turkey White-Appliances Industry, which is gaining the confidence of consumers via green products, with its Arçelik and Beko brands, has possessed both a good image without compromising on the quality and price and obtained many advantages by standing out from its competitors.

The increase in the market share

Today's conscious consumers are not only buying the products that are less harmful to the environment but also consent to pay much to them. This increasing interest toward preserving the environment is at a level that can't be overlooked by enterprises. Depending on the extent the products are purchased by consumers, enterprises' market shares will

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increase. Enterprises' green marketing strategies distinguish them from one another.

In the past many enterprises had resorted to change only their marketing strategies without making any changes in their products or manufacturing processes in order to utilize the consumers' increasing interest in the environment. Enterprises confronted with boycotts of consumers and began to lose their customers in hand one by one when this kind of gap appeared between the enterprise behavior and the market demands (Mendleson and Polonsky, 1995, 4). These negative boycotts have started to affect other companies in the same sector and the companies' green marketing applications in the past had turned into useless things. For this reason, today if enterprises manufacturing consumption goods utilize the green marketing as a strategic tool, they have to find some ways in order to make these applications more reliable in the eyes of the consumers. Success will become inevitable when enterprises produce green products and convince the consumers that they don't damage the environment from the very beginning of the production process and will continue to do so after the sales as well.

Capable of producing better products

Green products are always perceived as high quality by many consumers. This perception forces the enterprises to manufacture green products. For example, water-saving shower heads (which lower water bills), concentrated laundry detergents (which provide advantage in terms of transportation and storage), toxic-free agriculture products (which are healthier and safer for children) non-GMO products (which protect against cancer), each is a valid reason of these products for appealing to the consumers. In addition to increasing the profit, the enterprises manufacturing these kinds of products will become more trustworthy, manufacturing higher-quality and easy-to-use goods.

1.4.2 Social responsibility

Many enterprises have begun to realize that they are members of a larger community and therefore they must act in a responsible manner for the environment. This too means that enterprises believe in the necessity to materialize the environmental objectives in addition to the profit goals. This ensures the integration of the institutional culture of the enterprise with the environmental problems. The enterprises in such a context may

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have two perspectives: (1) They may not mention their environmental responsibility for the marketing communication or (2) They may use it as a marketing tool. There are many automobile brands using the first strategy such as Toyota, Ford and Honda. We can speak of Coca Cola as an example of an enterprise not advertising environmental priorities. It has invested money in quite large sums in many recycling activities as well as in replacing their packages so as to leave minimum environmental effect. Coca Cola has not used this fact as a marketing tool although it has several concerns about the environment. Therefore many consumers can't realize that Coca Cola is an organization fairly bound to the environment (Polonsky, 2006, 4). Today enterprises regard the environmental sensitivity issue as a social responsibility project. Inclusion of the environment and its problems in mass media, highlighting this issue in popular formats like advertisement, film, photography, music, television shows in the mass media have also increased the interest of enterprises on this subject.

1.4.3 State pressure

Governments are one of the most important factors causing political and economical pressures on enterprises. The pressures applied by governments are miscellaneous. For example, they may be about matters such as package content, generation of the product and distribution channels. This too directly influences the enterprise strategies. Legislations are enacted with the intention to influence and arrange the manufacturing and consumption activities associated with the reduction of waste products and utilization of pollution reduction implementations, related to technology selection, leading to reduction in pollution and hence environmental enhancement. Environmental regulations and the cost arising from the compliance with these regulations vary from business to business. The enterprises having plant chimneys are affected more than others from these legal regulations because of more environmental risks and responsibilities compared to other enterprises. In a research conducted over 20 chemical business entities, it has been found that the laws related to the environment were the most important motivating force in developing pollution-preventive strategies. In the issues of reducing pollution and saving in sourcing, legislative regulation has been brought rather than pollution control and waste cleaning. For this reason, the enterprises are developing environmental management

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systems such as total quality environmental management or adopting environmental standards like ISO 14000 that are more comprehensive. Legal regulations are made in Turkey and almost in every place of the world, particularly in the United States and European Union about the environment, human health and security; "those who pollute will pay" principle is also being adopted. Researches have proved that the most important reason directing enterprises for the adoption of green marketing strategies were legal regulations (Henriques and Sadorsky, 1999, 388). Enterprises prefer to comply with legal regulations rather than bearing the fines that have to be paid.

The government has three different roles as regulator, supporter and purchaser toward the protection of the environment (Wu and Dunn, 1995, 21). First, the government determines various laws and policies such as vehicles' emission standards at regional and local level, noise control, recycling obligations. For example, the governments in Europe and Canada have brought firm standards regarding the resource reduction, material usage and recycling of wastes. Second, the government supports enterprises for developing environmentally friendly technologies and provides necessary investments. Third, the governments, due to sometimes being the only and the biggest buyer in many countries, may use their powers with regard to manufacturing green products and may give some monetary incentives to the enterprises that fulfill this. Besides, governments make some laws with the intention of controlling environmental pollution or the enterprises enabling damage to the health of society; it may direct enterprises to clean the waste, to inspect the environmental damages in workplaces and to eliminate the damages (Rezaee, Szendi and Aggarwal, 1995, 28).

For example, a law was enacted in an attempt to prevent air pollution in the year 2000 in China. Similarly, the Hong Kong government had made various regulations in their country for the purpose of preserving the environment by making laws such as Waste Disposal Act and Noise Control Laws (Shen, Hong and Griffith, 2006, 245). In January 27, 2007, European Parliament and EU Commission also brought some regulations in order to lower the damages to the human health by manufacturing, using and processing electronic products and to take wastes under control. These regulations also cover telecommunication tools, lighting appliances, toys and other similar consumption products. Turkey is one of the few countries where the environment issue has been included directly in the constitution. The constitution's 56th article, which came

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into force in 1982, highlights that "everybody has the right to live in a healthy and proper environment. The government and the people are responsible to develop the environment, to preserve the health of the environment and to prevent environmental degradation." Furthermore, many clauses and subclauses of regulations related to coastal regions, natural, historical, cultural richness and forests are available in the constitution. Here it is noteworthy that the constitution specifies citizens having not only the right for living a sustainable environment but also the responsibilities and duties for the protection and improvement of the environment. The 2872 Environment Act came into force in 1983 and it is a typical practice of the principle of "those who pollute will pay." The act sets forth a series of measures such as prevention of pollution at its origin, prohibition of actions that will harm the environment (having made Environment Impact Assessment [EIA] studies), protection of vulnerable natural regions, establishment of regulations for the hindrance of miscellaneous pollutants (chemical, hazardous, solid, liquid and gaseous wastes and noise pollution) and generating pollution-preventive fund as an environmental tool that will encourage sustainable development. National Environment Council, Environment High Commission and Local Environment Committees have been defined and established in order to encourage participative actions. All regulations have been put into force after adopting them for implementation in the Environment Act. In the 1990s, Solid Wastes, Hospital Wastes, Chemical Wastes and Control of Hazardous Wastes Regulations have been finalized after the regulations such as Air Pollution Control, Water Pollution Control, Noise Pollution Control were adopted in the 1980s.

1.4.4 Consumer pressure

The increase in the level of knowledge and consciousness of today's consumers and new developments in technology have affected the point of view to the trademarks and hence to the products/services. In addition to not prefering products and services that are not useful for the community/nature, these consumers do not want the existence of these brands in the market; they go another step forward by warning consumers and arranging for campaigns against them. The green consumers want to be friendly with nature and the environment while consuming and consciously direct those around them as well toward this response. Today's enterprises are trying to advertise themselves by preferring

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"green" in their products and services for being able to create brand loyalty and to attract the consumer with increased level of awareness to their brands.

Today's consumers are showing great sensitivity to the problems of environment and expecting the practices that will protect the environment better and realizing their responsibilities from the enterprises. They are aiming to protect the environment and themselves by using their purchasing powers. They are evidencing their own effects about the protection of the environment in their purchasing decisions. While the consumer wants more functional products on the one hand, he/she also wants to know the possible damages of these products to the environment, on the other hand. Briefly, consumer both directs the consumption and production, and also tries to fulfill own responsibility by looking after the environment.

1.4.5 Environmentalist groups' pressure

A movement toward "protection and preservation of the global environment" began in Western societies in the 1980s. Protection of the nature/human/animal became a priority task. Major industrial accidents occurred one after the other in those years: significant pollution incidents, global disaster scenarios presented by scientists (melting of glaciers, ozone layer depletion, etc.) led to the formation of activist media and started the green movement. All these developments forced environmentalist groups to act together for common interests. We can give many examples to these environmental activist groups, which their numbers and powers are still continuing to increase. Greenpeace, World Nature Organization, Earth System Governance Project are some of them.

The right of societies for voicing their opinions in the face of certain circumstances, to perform activities together by gathering around common points, being able to do things useful to the community, being able to also influence decision-making authorities are fundamental rights and can be fulfilled through voluntary organizations. Lighting and directing the public opinion is a field undertaken by voluntary organizations and are being successful. Furthermore, these voluntary organizations, which can establish close relationship with every country's enlightened people, administration staff, business circles and press members, playing the role of driving force, can influence and orient

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worldwide events by possessing special status before major international organizations. These voluntary organizations are accepted as the organized form of public participation and the democracy and are regarded as increasingly indispensable.

1.4.6 Competitive pressure

In these days we are witnessing the competitive wars of brands; brands are striving to develop products and services that can add emotional values to them, which will differentiate them from rival brands in addition to fulfilling the demands and needs of their consumers. To be "green" and to emphasize this is of vital importance for them in order to draw today's consumers and have adopted (for themselves and to their own brands) as a principle of life a philosophy sensitive to humanity and environment. Many enterprises are observing that competitors are improving environmental behaviors and are trying to exhibit the same. In some instances, the aforementioned competitive pressure has helped to change a whole industry and thus reducing the harmful environmental behavior (Polonsky, 2006, 4). The effect of globalization, rapid advances in science and technology, changing of consumers' expectations, amendment in legal obligations are pushing enterprises into a complex and hard competitive medium. The enterprises wishing to compete and stand out in the market should keep pace with renewed competition conditions and should not ignore the environment factor. Policies based on green thoughts should be integrated into each unit of the enterprise.

1.4.7 Cost and profit worries

The emergence of environmental problems,there is an important role in the efforts to maximize profits obtained from scarce resources. Existing resources push the consumer to the tendency of maximizing the benefit, and the producer for the profit. The manufacturer, directed towards profit maximization by producing a commodity with the lowest cost, looks for ways for the avoidance and disposal of manufacturing residues, using natural resources economically and putting obsolete or expired commodities to good use by including them again into production. Thus, one of the most effective precautions is taken against natural resource wasting, remnants' invasion on the soil, water and air and the environmental pollution (Prokop, 1994, 28).

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From the environmental point of view, legal restrictions in the future, consumers' pressure and coercions brought by competitive conditions will speed up the transition process to green marketing with respect to enterprises. The enterprises resisting the implementation of the green marketing will pay much taxes due to restrictions imposed by governments over time, will resort to limitations in manufacturing due to consumers' reluctance to buy their products, will have a bad image in the eyes of society through pressures from voluntary organizations, and all these factors will cause falling costs of enterprises and eventually ending their activities.

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2
Green Marketing Mix

Abstract: *In this chapter, current green marketing mix strategies used by businesses to compete in the market have been analyzed and argued in detail.*

Keywords: green place; green price; green product; green promotion; green integreted marketing communication strategies

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According to today's marketing understanding, while marketing strategies meet the needs of consumers by offering values to them, they should carry out this so as to protect or develop the overall welfare of the society for long term. However, though this new marketing concept meets the consumer needs in a profitable manner, it has caused some negative impacts on the environment by using techniques focused on growth and consumption. For example, creation of consumption demand, generating wrong and unnecessary consumption habits, formation of additional garbage and waste by product differentiation and shortening the product lifetimes, ignoring consumer needs and manufacturing harmful products for both human health and for the environment, and particularly obsolescence of products due to campaigns arranged for the purpose of expanding the market not because of wearing off and becoming old; in other words, spending natural resources indiscriminately for obsolescence can lead to adverse effects.

These aforementioned negative effects have led to the development of communal marketing approach. Enterprises have begun to consider benefits of the society as much as their economic growth and profitability rates. To be aware of communal responsibilities and to act within the framework of these responsibilities has required enterprises to put some matters into implementation. These are: abandon hazardous products and manufacturing methods, stop processing of raw materials that are harmful to the environment; implement green marketing. Green marketing's total impact on the marketing elements are quite important as well as its large responsibilities.

2.1 The green product

Green products and production tend to refer to classifications such as green product, environmental-friendly product, nature-friendly product that spotlight necessities such as recyclable materials, production by recycled content that release the least amount of toxic, hazardous waste possible which yield little if any environmental pollution causing no harm to the natural life (i.e., animal experiments in cosmetic testing), biologic resolvability, the consumption of minimum extends of natural energy, high durability, minor amounts of energy exhaustion in the process of using or consuming, all calling for the minimum depletion of the natural resources. Fundamental and additional services elevating

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the value of a specific product held by a given business should also be complementary to environmental consciousness (Kırgız and Erdemir, 2013, 270).

Green products are the products which don't pollute the world or deplete natural resources and are recyclable or preservable (Shamdasani et al.,1993, 488). Also, green products do not threaten the human or animal health; damage the environment during manufacturing, usage or disposal; use energy and other sources in excessive quantities; cause unnecessary garbage due to shorter life spans; necessitate unnecessary use; require usage of materials hazardous to the environment or the universe.

Actually no product has zero impact on the environment. However, the aim in green marketing concept is to minimize this effect. In the business world the green product is a product based on expanding or maintaining the natural environment by protecting the energy and resources, by lowering or eliminating the waste and poisonous substances (Ottman, Stafford and Hartman, 2006, 24).

The product policy includes both the responsibility of releasing new products to the market and making necessary changes in the existing product and manufacturing methods. The points that should be considered while developing green products are as follows: products should have the properties which are found in a neutral substance. They should be tested about their compliance to the environment. Priority must be given to the reusable products. Consumers should be informed about green products and should be directed about using green products. Utmost attention should be paid for hindering the consumption of natural resources in vain during packaging.

There are some benefits provided by the green product to the brand. For example, it ensures price positioning over market value, prevents information tangle, protects against competitive attacks, raises productivity and creates loyalty in the consumer. When all these benefits are assessed, it emerges as a marketing strategy with high cost in today's conditions however correct it might prove in the long term. The green product concept was seated on the "4S" formula inspired by four English words: *Satisfaction*: satisfying the needs and desires of consumers; *Sustainability*: ensuring the continuity of a product's energy and resources; *Social acceptability*: being accepted as a product or an enterprise about being not harmful to the environment or living things; *Safety*: not jeopardizing the health of individuals.

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Companies are releasing products in the market showing their sensitivity to the environment each passing day due to either consumer pressure or economic, politic and environmentalist pressures. For example, Toyota presented rechargeable electrical hybrid vehicle in 1997 and it provides performance and fuel economy today. Ecologist™ Dish Washer is one of the best examples of the environmentalist production approach in all products developed by Arçelik A.Ş. Priority has been given to lowering energy and water consumption amounts while increasing cleaning performance in the product's design and improvement activities. The machine uses nine liters of water. Other examples are as follows: AEG-Electrolux has dish washers consuming water and electricity according to dishes' quantity and energy-saving refrigerator; Nokia's new model cell phones alert for unplugging the charger from the socket when the battery is full. McDonald's is using paper packages in lieu of plastic packages. Olive oil producers like Paksoy are using glass bottles (Tek and Özgül, 2005, 335). Manufacturing of bottles lighter than the former one, which leads to less carbon emissions to the nature, became compulsory. In this context, Artenius TurkPet (SASA) designed, manufactured and put on the market new bottles and performances which were lighter than the previous one at each time, but losing nothing from its quality and functionality by acting with industrialist understanding respectful to the environment and the society. The 1 liter oil bottle weighing about 45 grams at the beginning was dropped to 26 grams by lightening with a ratio of 43% over time. The same situation was also experienced for water bottles; 0.5-liter water bottle which was produced as 22 grams in 1984 was subjected to the losing weight procedures gradually for several times, within years. The aforementioned bottle was dropped to 10.5 gram. In other words, the manufacturers of water bottles put the same volume on the market today, but their consumption of raw materials has been reduced by 53% (http://www.cevko.org.tr/cevko/Ic-Sayfa/Cevko/Haberler/Yasar_Nadir_Atilla_Yazi.aspx).

2.1.1 Green packaging

Package refers to outer covers made of materials such as metal, paper, cardboard, glass, plastic and so on facilitating transportation, storage, distribution, promotion and marketing procedures by holding them together, protecting the products from external effects. In short, the package is a protective containing the product inside. It protects the

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product against physical impacts such as striking, wetting, bruising. The package enables the delivery of the product to the customer through the most economical way and creates storage facility; its another important task is providing choice and ease of use to the consumer with the information printed on them. It provides great conveniences to the consumer and seller with information such as weight, price, production date, expiration date, ingredients of the product, manufacturer's name, details on the use, innovations about the manufacture of the product written on it (http://www.kobifinans.com.tr/tr/sektor/010103/12232).

Packaging, serving as the brand's/product's medium of communication, not only communicates to the consumer esthetically but also with its size and production material conveys the message regarding whether it is eco-friendly or not. One of the issues placing environmental friendliness in jeopardy is the disposition of packaging and various product wrappings. The significant damage caused by indissoluble and unrecyclable items in nature is without a doubt an inevitable fact. Stating on the basis of sustainable cognizance, the attributes of the packaging/wrapping of a given product should be manufactured so as to comply with the following fundamentals: the volume and the weight of the packaging should be kept at minimum proportions; energy depletion should be minimized in both manufacturing of the packaging and in utilizing it; recyclable materials such as glass bottles should be resorted to; packaging should be composed of indissoluble and recyclable constituents or, better yet, the entire packaging should be recyclable. An ideal green packaging/wrapping is the one engineered so as not to go to waste; the ultimate environmental application to be applied in the manufacturing of packaging is to stop waste (Kırgız and Erdemir, 2013, 271).

The first factor is the cost which is taken into consideration when making decisions about packaging (Kavak, 2006, 36). The package forms the largest element of manufacturing costs for many consumer products. The package should be cost-efficient although it is a very important function for manufacturers, marketers and consumers. Alterations can be made which are both cheap and safer in terms of the environment.

Now global warming threat has increased and states have begun to make legal regulations. Package and packaging methods, which are among the important items of manufacturing costs, are some areas paid attention to by consumers with respect to particularly environmental awareness and savings. World-famous firms such as Coca Cola, Este Lauder, Nestle, Procter & Gamble and McDonald's are giving weight to

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packages obtained through recycling within the framework of package consciousness, contributing to the reduction of costs for long term as well as attracting the attention of conscious customers. For example, Este Lauder, which is among the cosmetics companies participating in the struggle and has been associated with environmentalist organizations for a long time, has found a new aluminum melting method as a result of one-year study: it can now manufacture tube and cover containing 80% recycled material. Furthermore, Coca Cola has lightened the silhouette of Classis bottles for consuming less glass and plastic. Procter & Gamble's, known with a wide product range, offering toothpastes that do not require to be placed in cardboard boxes appear to be an environmentally sensitive packaging activity (http://www.hurriyet.com.tr/ekonomi/6505534_p.asp).

Today, the increasing awareness on the eradication of environmental hazards and more binding governmental regulations are coercing global sustainable packaging market. According to the market research of GIA (Global Industry Analyst) which evaluates the developments in the market, the size of sustainable packaging market will reach to 142,42 billion USD until 2015. In studies, other reasons constraining the sector have been identified as the growing awareness on the recycling of package wastes and government initiatives for the reduction of greenhouse gas emissions. Besides, the increment in the use of recyclable and reusable materials saves cost and package waste to the companies. The report named "Sustainable (Green) Packaging: Global Strategic Business Report" covers cosmetics and personal care, transportation and health sectors with food, beverages and comestibles industries which are the driving force for the sustainable packaging (http://www.gidahatti.com/index.php/flora-81/5689-suerdueruelebilir-ambalaj-pazar-2015e-kadar-14242-milyar-dolara-ulaacak).

In Turkey, in the course of recent years, businesses have strived to make use of recyclable, indissoluble materials in packaging their products; moreover, they have taken proactive action and provided their consumers an opportunity to give back the packaging by setting up user-convenient recycle collection points and banks. For instance, Anadolu Cam (Anadolu Glass), the most acknowledged pioneer among Turkish brands, set up particular glass and textile recycling points in numerous locations across Turkey. With regard to packaging, it is necessary to note that compatibility between the product and the package has to be established especially when taking into consideration the fact that once a given

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product is placed directly into the package, the product and the package interact, the composition of the internal atmosphere of a package and the makeup of the packaging may indeed lead to possible alterations or decompositions of the product paving the way to place environment and human health in jeopardy. For instance, in terms of packaging of foods, materials should be carefully selected; packaging in direct contact with a given nutriment should be strictly avoided. Stating on the basis of regulatory legislatives, numerous countries have dealt with this issue from the point of local administrations and business enterprises. In Turkey, the legislation entitled "Control of Packaging Wastes" imposed by the Turkish Ministry of Environment and Forestry is one example serving as a regulation enforcing:

1. Production of packaging in compliance with the environmental standards to be appropriate to allocated basic conditions and attributes.
2. Prevention of direct release of waste disposals of packaging to the receiving environment in a manner that will endanger the surroundings.
3. Prevention of waste disposals of packaging and/or the reutilization of impending disposals via recycling and retrieval.
4. Collection of packaging wastes within a designated system, separately at its point of source, delivery and decomposition.

With this legislation the responsibilities and obligations of the ministry, provincial headquarters, municipalities, packaging manufacturers, sellers and the entities constituting the providers such as producers, representatives, exporters and points of sale are clearly declared (Kırgız and Erdemir, 2013, 272).

The Green Dot

The Green Dot is a symbol established formally in respect of marking and gathering recycled packaging materials. It ensures easy recognition of recycled material; 73 Green Dots have been put up in the years of 1990/1991 by the German Ministry of Environment. This system had covered 82 million consumers financing their own gathering and recycling activities. Its fundamental objective was to guarantee collection of packaging materials that could be used again. With a law entered into force in Germany in 1993, commercial organizations have to purchase back their packages. The Green Dot, its original name being "Der Grüne

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Punkt", is an obligation only for German market, and all exporters selling packaged products to Germany have to take back the package of the commodity. If they can't achieve this, then they have to get the Green Dot by agreeing with companies established for collecting back the packages. Financing of these procedures are realized through the agency of the Green Dot.

The tasks of the enterprise are as follows, which was established under the name of DSD (Duales System Deutschland Gmbh) with the participation of 95 German commercial organizations for the purpose of helping the government, manufacturer and sellers in Germany in 1990s (http://www.gruener-punkt.de/?L=1):

- Granting the right for placing the mark and phrase of "Green Dot" (Der Grüne Punkt) on the packages entering into the system and allocation of necessary money for financing the system.
- Ensuring the packages which are bearing Green Dots being reprocessed after collecting them via tender, appointment of tender and collection enterprise, coordination and control of services.
- Organizing the establishment of the system with respect to the usage of Dual System, enlightening the consumer and promotion efforts. The system offers conveniences to the producers, and sellers are held responsible for sales packaging.

This system pioneered by Germany has reached a structure which was adopted by Belgium, France, Benelux countries and then finally separately by all EU countries. Therefore EU's interested parties has adopted "Package and Package Wastes Directive" by coming together towards the common use of all countries in December 1994. This directive covers all EU member country states, governments and business entities. Manufacturers or exporters are paying the share of use and participation to the DSD for every unit sold due to financial resource of DSD is consisted of usage shares of Green Dot's users. The Green Dot signs on Dove Cream bar soap, Nivea deodorant sprays, Dogus Holding's Filiz brand barley vermicelli can be shown as an example. The Green Dot sign has also been taking place increasingly in many Turkish products. It is obligatory to comply with the following matters in order to have the Green Dot.

- It shall buy PET in place of PVC waste usage.
- Styrofoam usage shall be substituted by cardboard pieces.
- Single material packages (composite packages) shall be avoided.

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- In composite packages materials shall be separated hassle-free as not to leave wastes.
- All plastics shall be marked.
- The use of poisonous (toxic) print inks (e.g., heavy metal compounds for silver, bronze and gold colors) has been prohibited.

The "ÇEVKO Green Dot" emblem attached on the package of a product in Turkey is a mark showing that the brand owner offering this package to the market fulfills the recycling responsibility with collaboration of ÇEVKO as per the Regulation on Package and Package Wastes' Control. ÇEVKO recognizes the right for using the "Green Dot" mark on the packages as an expression of participation into the system to the economic enterprises which, it assumed, is their responsibilities (http://www.cevko.org.tr/cevko/Ic-Sayfa/Cevko/Yesil-Nokta-Sistemi.aspx).

Green Packaging Strategies

As a result of developments occurred in packaging industry and product diversity, package usage has increased such that package wastes have become a problem. Laws are being implemented for the enhancement of the recycling and reusage of used packaging materials, reduction of the reuse of packaging material in order to ensure minimization of the package wastes' damage to be given to the environment in all European countries. It has become inevitable to be successful in the name of decreasing the pollution about packaging creating excessive environmental pollution. The essential green package strategies are reduction, recycling, reusing, retrieval.

These areas should be reviewed with regard to design and selection of environmentally friendly packaging method:

Whether the materials used in packaging is obtained from a scarce or diminishing resource.

The energy use is at which level in the manufacturing of the package material.

Whether the packaging design is in the format of easing the reuse of these materials.

Whether any components of materials used in packaging cause difficulty for the recycling process, constitute the matters that needed to be considered.

Today in Turkey, per capita packaging consumption share is increasing rapidly. According to the research conducted by WPO (World Packaging

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Organization), Turkey seems a candidate for being the fastest growing market in the world about package consumption. The aforementioned research data demonstrated that about 5-billion dollar package market in Turkey increased by 101 percent between the years 2005 and 2009. This is also the highest increase rate among the developing countries. Especially, the world packaging industry is being influenced adversely from rising prices in plastic raw materials. In spite of this negative influence, the consumption in the world packaging sector which shows a rapid growth in parallel to the developments in shopping and consumption culture has reached 564 billion dollars in 2009.

Reduction

The reduction involves the reuse of packages. Reducing package wastes with respect to quality and quantity (Marangoz, 2003, 168–169):

- Reduction of package wastes as quality: It is the avoidance from the use of hazardous and toxic materials. To reduce polymer in packaging (substances sort of polymer is not environmentally friendly) contributes towards reduction of package wastes and quality.
- Reduction of package wastes as quantity: Being smaller of package wastes with regard to quantity as a result of the use. For example, light packages, to avoid excessive packaging, using other materials that can replace nonrecycled materials.

Recycling

Recycling is putting wastes in the manufacturing process as secondary raw materials after having passed through physical or chemical operations. For example, making broken glass bottles as raw materials by melting, using the broken glass in the manufacturing of sandpaper, obtaining plastic products again from waste plastics. Recycling after consumption is exposing waste materials, which emerge as a result of personal consumption to the recycling. If we define it generally, recycling after consumption is the domestic solid waste resource comprising wastes coming from homes. From the macro marketing point of view, the basic objective of this process is to separate materials taking place in the current solid waste source into categories. Reprocessing of the waste has arisen from the recycling concept. Recycling is to find and bring out those that can be used among waste materials and make their condition as reusable. Disposal of a product being used in the traditional sense is seen as a straight line. The product is used up, disposed and

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gone away. However, the recycling concept refers to a cycle. In this way, it would be retrieved to waste materials market (Polonsky and Mintu, 1997, 242–243). Recycling after consumption, which is a sub-form of recycling, has an operating system specific to it with respect to materials subject to recycling and with regard to waste producers. Fuller says: "Wastes after consumption are consisted of materials emerging as a result of daily consumption activities from thousands/millions houses. However industrial wastes far surpass the wastes coming from houses in quantity even if they are less in terms of variety" (Polonsky and Mintu, 1997, 243–244).

Reusing

Using wastes over and over again till its economic life span is expired with its same shape without subjection to any procedure except collection and cleaning is called as reusing. For example, cleaning of glass bottles from the substances inside and using them again for the same purpose (Çevko, 1991, 6).

Retrieval

It is a top concept covering the recycling and the reusing. Beyond the recycling and reusing, it is the conversion of the internal compounds into other products or energy through physical, chemical or biochemical methods by utilizing the wastes' characteristics. For example, the procedures such as incineration, pyrolsis, composting are examined in the scope of retrieval although they are not included by recycling and reusing. The retrieval covers multiside economic, administrative and technologic activities which are required in conformity with these definitions. Targets of the retrieval can be summarized as follows.

1. *Resource Protection:* To slow down the consumption speed of primary raw materials, by involving the wastes as secondary raw materials.
2. *Environment Protection:* To minimize the pressure created on nature by wastes scattered around the environment irregularly, and regular storage areas decreasing gradually particularly in densely populated metropolitan areas.
3. *Energy Recovery:* To lower the consumption speed of non-renewable energy sources with the usage of waste substances' energy contents (Çevko, 1991, 6). Preconditions of the retrieval are divided as being collection and separation.

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Collection: The waste retrieval process begins at the moment when products are consumed. Recyclable components in the total solid waste, regardless of their recovery purpose and method, should be collected regularly and in an economic manner in a certain place. This is a complex procedure necessitating a good and detailed planning. Two basic methods can be used in the collection of recoverable wastes. These are the regulations towards:

1. Have the consumer brought.
2. Take from the consumer.

Have it brought method is a passive method in terms of the collector and depends heavily on the effectiveness of the consumer. Individuals bring their wastes to collection boxes, buy-back points or separation/processing centers by covering a certain distance. Consumers may perform this action voluntarily or against interest. Deposit is one of the retrieval/have it brought methods. As seen, it may contain elements such as incentive or coercive-punitive (deposit). The identifying characteristic of the taking method which is an active procedure with respect to collector organization is the requirement of private vehicles and personnel allocated for this job. It is based on the principle of collection of wastes, which will be recycled after being accumulated separately by the consumers in containers manufactured for this, from pavements or houses and then transported to collection centers. Collection teams may perform this job during the collection of general garbage. The selection of items to be collected in both methods depends on the features of current recovery substructure in the region. In this context, it is possible to address the subject in three different ways.

1. Collect all recyclable materials together.
2. Collect one by one on the basis of raw material type.
3. Collect together the recyclable waste in a selected number.

These options become difficult from the top-down in terms of consumers, and it is seen that this will affect adversely the participation and the success. The determinant is the collection method. Some of the local factors needed to be considered in planning the retrieval are as follows (Çevko, 1991, 6–8):

1. Transportation facility with door-to-door collection vehicles, placing boxes and purchasing units (keeping in mind road, street

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and pavement width, traffic density, the distance between the collection points and collection/separation places).

2. Consumer habits (average shopping frequency, the ratio for going shopping on foot or with automobile, availability of sufficient place for accumulation of wastes in the house, minimum carrying distances for substances if wanted to be brought back by individuals, problems related to the training encountered during recollection, recycling duration of the waste, etc.).
3. Collection and evaluation methods existing already, their capacities, their integration into the system and the problems faced in practice.
4. The property of the structuring in the application area (single floor and multifloor structures' proportion and distribution, average population per household and age sets, etc.).
5. General solid waste quantity per capita.

For an effective recovery, recollected materials shall bear the attributes compatible for being processed. Immediately after the consumption, recoverable substances will be qualified to the extent collected from the near-by of the consumer. The level of personal responsibility to be expected by consumers should be identified correctly. The participation will increase in the same proportion with the individual responsibility, depending on how little and plain, easily understood and applicable. On the contrary, there is a necessity for constant inculcation of even this minimum responsibility to the consumers. The four items used in collection systems are.

1. Returnable sales
2. Incentive for voluntary participation
3. Rewarding
4. Purchasing

The distinguishing feature of deposit application and purchasing is the unit price deemed suitable by the consumer or administrative authorities in the first one and is determined freely through market conditions in the second one. Meanwhile the rewarding is related to rewarding the participant selected in specific times and towards keeping high the participation. Here the quantity and frequency of the award is identified by the collector.

Separation: It is obligatory for the materials collected for the purpose of recovery to be separated meticulously and in the form as required

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by the selected evaluation method for being able to serve this purpose. Besides, the undesired substances which have been collected into the material are eliminated during this stage. Separation can be grouped as follows depending on the stage in which the collection is done (Çevko, 1991, 6–8).

a) Separation at the resource: This is the accumulation of recoverable wastes by the consumer when they are still in special pots. This method is mostly tried in places like United States and Germany where participation and education level is high and consumer masses are motivated relatively easily; and single-storey buildings are widespread. In addition, multicollection boxes can be regarded in this scope despite being collected by the having it brought method. Pollution is less in this separation method.

b) Separation during collection: The materials of more than one sort gathered in a special vessel separately from the general garbage in the houses can be separated by workers while they are pouring into the specific compartments of collection vehicles. This method, which lowers the collection speed, necessitates that vehicles are specifically designed suitable for this job. The classification done in purchasing centers can be included under this title. An advantage of this separation method is being able to minimize the transportation costs by squeezing the classified material.

c) Separation at the center: This is the separation of recoverable materials collected together at the center by have it brought method. The classification of recoverable materials after sorting out them from the general garbage in or behind the general garbage evaluation facilities or the storage areas also enters in this group.

2.1.2 The green label (eco-labeling)

The green labeling system is a certification method of companies' green properties for the society. Institutions are assessed according to the environmentalist criteria specified by international or local organizations. As a result of this assessment, they receive labels according to their compatibility to the environment. International Standardization Organization (ISO), 14000 certificates series have been prepared in an attribute to realize this standardization. The basic purpose is to ensure consumers see how environmentalist each product is. The green labeling

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both addresses the environmental consciousness of the consumer and supports the manufacturers for pushing their limits for an environmentalist attitude (Emgin and Türk, 2004, 42). The green labeling bears a reward qualification granted to the products deemed as less harmful to the environment compared to other products. Green labeling is a means to enhance the sensitivity of consumers for health and environment and to ensure their preference of using not harmful products. ISO has developed a series of standards for environmentally sensitive labels, and three different environmentalist labels have been identified here (Yağcı and Özcan, 2008, 637).

1. Conformity seal labels public or private enterprise products appreciated by third parties and gets the tag if they meet a series of criteria specified beforehand. The criterion is determined for different product categories with respect to the multi- and environmentalist situations of the product and by the labeling institution. These labels are sometimes used for specific type products like the Environmental Choice for painting and surface coating or the Energy Star for lighting and devices. These labels are usually represented with a logo placed on the product or on the product packages.
2. Self-explanatory labels are based on the declaration explained by the manufacturer about the green performance of a product. These labels typically refer to the status of the product in relation to the environment.
3. Green product statements provide data regarding the environment about a product. These statements are presented by the company making the product or service and are usually certified by third parties. These usually take the form of a pamphlet rather than a simple label or logo.

Today, environment labels have gained pretty importance especially upon the strengthening of consciousness towards the protection of the environment. Consumers, industrialists and the society as a whole pay more attention to the impacts of a product on the environment when buying a product. Environment labels show that they are environmentally friendly in the entire life cycle of a product, fulfilling the requirements regarding the environment. The environment label differentiates the product bearing that label from similar products in the market. There is not any obligation to acquire an environment label; this is a voluntary

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application. If a company acquires an environment label, it can use it as a marketing medium for its product.

An overview of green labeling programs

The green labeling programs have gained importance in order to keep alive economies, to catch competitive advantage in the market, to establish institution reputation and brand value against consumers; the green wave has affected all corners of the world. All countries have begun to resort to proving their sensitivity for the environment through green labels. The following programs have been set up in order to evaluate the attitudes of products with regard to the environment (Wasik, 1996, 105).

Blue Angel/Green Dot (Germany): The Blue Angel is one of the oldest eco-labeling programs. The Blue Angel, which became the model in Green Seal program in the United States, identifies standards for product categories. Federal Environment Organization, or Umweltbundesamt, applies tests on each product categories in order to measure qualities related to the most important environment. After the necessary standards are determined for every category, manufacturers attend tests and pay fees. If they are admitted, then the manufacturers make payments for the agreement to be signed in order to use Blue Angel Eco logo and to get license. The Green Dot, which is a program examining consumption products, is a separate recycling program not directly dependent on the Blue Angel.

Ecomark (Japan): The oldest program after the Blue Angel is Ecomark. It distributes awards with aids from Japanese Environment Organization. Product categories and rewarding criteria have been specified by the committees in Ecomark like Blue Angel. Reward criteria are as follows: (1) preventive criteria and pollution reduction during manufacturing; (2) operation process not so difficult as the waste; (3) energy or source saving provided by the product; (4) product and producer compatible with the quality and safety rules; (5) price difference occurring between substitute products. To receive logo license, a period of at least two years is necessary.

Ecomark (India): The study, which is conducted in association with the Indian Ministry of Environment and Ministry of Forestry, starts with identification of product categories. Examinations are made within scope of these categories for 60 days. The qualities being taken into consideration with respect to the environment are (1) potential pollution amount to be generated during the stages of manufacturing, usage and waste;

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(2) recyclability; (3) reduction seen in the use of nonrenewable resource; (4) decrease in the impact caused on the environment. This license also has to be bought with money like other programs.

Ecolabel (European Community): If Ecolabel member states' approval is received, which was designed after Blue Angel, it determines the criteria by identifying product categories and distributes the rewards. This program operates with a standard method. Products and producers are evaluated with respect to waste, pollution, noise, energy, consumption and their impacts on the ecosystem.

Environmental Choice (New Zealand): This program, which is conducted by Telarc, has been designed by taking the Blue Angel as an example. Product categories and the criteria are identified by committees. A product can get a certificate as long as it meets these criteria: (1) providing energy consumption; (2) reducing the damage resulting from products; (3) using recycling material; (4) separating material which can be sent for recycling. The period required for getting license is two years.

Eco-Mark (South Korea): Eco-Mark is relatively a new program and supported by the Ministry of Environment. Committees have been established in order to specify category and criterion, to poll the public opinion and to monitor progress. Certification of a product depends on manufacturers' meeting criteria. Manufacturers pay license fees and the stipulated time for receiving license is two years.

Stitching Milieukeur (The Netherlands): The program, which is conducted by Stitching Milieukeur, is unique in its field due to not setting any standard by itself. It admits proposals coming from consumers, industries and environmental organizations. Therefore the interested parties can offer proposals in specific categories and even offer aids. The most significant feature of the program is the use of life cycle analysis and resorts to update every three years (Neitzel and Landmann, 1994, 50).

Green Seal (US Private Environmental Groups): This business model uses Blue Angel program and deals with private sectors about issues regarding the environment. The people are asked for commenting on categories and criteria. Tested products are assessed according to these criteria: (1) Toxic chemical pollution; (2) energy consumption; (3) impact on water resources; (4) impact on wild life; (5) consumption of natural resource; (6) effect to the atmosphere; (7) global warming. It evaluates the impacts of the product in the life cycle despite the fact that it doesn't use the life cycle.

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Environmental Choice (Sweden): This program, which is conducted by the Society for the Conservation of Nature—the biggest environmentalist group in Sweden, was designed after the Blue Angel. Categories are specified, criteria are identified and the products complying with necessary criteria are rewarded. This program is an alternative to Scandinavian eco-labeling program White Span.

On the contrary, Ecolabel is a method that performs environmental message checks for the benefit of consumers in many countries. Canada, United States, Germany, Japan, European Community and Australia are among those using this method.

Green labeling and certification in European Union

New EU eco-label which will be valid in all EU countries has been started to be developed in order to create and popularize various eco-labels in EU countries. As a result of this, environmental label system of EU has been established with the Regulation No. 800 dated 23 March 1992 of EU Council. Within the scope of this system, environmentally friendly products are rewarded with environment label. EU environment label is being developed for products except food, beverage and medicine (Özden, 1999, 3–4).

It is the aim of the EU environmental label system

to develop the design, manufacturing and marketing of products not harmful to the environment and to reward these products with the environment label, which will enhance its sale;
to make consumers conscious of the impact of these products on the environment (Ural, 2001, 137).

Obtaining the environment label is a voluntary application not obligatory within the framework of European Union environmental label system. But it is useful to know and follow the criteria developed for various products by companies exporting to EU. It is required to specify the environmental criteria related to the definition of the relevant product for the environmental prize to be given for a product in the system struggling to be established with the environmental label at EU level. All phases from the selection of raw material to the manufacturing, distribution, consumption and being recyclable when its use ends for the product are grounded on the determination of the criteria.

Turkey Foreign Trade Undersecretary endorsed the EU Eco-label as a candidate to become the only label of Europe and valid in the entire

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Europe to make into the list of certification support towards export within the scope of supporting the environmental costs. The studies to be carried out for getting EU Eco-label label, which will be the single label of Europe and is an opportunity for Turkish companies desiring to export their products to European green market, is supported by a rate of 50% by the government.

2.2 The green price

The base price is determined by the sum of costs where the top price is conditioned according to the value ascribed by the consumer to the product. Pricing, set under the limit of the sum of costs, will bring not profit but loss to a given business enterprise and when the price is set higher than the value ascribed by the consumer then demand will not be initiated. Taking this fact into consideration along with fundamental pricing approximations, based on cost, competition and value, and green price issues are elaborated as stated in the following paragraphs.

Pricing of green products and services serve as a crucial issue. With an objective to revert their facilities and codes of conduct to be environmentalist, numerous business enterprises have to put up with a number of cascading costs. For instance, the remodeling, reengineering of the production process and methods of manufacturing. In such a case, costs will be inevitably reflected in prices making the green products comparatively pricier than their equivalents. One encounters with drastic price differences when it comes to organic products. However, despite the cascading costs businesses have to bear with when executing green marketing practices, the energy (packaging, delivery, etc.) they save in return should not be disregarded. Subsequently, when conducting cost assessments, beneficiary acquisitions attained as the end result of fund costs should also be taken into account. Subsequently, beneficiary acquisitions attained as the end result of fund costs should be assessed together with cost assessments when conducting investment analysis (Kırgız and Erdemir, 201, 274).

One of the most important problems of enterprises making investment by keeping in mind the environment is how the green products are priced. Products friendly to the environment are manufactured with additional costs due to intense efforts made on the reduction of energy usage during manufacturing and the efficiency of the resource

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use. Therefore, these product prices can be higher than other products. Hence, the products which are less harmful to the environment can come only with high cost without yielding in short terms and sometimes enduring for long terms. Its reason is having additional equipments which won't damage the environment. For example, the price of organic products is usually higher than conventional products. The premium described as the price difference between conventional products is associated closely with the price that most consumers are willing to pay. The most important factors affecting the premium in organic products are the premiums set by manufacturers and retailers. The sublimits of organic product prices, which do not reflect the supply and demand exactly, are comprised of manufacturing and marketing dependent on the supply, and the top limit is determined with the price which the consumer is willing to pay. The aforementioned limit varies depending on the market, and on a national basis, price premiums vary according to the distribution channel used and marketing costs. On the international scenario, premiums vary depending on the manufacturing and marketing costs with the purchasing power and the income level affecting the price willing to be paid.

Environmentally sensitive product is offered for sale with higher prices compared to conventional products. Also, consumers are more sensitive towards the products produced sensitive to the environment in which they are living and prefer these products rather than others. For example, IKEA doesn't allow customers to send plastic bags to the house at the end of sales. Customers have to pay 0.59 for reusable bags or have to make always available the bags in which to carry the purchased items. The use of plastic bags has dropped to 35 million from 70 million with a 50% decrease in the United States (Rarick and Feldman, 2008, 113). As each habitual product, green products also benefit customers and expect a price in return. Many known marketing theories, enterprise strategy theories and microeconomic theories assume that whereas customers try to lower the price at the least, they want to raise the benefits to be obtained to the top levels. For this reason, they decide on the products offering the highest benefit-cost difference. When judging from this economic approach, purchasing green products is the result of these products' benefit-cost balance being better than the other habitual products in the eyes of customer.

The factors affecting the price formation can be listed as follows (Meyer, 2001, 317–330).

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Product cost: Quite large spending must be done for investments made for the purpose of protecting the environment. Changing of manufacturing methods, resorting to waste management, exhibiting an insistent attitude in all stages of environmentalist manufacture will cause to increase the cost of product generation.

Procurement of environmentalist by-products: Supplying of products to be used in the manufacture of environmentalist products from different suppliers in the country will bring an additional cost to products.

Transportation: Product expenses will be higher with respect to minimization of wastes, generation of energy, transportation costs, tools and methods used for taking the product to the completed or completing stage.

Finding financing: Especially in developed countries the enterprises manufacturing by utilizing environmental strategies can more easily find financing because the government (in many European countries) wants to give loans to the enterprises applying environmental strategies compared to those not applying.

Organizational change: This is related to enterprises making changes in their organizational structures to include more environmental implementations, especially with respect to lowering waste costs, using environmentalist technologies and so on. The cost of this change will be high and will affect largely the price of the product manufactured.

The consumer mass: All cost factors described in the preceding paragraphs will affect the price of the product manufactured, and the price of the green product will be much higher in comparison to conventional products. This will also affect the number of consumers who want to stop the unsustainable development of the world. Thus, it is seen that there is a constant rise in the numbers of consumers who would like to pay more only with this intention to the high-priced products of environmentalist enterprises.

Manufacturer premiums: The organic manufacturers, who have a cost higher than the conventional products, have to apply a premium for meeting the aforementioned costs. Generally, the premiums paid to farmers constitute a small part of the prices paid by the consumers. Marketing, transportation, packaging, processing and insurance costs are not included in manufacturer premiums.

Consumer premiums: A regular registry concerning the consumer prices is not available in many European Union member states; prices are inquired at different shops in different regions and the average of

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these prices are taken. It could be more useful to examine consumer price premiums because consumer prices are affected based on local VAT ratios, different distribution channels and the competition between the conventional and organic sectors. Retail premium product group range on the basis of country and region, and it is thought that marketing cost per unit will fall mostly with becoming more organized with respect to distribution channels. The prices for processed products vary significantly, and the prices can be sometimes lower for low-cost inputs or the same like the conventional products. The retailers' pricing policies are effective on the premiums, and it is dependent on the advertisement campaigns and the agreements made with the suppliers. It has been observed that the products symbolizing the quality with its brand and have a say in the market for many years generally have higher premiums compared to new products and brands. In general, consumers are inclined to give higher premiums for the products offered for sale in privatized shops, and this is the result of the store's other properties affecting the customer (Babadoğan and Koç, 2005, 49–50).

2.3 Green distribution

Distribution is a process that ensures flow and storage, taking under control the planning of the movement inside the supply chain from the beginning point of all kinds of products, services and information flow up to the last point where the product is consumed, to be precise, the inventory of the process, so as to be effective, efficient and with the lowest cost in order to meet the needs of customers. Today, many enterprise managers in charge of distribution are aware of the sensitivity increasing on the environment and accordingly have realized that the competitive advantage has a close correlation with the factors related to the environment. The enterprises, which hold their environmentalist approaches above everything else, are developing well-coordinated green distribution strategies for not losing competitive advantage in national and international markets.

The cost of transportation, which is an important logistical subprocess, has a notable share in the total costs, besides being a determinant in some sectors (mining, chemistry, iron-steel, cement). The first thing aimed in distribution is minimizing the environmental costs. Enterprises have struggled both to improve the use of the package and the use of raw

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material in order to lower distribution costs. For example, laundry detergents are being sold in smaller packages. So less energy and raw materials would be used with less load carrying (Polonsky and Rosenberger, 2001, 21–28). The bad effect left by nonrenewable resources in the distribution is too much. Particularly, the innovations related to the computer and information technologies have been increased, including the hardware, and being a knowledge-intensive business model, there are residues in the transportation, warehousing, customs clearance and so on in the intermediate stages. Now, it is necessary to develop maximum benefit and minimum energy strategies in the distribution by establishing new network links in the name of hindering the costs added through nonrenewable resources and for rooted rivalry. Distribution strategies should contain the following factors (in short and long terms) (Jolly, 1992, 204–205).

1 *Short-term green distribution strategies*
   Full environmentalist inspection should be applied in current activities.
   Life period analysis should be carried out in order to find out the environmental impacts of the distribution strategy.
   Reviewing and monitoring programs must be developed for environmental performances of distribution functions.
   Connections with local communities should be established in order to provide feedback about environment and other social problems.
   Product balance sheets of the energy and substances used in the distribution activities should be kept.
   Reasons for bad environmental performance (distribution channel and activities) should be concentrated on.
   Certain principles and criteria related to the environment in transportation vehicles and general purchasing strategies should be followed.
   For the administration of hazardous materials a program should be developed.
   Educational programs about the environment should be arranged at the top level that will also include the development.
2 *Long-term green distribution strategies (should be adopted)*
   To implement impact assessments on the environment in the future entire activities

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To develop the transportation networks for being able to realize the developments
To develop the active plan for being able to follow legal regulations
To train drivers for less maintenance costs and to renew and develop their knowledge
To provide financial saving by ensuring effective fuel consumption
To establish relationships with interior and exterior interest groups

Now, across Turkey, numerous banks exercise online banking. Over the internet, all outputs of banking activity are delivered via e-mails in the form of electronic receipts that can be printed on demand. This highlights the evolution of the distribution channels of the finance sector that can be regarded essentially as a green application when considering the fact that it encourages the elimination of carbon emissions generated with each visit to the bank and consequently leads to a decrease in the degree of economic depletion related with the preparation of necessary financial paper work. In consequence, as an alternative channel of distribution, internet is a medium enabling product and service demand and can be emphasized to bear eco-friendly qualities. The Green Physical Distribution Strategy contains factors such as Transportation, Warehousing, Inventory Management, Receiving Orders, Loading, Unloading and Reverse Logistics Concept.

2.3.1 Transportation

Transportation can be defined in the narrow sense as the transfer of an object (goods, product, load or asset) from one place to another place. Transportation movement's beginning is the manufacturing regions, and the ending is the consumption regions. The purpose is to deliver the goods produced with the intention of satisfying customer needs to the regions and centers in necessity with the fastest, safest and the most correct and economical method (Koban, 2007, 92).

The criteria affecting the decision to be made by parties in the determination of the transportation type are multifaceted. There are many risks with respect to the environment caused by transportation and the type of transportation. The release of many chemicals harmful to the environment, noise pollution and deteriorations on the environment that occur during transportation can be ranked among the risks regarding the environment. New policies are tried for the purpose of finding solutions to the problems related to the environment in the

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green distribution. It is necessary to minimize the damage done to ozone layer and human health by reducing the carbon monoxide and nitrogen oxide gases emitted to the atmosphere by vehicles in order to prevent global warming. Implementation of exhaust standards, creating awareness of unleaded gasoline, widespread use of transportation vehicles such as tramway and metro and application of traffic policies which will pollute the environment only at minimum levels are significant efforts performed by developed countries in order to reduce the damage caused to the natural environment by wastes generated from transportation.

The European Union has specified a program under the name of Euro Norms in accordance with the determined objective. The Euro norm is namely a program for reducing gradually the gas and particles emitted from using the fossil fuel within a certain period. The member states of the European Union are compelling the manufacturers for producing more environmentalist vehicles by raising constantly the bar of Euro 0 emission standard which was made obligatory in 1990. Registration permit for the traffic was given to the vehicles having Euro 4 norm in 2006, and Euro 3 in 2001; and new regulations have been made regarding the conformity obligation to Euro 4 norm for new engines from October 2008 and to Euro 5 norm for all vehicles in 2009 legally in Europe. The European Union is encouraging Euro 5 engines with incentives like road tolls and tax reductions in order to achieve this goal. There are some measures tried to be implemented by EU Commission as well (http://www.und.org.tr/index.php):

- Technology and fuel changes which will continue to reduce the emissions arising from automobiles, trucks and buses.
- Utilization of taxes and subsidies for internalization of the external costs and orientation of the demand towards the transportation modes qualified as more sustainable with respect to the environment, for example, railway and sea transportation instead of highway.
- Beginning with the Trans-Europe Networks (TEN), performing evaluations related to the strategic environment of transportation networks and plans to minimize the adverse effects on nature and society.
- Discouraging the use of highways for long-distance freight transportation and encouraging the use of railway instead of airway for passenger transportation up to 1,500 km.

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2.3.2 Warehousing

Another important element of the physical distribution is warehousing. Warehouses are the places within the enterprise body where raw material, semifinished and finished products are kept and held. Warehouses can cause package waste. The use of standardized reusable containers reduces the procedure and package costs. Good and safe storage at the same time reduces the stocks and recycling movements. Some warehousing procedures such as cargo transportation, recycling, stocking and destruction reduce the impact of transportation and warehousing systems on the environment, and the effective use of this kind of activities reduces the costs. Combining of the loads in transportation and warehousing increases the efficiency of the vehicles and this is also an environmentally sensitive approach. The effects of warehousing on the environment vary depending on the place, size of the warehouse, energy consumption, waste generation and management, visuality, noise and complexity and pollution. Warehouse/warehouses should be close to the consumer due to the financial and operational reasons in order to eliminate the worries about the environment. Being adjacent to the warehouse reduces the impacts of transportation activities on the environment (Marangoz, 2003, 160).

2.3.3 Stock

The stock problem, when taken up in the simplest sense, contains the problem concerning the necessity of when and in what quantity a product/material is required to be ordered from the chain member (enterprise) which is one stage back in the supply chain. But the problems regarding the stock management can become pretty complicated due to demand uncertainties, variations in manufacturing stages of and variability and disruptions in the delivery durations among the members of supply chain. The purpose of the stock management is to meet orders without making much stock investment and thus being able to minimize the impacts created or to be created on the environment.

2.3.4 Receiving orders

Today's intensifying competitive conditions bring to the forefront the positive relations established between the organization and the customers

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as a factor providing superiority. However, good customer relations can't be established only with the marvel of engineering products, low prices or high-quality product development. Good customer relations also necessitate a good logistics service. To receive the products through right channels is quite important for every company to deliver products to their customers. Besides, receiving products in correct quantities and good conditions are also a fairly critical operation. Hence the competition requires better customer service and delivery of customer orders in an appropriate timing. Receiving orders, packaging, stock keeping, high-quality physical transportation bring along high costs. However, the quality will do away with these high costs if customers are satisfied. Receiving orders and packaging are the processes taking the most time. For customer satisfaction, the materials should be delivered in the exact amount desired at the production-distribution-consumption line and just in time when these items are needed. Order taking programs for keeping minimum stocks can be put into practice by adopting the green distribution understanding.

2.3.5 Loading and unloading

Accumulating loads and transporting them together increases the efficiency of the vehicles since this is a environmentally sensitive approach. A fully laden vehicle enables saving by reducing the transportation cost per unit. The modern inventory method techniques such as just in time production increase the traffic due to frequent carrying of materials and parts. The decline in the inventory increases the transportation costs and therefore enterprises should regulate the transportation frequency and inventory levels (Marangoz, 2003, 160).

2.3.6 Reverse logistics

The reverse logistics is taking back the goods to the original point from customers because of damage, return, rejection, recycling of packaging materials, expiration, obsolescence, disposing, repair and so on after the delivery to the customer. Reverse logistics system confronts problems when a product is offered to the market after the recycle after consumption. To select the materials that can be used among the wastes, to classify and to accumulate them is just the beginning stage. Subsequently, it is followed up with meeting industrial users who have

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taken up the products for recycling by offering them to the market. Four basic elements are required for ensuring this cycle (Bone and Kurtz, 1992, 406):

1. Technology should be available at a sufficient level in order to process a product that enters into the recycling process (e.g., a technology which will promote the purchasing criteria for the recycling material).
2. Secondary materials/products available in solid waste sources have to be in sufficient amounts and constant (e.g., recyclable aluminum, steel, paper, plastic, glass).
3. A profitable bridge should be established which closes the distance between the secondary product suppliers and users.
4. A recycling market in which the product can be sold should be present.

The difficulties being experienced while designing the reverse logistics are certain; therefore the target markets, material types to be used and appropriate handling procedures, resources of materials, roles of members dependent on the channel and the share of profit to be obtained from all these formations should always taken into account. The materials exposed to recycling can be taken to three essential industrial markets through reverse channels: (1) Producers; (2) Companies manufacturing raw material; (3) Other industries preferring recycling materials. These markets usually demand a large number of the aforementioned high-quality goods and attach importance to the continuity of products (Polonsky and Wimsatt, 1997, 247). The reverse logistics systems, which have been developed for materials after consumption due to the nature of waste resources, have to highlight their classification and accumulation functions. In this way, it will be easier to supply the demanding industry branch, by collecting a great number of a certain product type.

2.4 Green promotion

Another issue falling under what can be referred to as green practices is the execution of activities such as advertising, personal selling, sales promotion, point of sale communication, direct marketing and public relations of marketing on the basis of environment consciousness. For instance, utilization of digital mobile coupons, resorting to recyclable

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material in the manufacture of inserts, utilization of recyclable content in promotional gifts, making use of video sharing websites such as Google video, Youtube to make and spread advertisements (viral and informatory), sending verbal or digital notifications to consumers via e-mail, spreading the word by way of mobile phones (consent granted), and so on. In addition, the work force to be educated so as to heighten environment consciousness plays a vital role. Not to forget, the materials utilized by the work force to be eco-friendly is crucial as well. Aside from these, reaching to and contacting with consumers and other environmental corporations via social platforms such as Facebook and Twitter will reinforce green intelligence. Thanks to advances in technology and modern decade's necessity for businesses to take orders online, which cuts down consumer time, energy and unnecessary usage of paper work involved when placing regular orders, online orders are in the range of green practices (Kırgız and Erdemir, 2013, 276).

2.4.1 Green advertisement

Today human-induced environmental problems have reached proportions that threaten the life of living beings. As a result of this, individuals who become aware of the increasing environmental problems are acting more responsibly in approaching the environmental problems. In addition to consumers, institutions and organizations, which are accused frequently for the onsetting and acceleration of environmental problems, have started to behave environmentally oriented. This has led to the emergence of green marketing and green advertising, at more micro level.

Advertising, which is the oldest and the most important components of marketing, generates an important driving force in preferring a brand's products and services. In a market with intense competition, advertisements which have become a part of the lives of people contain the power in itself for affecting a large segment of the society positively or negatively in social, cultural and psychological aspects. The importance of social responsibility undertaken by advertisements is also increased, as far as the scope of advertisements' impact area expands. Today's conscious and knowledgeable consumers desire to be informed about various environmental factors, not to conflict with the community wherein they live by behaving and thinking in accordance with traditional norms, to be loved, to be respected and to socialize in the right direction. To educate

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people in the direction that will allow them to adopt and perform the correct things constitutes the core social task of the advertisement.

Today, becoming conscious to protect the environment/nature/human/animal is called as green movement by a significant part of the society, and this also has naturally affected the advertising sector. This sensitivity of enterprises has led to necessary regulations being made in advertising strategies and applications. Along with this formation, advertising agencies have begun to produce ads containing green messages to customers in line with the wish of advertisers. The main green messages which have been highlighted in ads are the manufacturing of products that save water and energy, the use of materials that can be recycled and dissolved by itself in the nature and not using animals in experiments. The ads containing this kind of messages are called as green ads in the literature. The green ads also contain messages such as the product, service and/or the entire enterprise taking into account the environmental problems and strive for the prevention of environmental pollution and improvement of the environment, being conscious to not be harmful to the environment, human health and animals. The green ads also set forth the relationship between a product/service and biophysical environment, expressly or implicitly, dignifying the green lifestyle by drawing or not drawing attention to a product/service, revealing the institutional environmental responsibility image or carrying out a few of these in one lot.

The salient and the most important feature of the green ads is to make the consumer rich in terms of information. Consumers search for detailed, comprehensible, supportive and useful information of the product and the environment. For this reason, detailed, but not exaggerated, real and informative account should exist in green ads. In addition, environmental ads provide various benefits. A less environmentally damaging product compared to similar organic ones are perceived as a benefit by consumers; consequently, a large portion of the consumers react positively against the green ads which they think are really beneficial to the environment. Therefore advertisers should carefully lay stress on the visible, consistent and tangible benefits of green products. While a product's being environmentally friendly was seen as an extra feature in the past, nowadays it has become a cause for the sale. Being environmentally friendly of a product will perhaps be the only cause for sale in the future. In the promotion of a product, emphasizing the features such as environmentally friendly, natural, recyclable, easily disintegrating

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in nature, ozone friendly, containing natural raw material, reusable, providing energy saving, being produced in environmentally friendly production processes are the elements to make any advertisement as the green ad. Green ads convey messages and information regarding how the aforementioned products contribute the environmental development or how help for reducing the environmental destruction.

Green advertising shall sell the environmental agenda of the enterprise. The marketing message shall emphasize the manufacturing, distribution, packaging, recycling or disposal policies. Product's message shall be special and shall address universal consumer problems. If an enterprise combines its green policy and environmentalist strategy with a good product design, it can obtain a considerable public support and can utilize this effectively as an advertisement. The product itself is a significant green message depending on how it is designed, packaged and marketed. It is not important for an enterprise how many or what sort image advertisement it generates; the important thing is being based on the enterprise order for environmentalist goals and to achieve these goals. Basically, enterprises should take responsibility in order to gain the confidence of public opinion. The best way to gain the confidence of public opinion is to market an effort that is completely environmentally friendly, composed through special annual reports, environmentally suitability assessments, "environmentally sensitive" labeling, cooperation with environmentalist and civil society organizations and communication with hopers. The features of green products can be explained by means of the ads. The quality of the information in the green advertising arena is very important. Consumers want to know the answers for certain questions in addition to the necessity for paying more money to green features.

Enterprises are trying to introduce the results of strategies towards the protection of environment to the community through the medium of ads. Green ads are prepared to provide four type of environmental information to the consumers (Banerjee and Gulas, 1995, 21).

1. Product Orientation: This focuses on the green benefits provided by the product. Bearing a message that advertises decomposing the natural way is a good example explaining this approach.
2. Production Process Orientation: Giving information, for example, specifying that 20% of the parts of a product are made of recycled raw materials, with the help of an enterprise's internal technological

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development and level, conveys messages related to what extent the product is produced sensitive to the environment in the production processes.

3 Image Orientation: These are details usually related to the enterprise image. It shows the environmental sensitivity and understanding an enterprise exhibits. Specifying on a product that the producer company protects the forests or a certain portion of the profit obtained from each product is donated to relevant organizations for the natural environment establishes a good example.

4 Green Information: In this approach, striking information are given in order to concentrate the attention of consumers generally on the cases related to the natural environment independently from the enterprise and general strategies.

In conclusion, advertisement messages consisting of popular environmental themes such as recycling, environmental and human friendly, ozone friendly, biodegradable, restraining from experimenting with animals promote a product's market. Green advertisers often utter these messages when confronted with consumer resistance. The need of the hour is ensuring the reliability of advertisement messages. This can be achieved only with meticulous planning initiated prior to the product being introduced to the market and through a branding strategy whose reliability won't fall after being placed in the market.

2.4.2 Green personal selling

Personal selling is the oldest selling method of the marketing sector. It can be defined as making "face-to-face interviews with customers for the purpose of informing them about the product and convincing them to purchase the product." It is the selective communication way that allows the preparation and use of persuasive messages which will meet the individual necessities of consumers. A salesperson, who is sitting in front of a potential customer, discussing his/her needs, explaining directly how to benefit from the product, has more influence than any integrated marketing communication component. The personal selling has the characteristic of the most expensive promotional tool in an enterprise. Personal selling appears to be the most effective integrated marketing communication component especially in industrial markets, for complicated products, or in high-quality markets.

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The answer to be given to the question of why the green personal selling is important is as follows: It features in the creation of public opinion by being the face-to-face part of the enterprise with customers; it also plays an active role in the marketing communication branch of the green marketing. Personal selling is bidirectional. It is performed face to face. Persuasion process varies constantly according to the consumer demands/needs and responses. This too provides the flexibility to the message desired to be conveyed. Thanks to this flexibility, sales representative can use creative persuasive ability and can present the message that he/she wishes to convey in a most impressive manner to the consumer. This is extremely important in the formation of the image of company/trademark as desired. Therefore the enterprises wishing to be remembered in the market with green images are attaching great importance to the green personal selling.

The salesperson, who is engaged in one-to-one communication with consumers, should give correct answers to the questions of consumers about environmental issues now and in the future. To achieve this, the marketer should inform the sales force about the issues related to the environment (Peattie, 1995, 243).

- Environmentalist strategy at the level of enterprise and marketing.
- Environmentalist performances of the products.
- Environmentalist performances of the enterprise's processes, policies and applications in specific periods.
- Conveying of environmental issues to the consumers and whether the final consumers are in demand for environmentalist products.

2.4.3 Green sales promotion

Sales promotion refers to the activities for increasing the sales temporarily, for short times, which cannot be conducted continuously. Nowadays enterprises are placing particular importance on the sales promotion program in order to appeal to distribution channel members for selling their products and to inspire the consumers for purchasing their products. Enterprises are utilizing the sales promotion among the marketing communication components due to the advantages such as opportunity to be able to get results in a short time, flexibility, high effectiveness, a platform to collect information from consumers, fewer costs per unit, being able to perform pilot or pretests before proceeding to the full application. However, in the event of excessive use it will reduce the value of

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the brand by shrinking the value of the product. Sales promotion can't be regarded as independent from other integrated marketing communication activities. Sales promotion strategies of green products take less part and are of less interest in the media in contrast to the ads. The lack of interest in the sales promotion is due to its short-term benefit. Being long term with respect to the commitments related to the environment will be more useful.

Price reductions, premiums and other monetary incentives, travel incentives, sales meetings, discount coupons, gifts, contests, promotional materials, fashion shows, letters and bulletins can be given as examples to sales promotion activities.

2.4.4 The green public relations

Public relations are the efforts of an enterprise to develop good relations with various interest groups in the society and to maintain these relations by giving information about its activities that are beneficial to the society. While public relations managers fulfill the coordination task of all efforts regarding the organization towards the public, they are also engaged in activities such as organizing press conferences, training employees, arranging for meals held in yearly/special occasions, dealing with complaints and criticisms, getting trained to appear and prove as experienced management in the press or on the television. Public relations studies are not just for consumers. They are also important for shareholders, employees within the organization, public organizations and external pressure groups. Therefore its sphere of influence is large.

Green Marketing can be supported and introduced with various public relations activities. The public relations activities, which are basically trying to make stronger the institutional image and brand value of the enterprise, takes an important place in the publicization of the green product or the green enterprise by organizing press meetings or analyzing criticisms, training and arranging conferences. The following items can be given as examples;

- Announcing to the press that the enterprise decomposes the garbage and the yearly positive contribution to nature has risen much more compared to previous years.
- The Body Shop brand's request from its dealers to implement local projects useful to the environment, which is one of the fine examples of mission marketing,

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- Arçelik Corporate's share with consumers through diverse mediums the Ecologist™ Dish Washer manufactured with materials that can be recycled by 86%, recovered by 13% and its contribution to the environment with low energy and water consumption prepared by using green technologies.

There are different public relations strategies adopted by the enterprise (Peattie, 1995, 226). These are as follows:

1. Attack Strategy: This is a strategy adopted usually by more environmentalist enterprises in order to provide competitive advantage.
2. Defense Strategy: This is a strategy adopted against any external pressure or attack.
3. Proactive Strategy: This is a strategy adopted by enterprises which can predict the criticisms about the eco-performance of the enterprise.
4. Opportunistic Strategy: This is a strategy adopted by enterprises which are developing competitive strategies that can provide competitive advantage to them or predict of environmental problems.

Wrong steps taken on the environment can cause nightmares for the public relations unit. These missteps may put an end to the existence of companies and can also lead to the damage of billions of dollars in the economy. The companies which have not included the environmentalist agenda in their strategies may face the risk of missing the vertical opportunities in the market which is more influenced by the environmental factors (Esty and Winston, 2008, 29).

2.4.5 Green sponsorship

Sponsorship is supporting resources (like money, manpower, equipment) towards an event or activity by an organization indirectly. In other words, sponsorship is investments made to shows and events in the mass media towards the goals of enterprise without purchasing place and time (Tek and Özgül, 2005, 749). Supporting culture, arts, sports or scientific events are a common way for the creation of positive feelings about the enterprise and strengthening its image. Consumers have gratitude and loyalty for the brands for providing social benefit and supporting favorite events.

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Sponsorship projects are carried out in various areas. In general, it is possible to gather sponsorship types under five basic titles. These are: sponsoring to sports activities; sponsorship towards cultural activities; social sponsorship; sponsorship for scientific projects; and activities and sponsoring activities towards the environment. In recent years, environmental sponsorship has gained importance due to the gradual degradation of nature, placing products that are harmful to human health on the market, utilization of animals in experiments and increasing environmental pollution. In environmental sponsorship, the associations protecting the environment are supported, efforts are taken to inform the citizens, meetings are held about the environment and contributions are made for taking local measures. The environmental sponsorship, which is becoming increasingly widespread, provides the opportunity for organizations to exhibit their responsibilities towards the society on the one hand and offers large possibilities to small- and medium-sized organizations on the other hand. In this scope, contests can be organized about the environment (painting, photography, composition), campaigns can be carried out (such as tree planting), studies can be performed towards informing (preparing television programs, publishing books/articles, arranging exhibition and slide shows), concrete assistance programs can be prepared (to protect the plant and animal species which are on the verge of extinction), the revenue of a sporting event or concerts can be donated. Social sponsorship is of great importance particularly for organizations if their production stages or products are associated with environmental pollution or health risk.

Organizations are contributing to both environmental cleanliness and preservation of the natural life by showing that they are sensitive to the nature and the natural life with the help of these activities they perform; at the same time they are also striving to leave a habitable environment for future generations by showing a good social responsibility example. The green sponsorship activities in Turkey have increased with the start of spreading rapidly of the green thought especially after 1990s. Today many brands are competing with each other to show (to prove) their sensitiveness in this field to the society, for example, Garanti Bank from the banking sector, which is a branch of service sector; Turkcell among the Turkish Telecommunication companies are the pioneers of green marketing in Turkey and Arçelik and Beko (Koç Holding Corp.) among white-goods industry leaders, Karaca and Mavi from the textile

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sector are the outstanding Turkish brands with their green sponsorship activities.

2.4.6 Green direct marketing

It is an integrated marketing communication component based on the principle of establishing one-to-one contact with current and potential customers with the intent to create instant measurable response or reaction. Direct marketing refers to the marketing activities which are oriented directly to the final consumer without using normal retail outlets and units. It is a marketing method which is implemented in the sale and distribution of products or services and have peculiar rules. The purpose of using this method is to communicate the advertisement message directly to the customer in order to inspire the purchasing action. The e-mail is the most widely used form of direct marketing which also supports the green marketing applications. The use of e-mails in all correspondences is important in terms of compliance with environmental principles and preventing the wastage of paper.

There is a bidirectional communication between the customer and the product/service marketer at direct marketing. There is the opportunity to reply the consumer. Communication can be done in every environment. To measure and monitor it at home, work, school is easy. It is very easy to introduce instantly the green product to the customer and also to receive immediate feedback in this marketing method. The tools used in direct marketing are as follows:

- Electronic shopping
- Tele marketing
- Sales through television
- Fax posts
- Catalogues, brochures
- Mail posts
- SMS, MMS
- E-mail
- Voice message via Internet

For example, a consumer can enter into organic product websites through a short research on the Internet and may place orders from there. Likewise he/she can possess a product with a sale made on television. Consumer can exhibit his/her environmentalist attitude by using

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less energy by using SMS and e-mail, and at the same time he/she can possess the desired product whenever he/she wishes.

2.4.7 Green point of purchase communication

This communication is performed at sales points where products are put for sale by retailers and are purchased by consumers. This kind of communication can be considered as the last opportunity that can be utilized in order to realize the sale just before the consumer decides to purchase. Purchasing point communication comprises the ambience of the store, the music in the store, the scent in the store, the lighting of the store, the color concept, the design of showcases, the design of shelves, diverse exhibitions, stands, posters and streamers made at sales points, electronic tables, various announcements and so on. We can summarize the objects that can be used at green purchasing point communication: preparing inter-store and showcase lighting which form the store atmosphere by using energy-saving lightings; performing inter-store steering with that announcement, magic floors rather than posters, flyers, brochures, presence of boxes directing for recycling at various places of the store, emphasizing that the products present in the store are "green" and so on.

2.4.8 Green social media

Social media networks are occupying a major part of our lives nowadays in which we experience information, communication and technology era. When the definitions in relation to the social media which contains these three cases are analyzed, with the simplest expression, it is seen that it is defined as online communication channels where the participation of the target audience exists, developable, interactive, hosting communities from inside and connecting communities with each other (http://blog.hazinesandigi.com/post/63730376869/sosyal-anneler-icin-sosyal-medya).

In addition to the communication in the social media being from one person to another person, it spreads to from one person to hundreds of people, from hundreds of people to millions of people. There is an information exchange between communal units such as person, group and organization in this kind of the communication which can be included in the social communication class (Sabuncuoğlu and Gümüş, 2008, 9). The social media tools, which are a powerful way for access

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to masses, are important tools for being able to stress the "green." It is a powerful weapon for being able to inform masses, to create awareness, to establish attitude in them. However, in an exact opposite circumstance, launching in social networks the brands away from green production, damaging the nature, contrary to human health and animals' right of life is extremely dangerous for credibility and the existence of those brands in the market. While social media networks feature so powerful weapons nowadays, it is perfectly natural for the nature- and human-friendly brands to promote them by utilizing this weapon.

Today's digital world offers great facilities to enterprises seeking for higher efficiency. Computers and information management systems simplify the source utilization, enable efficiency and facilitate the control of products and production lines. The comparative analysis of consumed raw material, required energy and generated wastes simplify the determination of which the best applications are and find the potential efficiency points. While e-mail and internet mediate the rapid spread of these applications within the institution, they enhance the performance by speeding up the feedback loops. Digital technologies are creating new eco-productivity opportunities behind the factory gates. The internet, which brings together the buyers and sellers online, while reducing the search costs, it spearheads the establishment of markets which would never have been possible previously. The websites, which are focused on waste exchange and constantly increasing in number, are helping the companies to complete their waste substance cycles and to find clients for their industrial by-products (Esty and Winston, 2008, 150).

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3
Green Consumers and Marketing

Abstract: *In this section, green consumer concept, green consideration and institutional social responsibility, the business world in green thought (green marketing practices in the world and Turkey) have been examined with examples.*

Keywords: green consideration; green consumer concept; green consumer psychology; green marketing practices

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3.1 Green consumer concept

Sensitive to the environment is improving rapidly nowadays and sensitivity is felt towards all living creatures. The environment issue has ceased to be the concern of just a certain group and has become one of the agenda topics in Turkey which has been developing fast in socio-economic and sociocultural aspects especially within the past decade. The rise of the education levels and the increase in the awareness of the consumer depending on the increasing level of prosperity is one of the basic reasons for this. Following these, the purchasing behaviors of the consumer have shown apparent changes in recent years. The sensitivity towards the natural environment enhanced throughout the entire world in recent years is reflected in the purchasing behaviors of consumers; meanwhile, the green purchasing behaviors are giving messages about the attitudes of consumers towards enterprises and products.

Today's consumers worry over the destruction of nature, the health of themselves and their families and get into action by purchasing products that are perceived as "green", going healthy starting from the products they select at the shelves of supermarkets to the clothes they buy and to the vehicles they drive, and rejecting those which are not in this manner. The green consumer trend is spreading rapidly, and international brands are taking this into consideration for their marketing and branding strategies. The enterprises which can respond to the demands of consumers with green products and are successful in presenting their environmentalist commitments to consumers obtain competitive advantage in the market.

While in the past the environmentalist sensitivity was manifested only in mass meetings aimed at the enactment of environmental laws and institutional boycotts, after 1990s consumers have shown their concerns in the consumption processes. This new trend called the green consumerism has started to reveal itself as the efforts of individuals towards the protection of the planet and themselves by purchasing only those products that are "green." In this new marketing era, products are evaluated not only through their performances or prices but also according to the social responsibilities of the manufacturers. Now being health-conscious of the product and the package with respect to the environment is also a component adding value to the brand.

Environmental devastation occurs when natural resources are exploited in the production process and the wastes generated are not processed but let to nature without understanding the limited assimilative capacity of the

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environment. Even if the new technologies are developed under the name of "green technology," every company can't possess them due to high costs and carry on their activities with old methods and tools. Being limited of natural resources used for satisfying the limitless needs of human beings entails the harmonization of the environment with the economy.

Consumers are increasingly using the economic game in their hands, that is to say the power of purchasing decisions, in order to effect the change about the environment. Growing number of green consumers are boycotting the products of enterprises that have weak social and environmentalist history; they make their purchasing decisions in favor of the enterprises they see as "responsible in social aspects." This situation creates strategic marketing opportunities for the manufacturers, which can exhibit a strong environmental performance. Being ruled out in the market is inevitable for the companies which don't/can't do this.

Recently, in a study conducted on 1,600 households in England for understanding who the environmentally sensitive consumers are and how they behave, consumers have been clustered according to the frequency of exhibition of behaviors such as purchasing organic products, avoidance of products having harmful contents for the environment, preferring products produced from recycled substances, supporting local manufacture, preferring products with less package, using energy sources economically, adoption of recycling habits. Accordingly, it was found that some individuals turned such habits into a lifestyle, and many consumers occasionally considered these matters and a few never even considered this (Gilg, Barr and Ford, 2005, 481). The consumers who are conscious of the environment can be defined as individuals looking for products which influence the environment at the least. They believe that enterprise activities have a vital role in protecting the environment. At the same time they believe their own consumption activities would create the difference in environmental issues. Green consumers are those who don't prefer the products that are damaging to the environment, have negative impacts on the human health, have animals used in the manufacturing process and at the test stage; such consumers are willing to buy green products albeit their prices are more (Koçak, 2003, 34). Of course all environmentalists are not active or loyal as much as those specified above; some of them advance in the name of followers of green consumers.

Roberts and Straughan concluded in a research which was carried out with 235 students from a university in the United States in 1999 that demographic characteristics were a significant data in the identification

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of green consumers. In this research, it was found that young people were more sensitive to environmental concerns, women were better than men about behaving in compliance with environmentalist movement, income was usually directly in proportion to environmentalist sensitivity, education level was positively correlated with the environmentalist attitude and behaviors and residents of cities were showing more appropriate behaviors to environmentalist concerns compared to residents of provinces. In this case, typical appearance of the environmentalist consumer with respect to marketing applications are young, educated and townswomen with middle and high incomes (Straughan and Roberts, 1999, 567).

Some of the consumers prefer natural/organic products especially while purchasing foods. These are real green consumers. When the other consumers mentioned as less environment-friendly people start to getting know and becoming conscious about this issue in time, their expenditure structure and life style will shape and change accordingly. Starting from this point, consumers of a society can be classified as environmentally friendly and buying "green" products. According to the studies conducted on American consumers by Roper Stach Worldwide, it was determined that there were five segments: TrueBlue Greens, Greenback Greens, Sprouts, Grousers and Basic Browns (Scrum and McCarty, 1995, 71). Ginsberg and Bloom expressed in their studies made in the year 2004 that there were a certain group of consumers who were willing to behave environmentalist more than others in the society, and consumers could be divided into five groups according to their environmental conscious status. These groups are listed in Table 3.1.

TABLE 3.1 *Green consumers*

Green Area	Characteristics
True Blue Greens 9%	They possess strong environmentalist values. They initiate positive change and strive to teach environmentalist values.
Greenback Greens 6%	They are not politically active environmentalist consumers. However, they perform environmentally friendly consumption more frequently than an average consumer.
Sprouts 31%	They theoretically believe in green consumption; however, they practically don't materialize these opinions.
Grousers 19%	They don't have any information on environmental issues. They don't believe to create differences through their behaviors.
Basic Browns 31%	They don't change their behaviors due to environmental or social issues or don't feel sorry for these issues.

Source: Adapted from J. M. Ginsberg-P. N. Bloom (2004) "Choosing the Right Green Marketing Strategy", *MIT Sloan Management Review*, Vol. 46, 79.

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The percentages towards green consumer typologies prepared by Ginsberg and Bloom in the year 2004 have changed certainly in a positive direction nowadays. In markets where green production is a privilege and adds brand value, to be green consumers also has become the necessity of the time and an indication of being a responsible individual.

3.1.1 Green consumer psychology

Green consumer is a person who thinks that the environmental protection matter can't just be left to government, business circles, environmentalists and scientists but bears responsibility. So this person doesn't only think as "let's protect the environment, the environment is important, let's leave a good future" but also demonstrates it practically. Demographic properties have emerged as an important tool in the scientific studies carried out in relation to green consumer appearance. Straughan and Roberts argue that psychographic, namely behavioral and attitudinal, characteristics should be considered as well as demographic properties. Straughan and Roberts identify some significant psychographic conclusions of green consumer behavior as follows.

- Perceived consumer status, what is doing or not doing individually.
- Altruism, worry about other people. To engage in voluntary aids for others despite bringing material or spiritual burden on the person.
- Liberalism, leftist political beliefs.

Consequently, it was found that Liberalism and Altruism play an important role in determining green consumer behavior (Straughan and Roberts, 1999, 574). When Roberts and Straughan examined the behaviors of consumers bearing environmental concern only in terms of demographic variables, gender emerged as an important variable, and it was determined that gender loses its importance when psychographic variables are dealt together with demographic variables. It has been suggested that psychographic variables will be more useful than demographic variables in predicting and determining the environmentally sensitive behaviors in this study. Mostafa has examined the correlation between the gender and green purchasing behavior in the study carried out with Egyptian consumers. According to the study, men have information more than women about environmental issues, bear more environmental worry and in a more positive attitude in terms of green purchasing among Egyptian consumers (Mostafa, 2007, 220). In

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a study conducted in China in the year 2000 Chan and Lau examined whether environmental issue was effective in purchasing behavior and ultimately it has emerged that environmental information was effective on green purchasing behavior. Moreover in the study, it has appeared that China's traditional "human-nature" factor resulting from Teoism was affecting green purchasing behavior albeit partially though it was not sufficient (Chan and Lau, 2000, 338). All these researches have revealed that consumers' demographic properties, genders, educational levels, socioeconomic and sociocultural conditions and psychographic characteristics were effective in green purchasing behavior.

Also, psychographic characteristics play an important role in choosing environmentally friendly products by today's consumers.

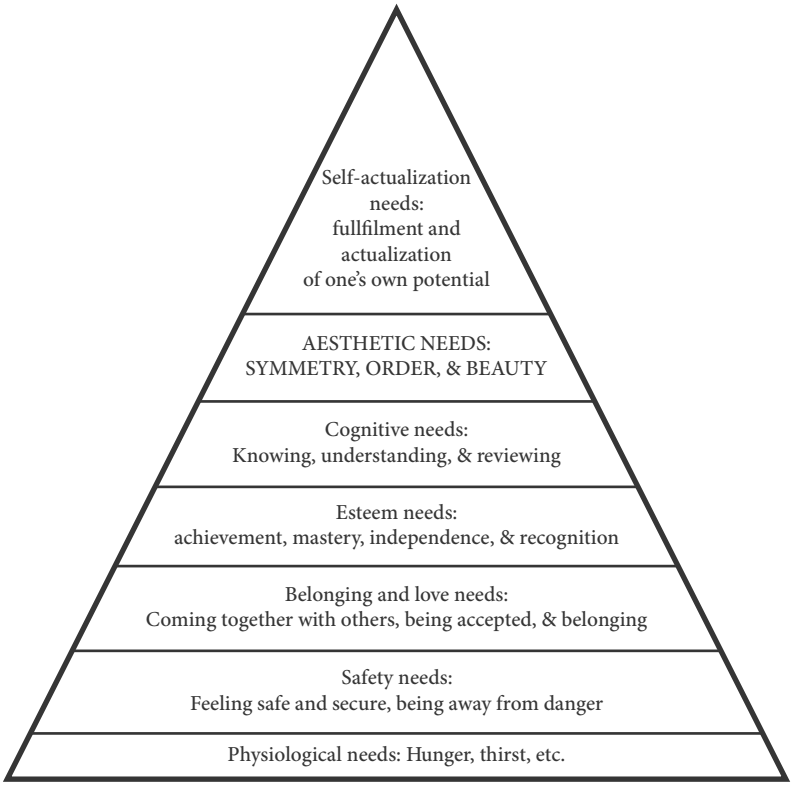

FIGURE 3.1 *Maslow's hierarchy of needs*

Source: Adapted from R. Atkinson and L. Atkinson (1993) *Introduction to Psychology*. Auburn, WA: Thriftbooks, p. 547.

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For the sense of belonging and to be esteemed and be situated in the upper parts of hierarchy steps, it is important for today's consumer to adopt the green wave and be at the "benefit of society and environment." The desire to satisfy these needs enables for the rapid spread of the "green wave" through domino effect in the community. This effect also applies to producer companies. They have to produce green products in order to maintain their existence in the market, to achieve competitive advantage and to raise their brand values by being appreciated.

3.1.2 Purchasing behaviors of the green consumer

There are several variables affecting the purchasing behavior of consumers. Many models have been suggested in an attempt to explain consumer behaviors. The common point of all these models is grouping the variables which affect consumers. These variables are as follows (Odabaşı, 1998, 20):

Interior variables: Psychological effects. They are the essential determinants of behavior. They are composed of subjects such as learning, motivation, perception, personality and attitude.

Exterior variables: Sociocultural determinants. They include subjects such as family, social class, culture, subculture, personal effects.

Demographic variables: Issues like age, income, education, geographic residence fall into this group.

Marketing Efforts: It is the group containing strategies which are implemented by marketers. Integrated marketing communication activities, price strategies, distribution and product specifications form these variables' group.

Situational Effects: Physical environment, time, purchasing reason, emotional and financial status can be shown as an example for these effects.

These variables which influence customers also affect the purchasing behaviors. In recent years rapidly growing environmental sensitivity, sustainable development, sustainable life and worries related to the future all over the world are causing the formation of purchasing behaviors in relation to the environment and the development of green strategies in enterprises.

3.2 Green consideration and institutional social responsibility

Green marketing has arisen from social marketing concept. Social marketing is a marketing approach which doesn't only please the

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customers but also aims to keep in mind the needs and demands of the community. Social marketing concept requests from enterprise marketers to lay stress on social and moral considerations in marketing activities. For example, not to cheat consumer, not to mislead, to avoid wrong/lie phrases related to the product/service, to take into consideration society and human health, to adopt it as the basic principle, to produce without damaging the nature, environment, to protect, to be sensitive about animal rights.

Today, "green thinking"-oriented policies of many successful companies in the sector should not be overlooked. Johnson&Johnson, DuPont, Starbucks and IBM are the biggest institutional green energy buyers, respectively, in America and these companies have the renewable energy certificate. It is noted that the use of environmentally friendly energy resource has reached to 1,000 megawatt in 2010 in the United States. This ratio can be interpreted as "a good level" in terms of the use of limited resource. Meanwhile in Europe British Telecom, Holcim, IKEA and Tetra Pak have united their powers under the formation of "Green Power Market Development Group" for the development of clean energy resources like solar and wind and the use of them in production. BP reported that it reduced the emission by 10% in operations between the years 1998 and 2001. It has also started to implement a five-year program for reducing the emission further, with a value of 350 million dollars in 2004. It is estimated that BP will achieve 1 million tons reduction yearly in the gas emission through the investment made for solar energy. The common goal of these companies is both to put an end to the use of limited resource and to achieve cost savings with new technologies (http://www.capital.com.tr/yesil-sirket-olma-yarisi-haberler/19581.aspx). No doubt institutional reputation underlies the investment made on green thinking by these big brands. They struggle to constitute their images in the form of "producing without damaging the health of society, environment, human, nature" through these investments made on the green strategy. The investments made on institutional social responsibility related to the environment or the society return the companies as brand value and customer loyalty. The "environment" factor shows itself as an important criterion among the purchasing preferences of today's conscious consumers.

Today although environmental problems and societal issues create different difficulties for enterprises, both of them are related to the corporate reputation. A company which achieves good results on

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environmental issue can't compensate its poor performance on societal issues in this way. Because these two issues are intertwined, intricate matters and support each other. Environmental protection is for the benefit of society. For example, a brand, which performs various activities for the protection of the natural environment and has many sponsorship in this area, shouldn't expect the formation of a positive brand image if doesn't act equitably to their own employees in the matters of healthcare, workers' rights, salaries.

As a marketing strategy, companies try to share with the community what they do on environmental issue and societal issue, in which activities they contribute and which of them they organize. While some of them consider the issue economically, environmentally and socially, some describe their business on the basis of corporate social responsibility, management, citizenship or environmental health and safety. All these approaches can create eco-advantage for companies. The key is the implementations. At operational level, management of sustainability issues, regardless of the name given to them by the company, gives the best result if a particular focus has been identified. To think of environmental problems, to rack the brain over health, to struggle against poverty, to reach the bottom of the pyramid (which includes the world's most poorest regions) to eradicate their problems may turn into an effort harassing the person in a short time. Researches revealed that the skills required to manage the environmental and social problems are quite different from each other. The things to be done by a company to comply with the air pollution permits are different from each other. Also, the environmental-related agenda has some weaknesses in the sense of societal dimension. Legal obligations are generally open and clear as far as the opportunities needed to gain competitive advantage by doing right things in the environmental dimension is concerned. It shouldn't be concluded from here that the societal issues are unimportant. Identification of strategies and tools which may be utilized for environmental opportunities should be focused (Esty and Winston, 2008, 30).

3.3 The business world in green thought: green marketing practices in the world and Turkey

Research has demonstrated that companies which have a green outlook are more innovative and entrepreneurial than their competitors. It

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has been observed that such companies are more successful in crisis management, better at managing unexpected circumstances, able to reduce customers' costs through the development of new opportunities and more active in minimizing environmental burdens. These enterprises strive both to increase their revenues and to strengthen customer loyalty by shaping their products/services to meet customers' needs and demands. Today we see these enterprises in the top rankings of "brands with the highest brand value" in statistical studies. In Turkey, the situation is much like it is in the rest of the world. Brands which utilize green thinking, use green technologies and invest in the field, all the while taking care to protect nature, human life and all living beings, are stronger and have greater credibility. Turkey's white appliances giant, Arçelik Corporation (known abroad as Beko), appears to have the highest brand recognition in the sector, and this has been brought about through its pioneering attitude, sensitivity to green manufacturing and the use of green technologies. Accordingly, consumer preference for the company is rather high.

Etsy and Winston (2008, 32) have likened environmental problems to leaks in a water pipe which in turn give rise to the gradual loss of a company's value. Companies which invest in green thinking accrue advantages such as an increase in revenues, a reduction of operating costs and lower interest rates offered by banks, as they are aware that meticulously developed environmental management systems reduce company risks. Therefore, prudent companies reduce their financial and operational risks by taking up green thinking and increase their activities, profits and freedoms through environmental protection strategies.

Green business administration can be defined as focusing on alternatives which will minimize damage to the ecological balance or even eliminate that harm completely, selecting subcontractors and suppliers who share the same mentality, taking green products and services beyond a mere marketing strategy and creating a quality of life that is green. One of the goals of green management is to change harmful attitudes regarding the environment and the people it serves. Within this framework, the green marketing approach aims to reflect ecological facts instead of concealing them and in this way orient efforts towards consolidation of the company image. In this context, enterprises' green responsibility and green ethics have become a driving force in the prevalence of the green concept, particularly for consumers and other elements of society. Consumers' environmental awareness increases to the same extent

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that enterprises attach importance to green products and services. This understanding also necessitates radical changes in the way business is done, from general managers all the way down the employee chain. The most crucial factor behind this change is sustainable development. True sustainable development, which aims to establish a balance between economic development and the ecological environment, meets the needs of today's generations without jeopardizing those of future generations.

In the new marketing approach, many different obligations and liabilities should be applied for being a "green company." Because this kind of applications are awarded by consumers, the number of companies having "green thinking" increase each passing day. Giant corporations like DuPont, The Dow Chemical, Fedex, Procter&Gamble, IBM and Johnson & Johnson are using clean energy to produce the products used by people every day, behaving sensitive about their wastes and producing "naturally friendly" products. In Turkey as it is in the whole world, the enterprises which work to comply with the rule of the game, are striving to be a green company. Yeşim Tekstil saves 1 million dollars yearly through waste water recycling; Banvit daily regains 230 tons organic wastes during production. Tetra Pak saves 5% in energy consumption and 15% in water consumption (http://www.capital.com.tr/yesil-sirket-olma-yarisi-haberler/19581.aspx).

Toyota is one of the companies which have gained competitive advantage by creating the environmentally friendly brand hybrid model Prius operating with fuel and electricity. According to the research of Interbrand, the brand value of Toyota has reached to 28 billion dollars, increasing by 47% with Prius. Fujitsu Siemens has installed three separate "recycling center" in its building and provided the appropriate evaluation of the wastes from the offices here. In addition, employees are encouraged to bring wastes such as paper, battery, plastic in their homes to the company. Thus the company is struggling to include employees in green thinking. Nokia put an end to the toxic production, Dell utilizes former hardware after having them gathered and putting them into reuse.

These rapidly increasing activities of the enterprises related to the environment have shown that one of the most significant factors taken into account by consumers during shopping is the environment. Today, messages related to the environment are available on almost every new product's labels. If it is realized that these messages consider the environment while producers produce the products, it is proof that major steps have been taken for the future. In the progress of time, more

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businesses realize that environment is a strategic issue. However, they don't think, "how can we change our product"; they think, "what can we tell about our product." This understanding has started to disappear slowly with the conscious customers, rapidly increasing environmentalist activists and the government pressure; the number of "true green" enterprises has begun to increase day by day.

Still one of the ongoing problems in the marketing of green products is not using the correct terminology. Enterprises are placing terms such as environmentally friendly, recyclable, decomposable on packages and labels regardless of whether they are correct or not. These confusions have decreased slightly after the Green Marketing Task Force was set up with prosecutors from ten states in 1991 in the United States. The "Task Force" specified that terms such as decomposable, recyclable, environmentally friendly misled the consumers. After the establishment of the Task Force, American Federal Trade Commission created the green regulations for the green marketing. The regulations are the only federal regulation regarding the green marketing so far. The regulations generally include what the recyclable, decomposable, regained substances are. It addresses the use of terms such as environmentally friendly, refillable and ozone-safe. But regulations are not laws. These regulations don't impose definitions and standards for the use of terms in relation to the environment; specify extensive statistical information and the examples which will be deemed deceptive by Federal Trade Commission (FTC). Basically, these are just recommendations and they are put into practice on the basis of the event when there are complaints about enterprises (Greco, 1993, 27).

When we looked at green marketing examples from around the world, we found that Greenpeace has reports titled as Dirty Laundry, Dirty Laundry 2, Hung Out to Dry and Dirty Laundry Reloaded. Briefly, these reports are responsible major clothing brands for a global problem. One of them is water pollution because the fabric used in these clothes is immersed in miscellaneous poisonous chemicals until it becomes a finished product. Some of these chemicals are used to dye the fabric, and some of them are used to make fast the dye. Meanwhile, some of them (surface active substances) are applied during the prewashing of clothes. And some clothes are impregnated with water repellent chemicals in order to prevent the impact of rain water and to gain stain-resistant feature. These chemicals belong to a chemical group known as perfluorinated compounds (PFC). Most of the perfluorinated compounds are hazardous to human health and nature, bioaccumulated and do not

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decompose in nature. In 2001, 125 countries including Turkey have made an agreement in Stockholm to reduce the use of this and similar chemicals. Turkey, pursuant to this international agreement, launched the Persistent Organic Pollutants Project in Turkey in 2004, under the responsibility of General Directorate of Environmental Management affiliated to the Ministry of Environment and Forestry.

Marks & Spencer, which accepted to abide by the "Detox" call of Greenpeace, is planning to purify all poisonous chemicals from clothing products until 2020. And it expressed that perfluorinated compounds would be removed from all products until the year 2016. Marks&Spencer, with this decision, has joined the companies such as Nike, Puma and H&M which make similar promises beforehand. Today, the brands which have joined in the "Detox" program of Green Peace are Adidas, Puma, Nike, Li-Ning, C&A, H&M and Marks&Spencer.

Marks&Spencer is one of the green enterprises of store chains in the United Kingdom. The company has a 100-article plan at an amount of 200 million pounds for five years which was put into practice in the year 2007 within the scope of "green thinking." Under this plan, the enterprise has started to manufacture garments from reprocessed plastic bottles. Today, Marks&Spencer is in collaboration with universities, chemical substance producers, machinery manufacturers and dyeing plants and improving more environmentalist and innovative fabric processing methods. For example, one of the methods applied by M&S is "cold dyeing." Dyeing of the fabric can also be done in cold water thanks to advanced dyer substances. Thereby 30% less carbon dioxide is emitted to the atmosphere and 50% water is saved. (http://www.zehirsizev.com/ev/camasir/marks-spencer-giysileri-zehirsiz-olacak/#sthash.jTRB8zod.dpuf)

Software company GrennDisk gathered diskettes in the former software boxes of the company and had reformatted them. Afterwards it put them on sale by packaging them using low technology. In 1997, 60 million energy and material-protecting diskettes were sold. Thus the manufacture of 60 million new diskettes was performed.

The Heinz Corporation converted squeezable plastic ketchup containers into recyclable format.

Wal-Mart appears to be an environmentally friendly retailer which produces sustainable products, puts wastes into use again and uses renewable energy sources by 100%. Wal-Mart CEO H. Lee Scott has expressed that they have reduced electricity bills by 17% since 2002 through natural

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lighting system used for illumination. Furthermore they have saved 2.4 million dollars on distribution expenses by using less packages for toys (http://www.capital.com.tr/yesil-sirket-olma-yarisi-haberler/19581.aspx).

Estée Lauder corporation maintains its line in the cosmetic sector by preparing their products with natural ingredients, not testing them on animals and packaging in recyclable boxes.

Canon USA has been giving 50 cents for each recycled laser-printer box to the Nature Conservancy environmental organization.

Shell Oil's trial for a new and cleaner fuel type in two different countries is a good example on green marketing issue. Mark Weintraub, Sustainable Development Strategy Director of the Shell, explained that they were using a "sustainable"-development-centered perspective in order to determine the need of the company for cleaner fuel types in Thailand. In this way, a fuel which will burn cleaner, that is, emit less sulfur and other gases to the air, would be of great benefit for cleaning the city's air. For this purpose, Shell mixed the regular diesel fuel with the natural gas after converting it into a zero-sulfur liquid, thus exhibiting a good example of the eco-design. Today, this mixture is on sale under the brand of Pura in Thailand. It is being marketed as a fuel decreasing pollution and prolonging the life of engines (Etsy and Winston, 2008, 174).

Uniliver, which is the manufacturer of the Lipton and PG Tips teabags, is collaborating with Rainforest Alliance to get the compliance of production conditions. Rainforest Alliance, which is a nongovernmental organization engaged in activities such as ecosystem protection, sustainable agriculture, forestry and tourism since 1987, inspected the world's biggest tea producer Lipton primarily for the compliance of its production made in the field of Eastern Africa to the environmental protection principles. Unilever aims to get approval for all tea brands placed on the market worldwide until 2015 (http://www.kurbagayitakipet.com/konu-lipton_rainforest_alliance_isbirligi).

The new Greenpeace product survey explained at Las Vegas Consumer Electronics Show (CES) classified the greenest desktop computers, laptop computers, monitors, cell phones and televisions that will take place on shelves in the first quarter of 2011. Greenpeace invited leading 21 electronics company to the 3rd Green Electronic Survey in June 2010; 18 companies, which participated in the survey, shared their most environmentalist products in 6 categories. The consumer electronics companies were assessed on the basis of the extent to which they progressed in

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their commitments about making their products more environmentally friendly the previous year by ordering the products shared in the survey named as "Green Electronics."

Asus VW-247H-HF computer monitor was the product having the highest score with 7.5 points (out of 10 points). The following products won the leadership respectively in other product categories: Sharp LC-52SE1 television (6.46), Sony Ericson Aspen smart phone (6.21), Samsung GT-S75550 cell phone (7.03), Asus UL30A laptop computer (5.59), Acer TM8172 mini laptop computer (5.08) and HP Compaq 6005 Pro Ultra-slim desktop computer (6.06) (http://www.greenpeace.org/turkey/tr/press/releases/en-yesil-tuketici-elektronigi-secildi/).

Renee Blanchard Greenpeace International Responsible of the Campaign against Toxic said: "The survey which was conducted by us is showing that electronic producers are producing products which are free from the most poisonous chemicals, saving more energy, easy to use and recycle by progressing substantially in last several years. Major brands began to respond [to] the demands of consumers for reaching more environmentalist electronic products and we want from these brands to produce their entire products by developing them according to the highest environmental standards." Greenpeace has been campaigning for eight years to electronic companies to reduce the use of toxic chemicals and to develop their responsible recycling programs. Electronic products may have hazardous impacts on human health and the environment in all processes from the extraction of the material to consumer use and turning it into wastes.

We can clearly observe the impact of the green wave in various sectors if we look at the Turkish market. Businesses now carry on their activities with an environment-friendly policy due to many reasons such as, in particular, the government and consumer pressure. Advantages provided by the banks in Turkey to green businesses prove to be other factors encouraging them to engage in green marketing.

New regulations introduced in recent years due to increasing environmental awareness have also rendered environmental preservation much more effective. The number of fines and obligations increased in line with the amended Environment Law. As these environmental developments occur banks have started to make positive environmental arrangements not to remain outside these trends.

Many banks operating in Turkey have started to provide loans to be used for environmental activities. Still many others have launched efforts focusing on environmental awareness.

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The trend of the industrial organizations moving towards environment-friendly production for the reasons mentioned earlier has been interpreted by private banks within a separate lending segment. Examples of the banks providing loans on and investing in environment are taken from the websites of these banks (http://www.cevreonline.com/cevreci/cevreci bankalar.htm).

Garanti Bank

Environment-friendly Bonus Card: Garanti Bank aims to ensure with its environment-friendly bonus card that urgent precautions are taken for our planet, which has been troubled by global warming, so that we can bequeath a beautiful world to our children and the future. The environment-friendly Bonus Card, which incorporates all kinds of social responsibility aspects, has been able to attract consumers' attention. Advertising campaigns have aimed to underscore this menacing issue as well as introducing the product.

- The environment-friendly Bonus Card enables part of the bonuses it provides to be donated to the nature preservation efforts of the World Wildlife Fund (WWF)-Turkey.
- It puts recycled paper to good use in card delivery letters, envelopes as well as all printed materials used for communicating with consumers.
- It has reduced to the lowest level of the PVC used in raw material ingredients since it shows more resistance to nature conditions compared with other plastics. Thus, it disappears faster in nature compared to other plastic cards.
- It saves paper by sending bank statements via e-mail and in return makes extra donation to the WWF-Turkey.

Garanti Bank was given the Gold Panda award by the WWF-Turkey due to its long-standing support for the preservation of the nature. Garanti Bank has supported the WWF-Turkey's natural environment preservation projects with the slogan "Doğa İçin Garanti" (Garanti for the Nature) for the past 15 years. It undertakes many other projects to create environmental awareness among the public. It also continues to contribute to environmental awareness by supporting many environmental books and publications.

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The majority of environmental loans provided by Garanti Bank offer various financial supports to the nvestments of enterprises. The "Environmental SME Support Package" is offered especially for SME investments to improve energy efficiency in all of their activities. As part of this loan, support is given to investments which aim to provide increased efficiency enterprise activities, achieve efficiency by reducing the amount of energy used in production processes and ensure compliance with current and future legal regulations on heat insulation and waste management. In addition, the Bank intends to support energy saving investments such as jacketing, heat insulation, window-roof insulation, purchase of appliance with A class energy efficiency, renewal of heating/cooling and lighting systems with its "Building Energy Efficiency Loans." Garanti Bank offers three different loan options. These are:

Industrial Energy Efficiency Loan

This loan is provided to support investments for renewal of machineries used in production processes so that energy conservation can be achieved.

Waste Management Loan

Financing support are provided with Waste Management Loan for all waste management investments and expenses.

Environment-Friendly Auto Loan

One can get Green Auto Loan for the financing of hybrid automobiles (automobiles powered by both electricity and petroleum-derived fuel) which achieve fuel efficiency and stand out with their environmental features.

Garanti Bank has announced that it will consider a company to be in default and cancel its loan if that particular company does not take into consideration the environmental effects of its Hydro Power Plant project. Garanti Bank's Deputy General Manager Ebru Dildar Edin, who will insert this clause into the agreement, stated that being creditor of the controversial Ilisu Dam project opposed by environmentalists has been a very teaching lesson for them. Emphasizing that they provided loan to the Treasury of the Republic of Turkey for Ilisu, Ms. Edin said: "However, this project has taught us a lot. Now we consider companies to be in arrears if they ignore the environmental impacts. We are also adding this aspect to the contract."

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Vakıfbank

Vakıfbank offers several options for environment-friendly investments. Environment-Friendly Technology Package helps cutting operating costs by investing in energy-efficient technology products. Environment-friendly car loans, on the contrary, offer lending for vehicles with low fuel consumption and less carbon dioxide release to the atmosphere. Isolation and Efficiency Package provides financial support for achieving energy and water efficiency.

Environment-Friendly SME Loans

Environment-friendly SME loans provide financial support to energy and water-efficient and environmentally sound SME investments. In this context, they offer loans to many environment-friendly products ranging from energy-efficient lighting equipment to heating and cooling systems, to materials achieving efficiency in building insulation.

Environment-Friendly Tourism Loans

Environment-Friendly Tourism Loans provide financial support to energy and water-efficient and environmentally sound investments of businesses operating in the tourism industry. In this context investments in energy-efficient illumination products, energy-efficient heating and cooling systems, water-saving thermostatic products with photocell and timed control features, solar systems and overall energy-efficient technology products are supported.

Renewable Energy Loans

Renewable Energy Loans enable financing investments in self-renewable and environment-friendly alternative energy sources such as solar, wind, hydro, geothermal and biological processes according to company requirements.

İŞBANK

Türkiye İş Bankası launched one of the largest projects in Turkey announcing that it would transform an area the size of 3,000 football fields into forest within next five years. İş Bank declared that with its "81 Forests in 81 Cities" project it will use as of 2013 sources it has so far allocated for Christmas gifts for planting of over 2 million saplings in an approximately 1,500-hectare area. The bank specified that it will use the

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funds it normally allocates for the New Year gifts and special day gifts sent to its customers, business partners and employees to create "new forest" in Turkey's 81 cities.

Şekerbank

EKOkredi – Energy and Labor Focused Loan: Şekerbank offers loans for this purpose based on the fact that 40% of the total electricity consumption in our country takes place in buildings. These investments will help achieving significant amounts of savings in a short period. For example, 50–60% energy conservation is achieved in heating and cooling costs by conducting heat/water insulation on building roofs and external walls.

The bank evaluates eco-loan in three groups which are retail, commercial and agricultural. Individual loan areas are classified as

- Window and roof insulation loans
- Jacketing loans
- Solar energy loans
- Natural gas transition loans
- A class energy consumption loans
- Şekerbank lists eco-commercial loan areas as follows:
- Loan for energy efficiency in buildings
- Renewable energy loans
- Waste management loans

Şekerbank offers its agricultural loan to farmers under the name "loan for modern irrigation equipment." This loan aims to achieve better quality and higher yields with less water consumption.

Akbank

Akbank offers the opportunity to benefit from TURSEFF, Sustainable Energy Financing Loans, for those who want to make environment-friendly investments. TURSEFF is also supported by the European Bank for Reconstruction and Development (EBRD), the World Bank's Clean Technology Fund (CTF) and the European Commission. Akbank provides financing, in this context, to environment-friendly investments with its Energy Friendly Loans. The loan covers renewal of heating, cooling, electric engine and lighting systems of commercial real estates such as businesses and factories as well as new investments and capacity

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expansion by suppliers which are engaged in the production of external insulation for energy efficiency.

TEB

TEB offers Energy Saving Consumer Loans to support environment-friendly investments ensuring that loans are used for billable expenses such as energy saving insulation in buildings and transition to natural gas. Apart from this loan, TEB offers Organic Agriculture Loans and Hybrid Vehicle Loans.

AFD Energy Loan

TEB makes AFD Energy Loan available to businesses, SMEs, firms in the commercial and corporate segment, municipalities and their affiliates calling attention to energy efficiency, renewable energy, energy conservation and carbon emissions as well as encouraging companies to invest in these areas. This loan is used in the form of "Investment Loan" for financing energy efficiency and renewable energy projects.

Denizbank

Denizbank offers Energy Saving Loans both to consumers and SMEs for insulation expenses along with IZODER's technical consultation. The loan covers insulation of the entire roof, building, walls, windows and floors of a building.

Investments are guided by expert practitioners authorized by İZODER. The Turkey Sustainable Energy Financing Facility program signed between the European Reconstruction and Development Bank (EBRD) and Denzibank also provides financing to SMEs and private homeowners desiring to invest in energy efficiency or renewable energy projects.

Development Bank of Turkey

The Development Bank of Turkey offers a World Bank Renewable Energy and Energy Efficiency Loan for private sector investments in energy generation through renewable resources, and this covers the costs of goods, services, construction and related consulting services for energy efficiency investments. Investors can take advantage of this loan provided that their projects conform with stipulated definitions of renewable energy and energy efficiency, Turkish environmental

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legislation and the World Bank's Environmental Policy; in addition, they must have the permits and documentation required in the regulations issued by all relevant institutions (http://www.ekoyapidergisi.org/169-turkiyedeki-cevre-krediler.html).

If we look at examples from the Turkish market, we can see that the firm Tetra Pak has started to manufacture recycled beverage packaging and thereby has made an important investment in environmental awareness. In its products, Tetra Pak uses 75% paper as a raw material, and this is obtained from trees. The company is implementing a variety of techniques in production processes to ensure that its activities can be sustainable. Ferid Ekmekçioğlu, Tetra Pak Turkey's general director of the environment, has stated that the company is attempting to position its entire range of activities, extending from design to recycling, within a "life cycle." The goal is to minimize the potential negative impacts of products on the environment. The globally accepted ISO 14001 environmental management system is being implemented at all of the production facilities of Tetra Pak in Izmir and those outside Turkey as well. The company has also achieved significant savings through projects carried out to eliminate the negative impacts of activities on the environment. For example, while the company's package manufacturing increased by 17% between the years 2002 and 2005, its energy consumption increased only by 1%. In this way, electricity consumption has been reduced by 5% and water consumption by 15%. Ekmekçioğlu summarized the importance of the green strategy they implemented as follows: "With all that, our environmentalist approach brings about a priceless value: corporate reputation for our organization. Our environmentalist products and sustainability policies have contributed to the enhancement of the sector's trust in us" (http://www.capital.com.tr/yesil-sirket-olma-yarisi-haberler/19581.aspx).

White meat producer Banvit among Turkey food sector brands has created a centralized system for efficient utilization of resources, recycling in production processes and protection of the environment. According to this system, the cost of waste utilization center has amounted to 11 million dollars, which processes all organic wastes coming from the production as feed and enables biological treatment. Organic wastes are treated in rendering plants. In this way, they can return 230 tons of organic wastes into production per day after treating them in the plants.

Polinas among the Ulker Group companies which has an important place in plastic industry in Turkey, has taken an important step that will

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prevent environmental pollution by realizing the production of biodegradable plastic package film decomposed in the nature for the first time in Turkey. Packaging films are shattered as soon as they contact with the soil by reacting chemically within durations ranging from four months to two years and mix into ecosystem. And Tire Kutsan's contribution to the environment, which is another company of the group and produces cardboard boxes, is the supplier of its entire products by processing waste papers. With this approach, Tire Kutsan contributes to the protection of natural resources, substantially reducing the waste amounts and the country economy by providing energy savings. Thus, 17 trees are saved through regaining 1 ton used paper; also, 4,000 100 kilowatt/hour energy is saved. This amount is shown to be equivalent to the electrical energy consumed by a family in a year.

Garanti Bank from Turkey Banking Sector is the main sponsor of the WWF-Turkey (Wildlife Conservation Foundation) and supports the efforts towards sustainable development and conservation of the Turkey's nature. The Bank also develops products in line with this goal. Garanti Bank's "Environmentally Sensitive Bonus Card" project is a product that can be given as an example to this. Garanti Bank is also mediating in the realization of the demands of customers who desire to support protection of the environment with this card. PVC is used at the least possible level in the production of this card. Thus the card is enabled to disappear in nature in a short time. Moreover, all printed materials such as envelop, letter and brochures used in the marketing of this card are produced from recycled paper. Sending the bank statements just through e-mail is also another application that enables paper saving.

In insulation industry, Berkosan carried out the first cross-linked polyethylene foam manufacturing with Foamex in Turkey. It contributes to the protection of ecological balance with its environmentally friendly feature. The company, which realized the first domestic production of polyethylene-based products in the sector, has brought many firsts through its product range and advanced technology it uses. Berkosan provides solutions in many areas with its Foamex product from construction industry to automotive, from sports materials to shoe bags and installation insulations and supporting the production of environmentally friendly products.

Polinas Ambalaj, which is the biggest polypropylene film producer in Turkey, developed packaging material which can dissolve in nature. Polinas General Director Bülent Akif Atabay specified that "various

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studies are being conducted all over the world in an attempt to eliminate the harm caused to the environment by packages which don't vanish for hundreds of years after usage." The brands which have developed polypropylene packaging film with biodegradable technology as a result of R&D studies conducted within the enterprise, packages manufactured with the use of the product named as "polygreen" are converted into water, carbon dioxide and biomass after being digested by microorganisms within two years. The brand has been among the pioneers of Turkish packaging industry with this technology. Legislations are being prepared in European Union and United States which will make mandatory of the use of packages manufactured with biodegradable technology.

Yeşim Tekstil is one of the leading textile companies in Turkey engaged in the manufacture of ready-made clothing and home textile. It uses "Öko-Text"-certified products which are not harmful to human health during production. In addition, it sends the wastes to the municipality's sewer system after purifying them in the treatment plant which was built within its organization. Yeşim Tekstil's treatment plant has the capacity of purifying ten tons of water a day and is one of the largest treatment plants in the sector. The company contributes both to the economy and to the environment by collecting its solid wastes separately and sending them to recycling. Yeşim Tekstil has also started to manufacture environmentally friendly fabrics for its customers with yarns obtained from organic cotton, bamboo and soybeans. Nowadays organic production has gained importance also in textile sector; thereby Yeşim produces "environmentally friendly" fabrics by using its knowledge and technology in this direction. These fabrics woven with natural yarns are recycled by 100%. Yeşim Tekstil, which is the production partner of the Nike brand since 2005, has been producing, in addition to Nike, on behalf of the brands such as Gap, Banana Republic, Old Navy, Zara, Pull&Bear, Massimo Dutti, Esprit, Hugo Boss, Lands' End, Tchibo and Schlafgut (http://www.yesim.com/icerik/8/genel-profil/).

The ecologist dishwasher which was produced by Arçelik Corporation among the pioneers of green technology in Turkey affiliated to the Koç group is one of the most beautiful examples of the brand for environmentalist production understanding. While enhancing the cleaning performance of the product in design and improvement activities, priority has been given to the reduction of energy and water consumption figures. It has been intended to contribute to the country economy and the user with the ecologist dishwasher which is capable of performing

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the best wash although using the least energy, consuming the least water and has been designed in compliance with European Community Dishwasher Labeling Rules, the norms prescribed by European white goods producers commission. The Ecologist™ Dishwasher is the only dishwasher having the washing performance at A level by consuming the least water with 9.1 liter consumption.

Various washing forces are used at different stages during the wash. Thus handwash sensitivity and strength is achieved by using washing forces compatible with the properties of the items to be washed. Capable of using the spray pressure 60% higher than existing machines while washing heavily soiled pots and pans, makes the removal of dirt easier. Thus it helps the conservation of natural resources and saves energy, water and detergent consumption.

Ecologist™, which contributes to the environment through low energy and water consumption, is produced by 86% recycled, 13% recoverable materials. Let us look at the environmentalist features of the product:

> *Less Energy Consumption:* It ranks among the A energy class according to the definitions of European Union Energy Label with 1,10 kWh energy consumption. White Goods Industrialists Association specified that there were approximately 4 million dishwashers in Turkey. In this case, if all dishwashers in Turkey would be replaced with Ecologist™, 330 GWh would have been saved. This figure, which corresponds to 80% of the annual power generation of Ankara Sarıyer Dam according to the data of DSI (State Water Administration), will enable 53 million YTL (53 trillion TL) savings.
>
> *Less Water Consumption:* It is the dishwasher which consumes the least water in the world among A-level washing machines with 9 liter water consumption. The water consumption in Turkey will reduce by 5.9 million m3 if all dishwashers in Turkey are replaced by Ecologist™. This figure corresponds to 80% of Bayındır Dam or 10% of Kurtboğazı Dam in Turkey based on the data of DSI (State Water Administration).
>
> *Advanced Sensor Technology Applications:* The quantity of dishes inside the machine is detected and accordingly the water is taken under control. So, unnecessary water consumption is avoided.
>
> *Robust Performance:* Unlike all other dishwashers in the world, its washing performance doesn't decrease with the fall of mains voltage. Even if the mains voltage falls to 150V, the engine speed and washing pressure is not affected because the current and voltage values supplying the circulation engine is regulated with transducers.

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Ecologist™ dishwasher won the award for "Design" and "Innovation" in the "PlusX Award" Contest and "Design" in the "50.Red Dot Design Award" Contest in Germany in 2005. It made it to the finals in the "Technology Award" contest organized by TÜBİTAK-TUSİAD-TTGV in 2005, came in second at product category in the European Environmental Awards contest organized by REC-Turkey in 2006 (http://www.cevreciyiz.com/is_ve_cevre/default.aspx?ContentId=275&SectionId=123).

One of the successful companies which fulfill the individual responsible in the fight against climate change is Yaşar Holding.

3.4 Fight against climate change

Scientists are of the same mind that climate change, which is defined as the biggest problem confronted by humankind, is increasing greenhouse gas emissions because of human activities. According to the data of International Energy Agent (IEA, CO_2 Highlights, 2011), approximately 65% of the world greenhouse gas emissions are caused by energy sector which is using intensely the coal, petroleum and natural gas. Still according to energy projections for 2010 of IEA, the world electricity need in 2035 will increase by ¾ compared to today and the use of fossil fuels will continue to be common. According to the assessments of Intergovernmental Panel on Climate Change, even if greenhouse gas stabilization in the atmosphere is realized today, our world will continue to suffer the impacts of climate change for centuries. Scientists are hinting that irreversible impacts of the climate change will cause the downfall of the world, in case the greenhouse gas concentration continues to rise in this way. According to the scenarios prepared, CO_2 concentration in the atmosphere should be fixed at the levels of 350 ppm (parts per million) for being able to prevent irreversible impacts of the climate change and to keep the average temperature rise at two degrees (IPCC, Fourth Assessment Report, 2007). Indeed, the countries which came together at United Nations Climate Change Conference held in Durban on December 2011 agreed on this issue. The decision to sign an agreement legally binding all developed and developing countries which was taken at a conference in 2015 has given a strong signal also for the business world to switching towards low carbon applications. General Directorates of Meteorology Affairs informed that "Climate Change Scenarios Project for Turkey was completed, 1,5 degree rise in temperatures is expected for the future period of 50–100 year starting from

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2012 in the region." Four–five degree rise will occur at the temperature felt in Mediterranean and Aegean. Turkey's average temperatures have been increasing since 1994. The hottest year was 2010 with a rise of two degrees. While the numbers of summer days, tropical and warm nights and hot days are increasing, there is a decrease in the numbers of chilling days, cold nights and days; also, a rise in minimum temperatures is observed. Relationship is observed between the temperature changes and number of meteorological-related disasters. According to the detailed projections, though significant temperature changes (1.5 degree) are not predicted for the recent period, temperature changes are foreseen as 4–6 degrees according to pessimistic scenario, 2–4 degrees according to optimistic scenario for the period 2071–2099. The business world is becoming prominent more and more as a holistic part of greenhouse gas reduction efforts while adaptation to climate change is continuing at scientific and political levels.

The green practices of Pınar from Yaşar Community and its brands

Pınar, among the brands of Yaşar Holding which is a leading business firm in Turkish Industry, develops its sector, improves its operations and acts while adhering to corporate and ethical values by placing the sustainability at the center of its activities. The company states that its targets are to produce a holistic approach by including social and environmental factors as well as economic factors in all kinds of decision-making processes and operations. Five priority areas of sustainability according to the 2012 Sustainability Report of Yaşar Holding are as follows:

- Fight against energy and climate changes
- Water and waste water
- Used materials and waste
- Health and safety
- Societal contribution

Yaşar Community started carbon footprint calculation studies for the brands standing out in our daily lives primarily based on the principle of "you can not manage those can not be measured" on the basis of corporation. The hot carbon points of these companies were determined which cause mostly carbon footprints and carbon emissions in the study conducted for Pınar Süt, Pınar Et, Pınar Su, YBP, Viking Kagıt, DYO Boya ve DYO Matbaa Mürekkepleri, Altın Yunus, Çamlı Yem Besicilik

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and Desa Enerji. The carbon map, which will emerge as a result of calculations and analyses, will be guiding on carbon-intensive areas which are primarily required to be dealt with in order to reduce greenhouse gas emissions and for abatement efforts. Thereby it is aimed to identify the carbon reduction road map of companies.

Carbon leaders have been identified towards enhancing the possession in greenhouse gas abatement efforts and strengthening the carbon governance at community and corporate levels. Necessary trainings are provided to leaders and their active involvement in the carbon footprint studies are ensured.

According to the data of International Energy Agent (CO_2 Highlights, 2011), electricity and heating are held responsible for 41% of world greenhouse gases. This sector is followed by the industry with a share of 20%, transportation with a share of 23%. Many improvement studies have been carried out so far inside the Yaşar Community and these studies have included renewable and other resources' savings not being limited with energy efficiency. Being cognizant of the studies carried out under Energy Management and Carbon Footprint efforts would contribute to increase the competitiveness and to raise the corporate reputation, entrepreneurs and implementations on this issues have been planned to continue increasing in the next few years. The amount of emission abated with carbon reduction projects occurred with 4.7205 tons CO_2.

Yaşar Holding is among the best and active ones of the market in Turkey with its green distribution strategies. SCM (Supply Chain Management) and APO (Advanced Planner and Optimizer) modules of the ERP (Enterprise Resource Planning) called as SAP have been integrated into logistics processes of intercity and urban transportation procedures of Yaşar Gıda Group companies in 2010. Product transportation has been achieved at minimum kilometers and maximum tonnage by using the most appropriate vehicle type especially in refrigerated deliveries thanks to this project in intercity transportation process.

In addition to this project, the regions to be served by delivery points have been determined through the realization of Ideal Delivery Point practice and each factory has started to serve in a particular region for durable group products. In this way, the distance covered for the distribution of 1 ton product amounted to 26,68 km in 2011 in the intercity land transportation process. Food Group companies carried out product transportation with approximately a total of 787,000 km's less distance

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in all delivery types by achieving 1.29 km savings per ton for product transportation in 2011 compared to the previous year.

It was targeted to ensure the correct vehicle type through urban transportation SAP SCM (Supply Chain Management) which was started to be implemented in 2011, maximum tonnage through minimum km, maximum customer number and the cost optimization through occupancy rate.

Twenty percent saving was possible in electricity consumption in 2011 through replacement of low efficient old engines with high-efficient engines. Transition from fuel oil to natural gas took place in Gebze-Dilovası, Kocaeli enterprise; 16.000 kg product is now obtained instead of 4.500 kg product through the process change and the use of raw material (Slurry). Despite the production increases by 26%, energy consumption per unit production decreased by 0.004 kWh/tons.

A decline of 5.8% was achieved in the consumption of electricity, and 16.1% in natural gas per ton product compared to the previous year as a result of the improvement of production processes in the plant through the projects implemented.

Pınar milk energy saving projects

- Isolation blankets are used for insulation of hot surfaces over the steam boilers in Pınar Izmir factory.
- Electricity energy savings is achieved by 12% as a result of switching to glicolated cooling systems in Eskisehir factory.
- Energy savings by 15% is achieved through the economizer applications in steam boilers and combustion system improvements in burners.
- Oxygen and carbon monoxide rates from flue gases are monitored instantaneously and are recorded. In this way, further energy is obtained from the unit fuel by keeping high the combustion efficiency.
- Inverter applications are performed in electrical engines in Pınar Milk Eskisehir plant and current electrical engines are replaced with high-efficient IE3 class engines.
- The investments are continued for packaging machines utilizing new generation technologies with higher energy efficiency in new production line investments.
- Valve jacket is applied for insulation of steam valve and equipments.

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- Frequency converter is applied to the steam boiler fan engines.
- Modernization of central cooling system and high-efficient engine classes and alternative cooling technologies containing hydrofluorocarbon (HFC) which is less harmful to the ozone layer are preferred in cold chambers.
- Armatures and lamps consuming less energy are used in lighting systems.
- Use of suitable measurement devices is enabled with the intension to be measurable of the steam, water and electricity consumptions of the units within the scope of the study monitoring the energy consumptions across the facility.

Turkey Ecological Footprint Report, announced on 6 March 2012, was evaluating the sustainable life conditions of Turkey, by identifying the resource capacity and potential usage. The report also highlighted that the carbon emission took the lead of the reasons causing the ecological limit excess in Turkey. It was clearly seen that to maintain the growth of country as carbon intensive meant that it couldn't be lived within national biological capacity limits.

The report showed one more time that Yaşar Community is on the right track. The purpose of the community, which launched the institutional carbon footprint calculation studies in its ten companies at the same time, is to address the matter with a holistic approach by using the same methodology. The community, which enhanced the awareness level starting from the individual level by constituting carbon teams and raising carbon leaders in the companies and made the carbon subject as a part of business processes, has exhibited an exemplary work.

The company is aware that to think and do business on the axis of sustainability and to communicate with stakeholders on this axis is a matter of fact which will take Yaşar Community to further points. Because, sustainability will be accompanied by invaluable conclusions such as improving tighter ties with consumers, customers and investors as well as the tangible results such as reduction of operational costs and performing more efficient productions.

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4

Automotive Sub-Industry in Turkey

Abstract: *Today, the automotive industry and its sub-industries are one of the leading sectors in Turkish manufacturing. In this section the main automotive industry in Turkey, companies in the sector, foreign capital partnerships in Turkey, automotive sub-industry export and import have been analyzed.*

Keywords: automotive industry; automotive sub-industries; automotive sub-industry export; automotive sub-industry import; SWOT Analysis for automotive sub-industries

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4.1 Automotive main industry in Turkey

Today, the auto industry and its sub-industries are one of the leading sectors in Turkish manufacturing, and they also constitute the infrastructure of the defense and shipbuilding industries. Today, Turkey is the largest light commercial vehicle manufacturer and second largest bus manufacturer in Europe.

In Turkey, automotive main and sub-industry exports comprised 15.8% of total exports in 2010 and 15.6% of total exports in 2011. The automotive sector also ranked first in 2011 with regard to exports. Automotive main and sub-industry makes up approximately 5% of the total manufacturing industry. It is estimated that approximately 250,000 people are employed in the sector, 47,000 of whom work in the automotive main industry and 203,000 work in the sub-industry. This figure goes up to 400,000 when we include employees working in distribution, marketing and sales networks (http://www.osd.org.tr/yeni/wp-content/uploads/2014/03/2013-KPMG-Turkiye-Otomotiv-Y%C3%B6netcileri-Ara%C5%9Ft%C4%B1rmas%C4%B1-.pdf).

The industrial production of vehicles started in the mid-1950s in Turkey, and it accelerated in the mid-1960s. After manufacturing some prototype vehicles in the 1950s, the first assembly line was established in 1954 to supply jeeps and pickup trucks to the army (Turkish Willys Overland Limited). The first commercial truck production was carried out by TOE (Turkish Automotive Industry) in 1955. In 1963, the first domestic bus assembly began with the production of Magirus buses by Otobüs Karoseri, Inc. In 1966, the automotive industry got started with the production of Anadol, which is now a nostalgic car in Turkey. In the following three years, factories were set up to manufacture passenger cars (Tofaş-Fiat, Oyak-Renault). The large producers Tofaş and Oyak-Renault started production lines in 1971 with Italian and French licenses. In 1968, Otomarsan-Otobüs Karoseri ve Motorlu Araçlar, Inc. started producing 0302-series buses. Trucks, the unique designs of which were developed in Turkey, continued to be exported to Spain, Portugal and England in 1999. And in recent years, Japanese and South Korean car manufacturers have initiated joint ventures in Turkey. Major Turkish automotive manufacturers are advancing to become world leaders for Western automotive manufacturers through production carried out under license.

Today, 13 companies are involved in producing a variety of vehicles such as passenger cars, buses, trucks, pickup trucks, vans and midibuses.

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The capacity of aforementioned 13 companies is approximately 1,5 million pieces per year. There are five companies which are producing passenger cars (Renault, Tofaş [Fiat], Toyota, Hyundai, Honda). Ten companies are producing trucks and pickup trucks (Anadolu Isuzu, BMC, [Chrysler], Hyundai Karsan M.A.N., Mercedes-Benz, Ford Otosan, Otokar, Temsa). Nine companies are manufacturing buses and vans (Isuzu, BMC, Karsan, Mercedes-Benz, Hyundai, Otokar, Ford Otosan, Temsa, M.A.N.).

Main and sub-industrial enterprises present in the sector are generally located in Marmara Region. Because of the presence of two large automobile factories and two "Organized Industrial Zone" in Bursa, automotive industry has intensified particularly in this province. Among these automotive industrial producers. three are in Kocaeli, three are in Bursa, two are in Sakarya and one each is in Istanbul, Izmir, Ankara and Eskisehir. Bus production and sub-industry units are present in Adana.

Current engine vehicle production capacity of Turkish Automotive Industry is 1,638,000 pieces per year for 2012. Total established production capacity of light vehicles (automobile, pickup truck and van) is 1,502,950 pieces per year for 2012. Total established production capacity of trucks is 62,200 pieces per year for 2012. Five companies are producing buses. These companies' total established production capacities are 11,100 pieces per year for the year 2012.

Total installed capacity of midibuses is 6,750 pieces per year for 2012. There are five companies engaged in the production of tractors. Three major private sector companies (TUMOSAN) possess the leading status in Turkish agriculture tractors market. Total installed capacity of tractor companies is 55,000 pieces for the year 2012.

The financial crisis that started in the United States in the last quarter of 2008 has gained a global attribute by spreading rapidly and caused shortage of demands in many markets. Turkish automotive industry also has been affected by this crisis, with its production for 2008 realized at a level of 1,171 million pieces. Vehicle production was 884,000 units due to the export cancellations and domestic market shrinkage in 2009. The biggest decline in production has been experienced in commercial vehicle market.

However, total production rose to 1,095 pieces with an increase of 26% in 2010, and the automobile production was 603,000 with an increase of 18%. The increase in production had continued in 2011 as well, and the total production was realized as 1,189,131 pieces with an increase of 9% in 2011; and automobile production was 639,734 pieces with an increase of 6%. Depending on the rise in export and domestic market,

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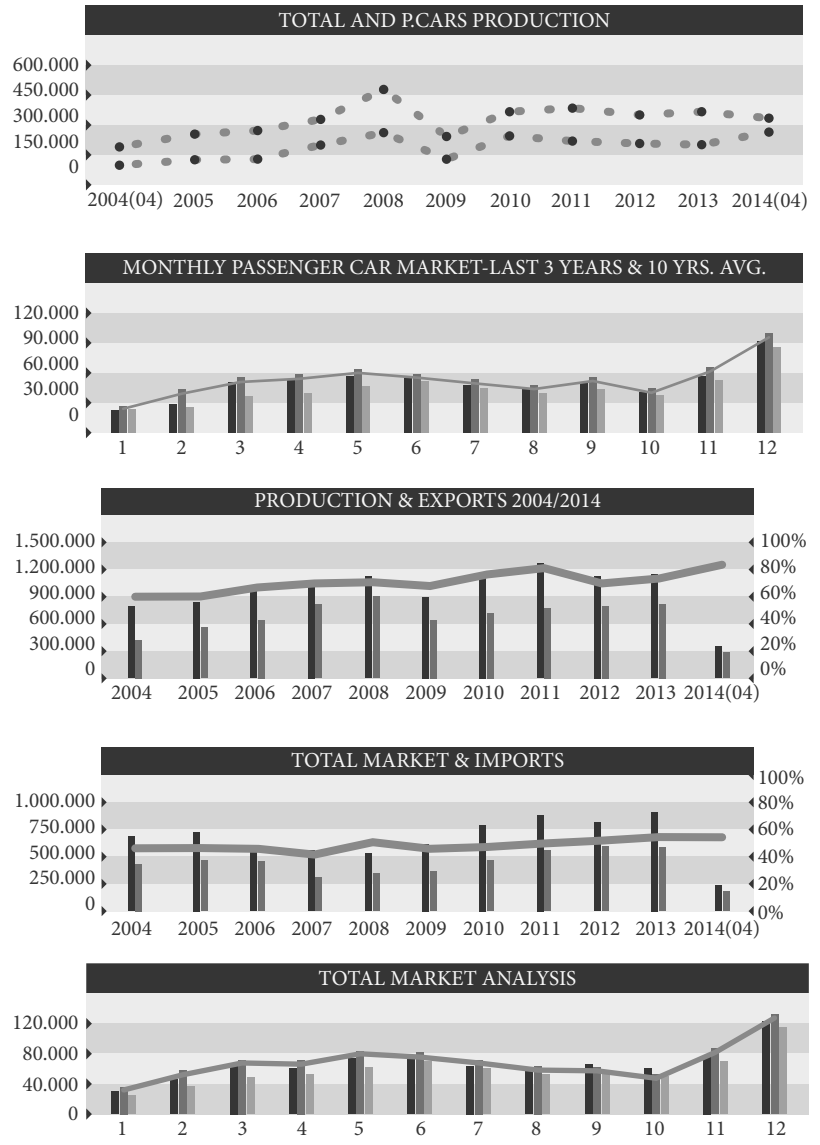

FIGURE 4.1 *Overview of automotive industry in Turkey with numbers*

Source: Adapted from "Turkey Automotive Industry", http://www.osd.org.tr/, Accessed on 08.05.2014.

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the production in 2011 increased by 39% for small trucks, by 60% for big trucks, by 32% for vans and midibuses, by 31% for buses and by 8% for pickup trucks. Meanwhile the production of tractors was 45,506 pieces with an increasing rate of 50%.

Oyak-Renault is the company which is producing the most vehicles in Turkey, with 330,994 vehicle production in 2011. The second largest vehicle producer Tofas produced 307,788 vehicles in 2011. And the third largest vehicle producer Ford Otosan produced 295,850 vehicles in 2011. In Turkey, the total engine vehicles park reached to 16,090 million units including 8.1 million pieces passenger cars in 2011.

4.2 Automotive sub-industry in Turkey

Although all parts were produced within the main industrial producer companies in the 1960s, the sub-industry was of importance too, and effectiveness in the sector emerged upon the advance of investments in the sub-industry and the increase in capacities. Turkey auto sub-industry has been taken under protection literally with the Assembly Industry Instruction enacted in 1964. Progressive strengthening and development of our sub-industry has been ensured with the obligation for increasing the domestic percentage in main industry. The sub-industry, which has been established and developed with the technical and economical support of the main producers, is demonstrating a significant potential in its field today. The density of EU companies is even more in sub-industry. There are nearly 200 foreign companies operating in the sub-industry by establishing joint investment and license.

Automotive sub-industry in Turkey has quickly progressed as a result of developments in automotive industry. Turkish automotive sub-industry is supplying parts to automotive industry and 16.1 million units Turkey vehicles park with high capacity, wide product range and high standards. Moreover, it is a sector with high export potential.

4.3 Current status of automotive sub-industry in Turkey

The companies operating in Turkish automotive main industry is working directly with 1,120 auto sub-industry companies, and 4000 sub-industry companies are available in Turkey. Automotive sub-industry has

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reached a level that can meet at least 85% of the spare parts required for vehicles produced in our country, in respect of product manufacturing capacity, product variety and standards achieved. These parts are:

- Complete engine and engine parts
- Powertrain
- Brake systems and components
- Hydraulic and pneumatic components
- Suspension parts
- Safety equipments
- Rubber and tire parts
- Chassis X and parts
- Hammering and casting parts
- Electrical equipments and lighting systems
- Batteries
- Auto glasses
- Seats

Turkish automotive main and sub-industry has intensified mainly in Bursa and in Marmara regions. Establishment of two "Organized Industrial Zone" and the presence of two major automobile factories in Bursa have led the intensification of automotive industry especially in this province. Other provinces where the industry is intense are İstanbul, İzmir, Kocaeli, Ankara, Konya, Adana and Manisa.

In Turkey, 59 among 291 members of TAYSAD (Association of Automotive Parts and Components Manufacturers) which are doing business in a disorganized manner in various places of Turkey and producing parts for automotive industry created a joint venture group for problem solving and have founded TOSB (TAYSAD Organized Industrial Zone). TOSB holds the distinction of being the most important centers selected for investments to be realized in Turkey by all companies with domestic and foreign capitals producing parts for the automotive industry. In the zone, 56 members are still engaged in production activities and employ 8,900 people.

Auto sub-industry sector attracts foreign investors on account of knowledge in the sector, experience, wide range of products, high export potential and geographical advantages of Turkey. At present, there are 200 foreign capital partnerships in automotive sub-industry. Many of the world's major companies have made joint investments with Turkish companies.

Auto sub-industry is striving intensely for quality certifications. Nearly half of the TAYSAD members have ISO 9000 series quality certificates.

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Turkish auto sub-industry manufacturers have become the pioneers of Turkish firms in European Quality Award. Car tire manufacturer BRISA has become the first Turkish company rewarded with the European Quality Award in 1996. BEKSA later has received the European Quality Award in the category of SME (Small and Medium Enterprise) in 1997. BEKSA, which was founded in 1987, is producing hose wires for high pressure hoses and steel belts used in tires. In 2003, Bosch San. ve Tic. Inc. Bursa factory belonging to Bosch Group, which is the world's second largest automotive systems manufacturer, has won the European Quality Great Award, which is one of the most prestigious awards in the field of world's corporate excellence. Bosch San. ve. Tic. Inc. produces injector, injector body and injector for rail systems. Bosch Bursa factory is the only Turkish company that has received the same award for the second time in 2008.

4.4 Companies in the sector

Although more than 1,000 companies are carrying out trade activities in the automotive sub-industry, the number of companies which have acceptable manufacturing standards, produce original parts directly for vehicle production industry, export under competition in international markets is around 300–350. And other companies comprise small scaled production facilities, and the vast majority is producing usually for replacement market. The companies having commercial activities in automotive sub-industry are generally centered in Istanbul, Bursa and Izmir, and when considered on a regional basis, it is found that 75% of the companies is in Marmara, 13% is in Aegean and 7% is in Central Anatolia and 5% is in other regions.

4.5 Technological level of the sector

Automotive sub-industry is one of the industry branches with the fastest development in technology. This sector must invest continuously in an attempt to follow rapid change process in world markets and maintain competition level. Although the sector is required to make investment up to 10% of the total turnover ideally, this rate can't exceed even 5% due to the reasons such as macro economy, global competition, small production scales and high costs.

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Turkey is the only country which has established an advanced level automotive industry in its geography. Therefore, automotive sub-industry is of strategic importance in terms of both Turkey and the companies that will invest in Turkey. Another importance of the automotive sub-industry is building a reliable and indispensable infrastructure for an independent defense industry.

Automotive sub-industry has reached an advanced level technologically also with the contribution of export-intended vehicles that started to be manufactured in our country and has achieved the level which will produce for OEM companies operating in developed Western countries, in international inspections. Realization of 69% of sector exports towards EU countries is an indication for the technological level reached; 30% of the companies having commercial activity in automotive sub-industry have quality certificates (ISO 9000, QS 9000, ISO 14000, etc.) recognized in international markets. And the rate for companies having treatment facility is 7%.

Currently, there are 192 foreign capital partnerships in the automotive sub-industry. The investment of foreign capitals is a proof to the technologies it can boast of and provides added value to the intellectual capital of the companies. The main foreign capital partnerships in Turkey are listed in Table 4.1.

Technology investments are continuing in automotive sub-industry in spite of the adverse conditions experienced in the economy. This sector constitutes the basis of the technological development in Turkey with its structure. Sub-industry companies are making more investment in technology, human resources, knowledge and quality education in parallel to the main industrialists due to their increasing design, project and improvement liabilities and the licenses obtained. Some sections of the companies operating in automotive sub-industry have taken part as

TABLE 4.1 *Foreign capital partnerships in Turkey*

Autoliv	AE Goetze	Lear Corporation
Delphi	Yazaki	Denso
Grammer	Lucas	Takashimaya N. Kagyo Sango
Magneti Marelli	Hayes Lemmerz	Hp Chemie Pelzer
Mannesmann Sachs	Monroe	Iron Works
Robert Bosch	Exide Europe	Valeo

Source: Adapted from "Turkey Automotive Main and Sub-Industry", http://www.ibp.gov.tr/pg/sektorpdf/sanayi/otoyansanayi.pdf, Accessed on: 9.05.2014.

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"co-designer" in world vehicles produced in Turkey. These companies have attained the chance that can become "co-designer" also for the global production of the main industry corporations. Sub-industry's "know-how" has reached a significant stage by dint of knowledge and experience based on long years. Turkish companies will become license sellers in the near future.

4.6 The place of the sector within Turkish economy

The production capacity of the automotive sub-industry is at a level that can create approximately 9 billion USD production value yearly on condition that vehicle manufacturing sector works with 80% capacity using 60% domestic parts in vehicles produced in Turkey. In this case, automotive sub-industry has 450 million USD investment potential, 3 billion USD export revenue, 5.4 billion USD added value annually (http://www.tubitak.gov.tr/tubitak_content_files/vizyon2023/mm/Ek6a.pdf).

Automotive sub-industry directly employs a total of 150,000 people, and indirectly employs nearly 750,000 people. This sector employs largely technical personnel due to its production based on software. Thus, it contributes to the progress of the technical culture level of the country. On the contrary, it causes the pervasion of technical culture throughout the society thanks to its feature for creating small businesses.

Automotive sub-industry is in the buyer position for many sectors, which are summarized here:

- Agriculture
- Manufacturing industry (iron, steel, copper, aluminum, glass, paint, textiles, etc.)
- Mining
- Tourism
- Transportation
- Construction
- Defense
- Services (banking, insurance, etc.)

Therefore, the production increase of automotive sub-industry leads to the increase not only in production, but also in employment and

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added values for other sectors by creating large demands with multiplier effects.

The automotive supply industry export volume that reached 2 billion dollars in 2002 included some materials like cable, glass, automotive textile which were subject to special customs tariff and directly exported on the exportation vehicles. It is estimated that automotive sub-industry total exports will exceed 3 billion dollars in case these products are added.

Foreign market number also rises when the automotive sub-industry export increases. Foreign markets export has exceeded 150,69%; the automotive sub-industry exports is for EU (European Union) countries, and European Countries' share in the total exports is 73%. This situation is an important indication of the technology and competitiveness achieved by the automotive sub-industry.

Automotive sub-industry export and technology are used in assembling with specific methods and compatibility with each other. Iron and steel, light metals, plastic and rubber, paint and similar chemical substances with glass are used in the production of these parts. The majority of these parts is produced in the sub-industry, and the main industry produces vehicles by combining them through assembly processes.

For this reason, motor vehicles manufacturing industry is directly associated especially with iron and steel industry, and the industry with producing raw materials like light metals, plastic, rubber and glass. New materials and techniques required because of the changing product technologies with each passing day following intense competition in the market necessitates the establishment of very close collaboration between vehicles industry and raw material industry.

Automotive sub-industry has been in a close integration with world automotive industry since the initial years of establishment. The production cooperation started with "Technical Cooperation" by obtaining license in 1970s has turned into "Economical Cooperation" with the foreign capital participation, which has grown increasingly after the mid-1980s.

By 1990, all kinds of motor vehicles manufactured in Turkey have also ensured the development of automotive sub-industry. Technology replacement and R&D studies for competition have gained great

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speed from 1990s, and in turn the capacity increase. In these years modern production techniques had been implemented with intense training programs, and the companies had been certified by international organizations particularly by setting up quality management systems.

All parts except some products had been produced with investments suitable to that day's technology until 1990s in Turkey automotive sub-industry; domestic contribution rate exceeded 90% for millions of vehicles produced; and Turkey automotive sub-industry has successfully completed its import substitution task in this way.

When Turkey's automotive sub-industry export is compared with the world's export, it was a small scale until 1993. However, in the past ten years, the sector has increased the export potential with great efforts. The success in the integration of Turkey's production with international industry and trade is a remarkable development with respect to the exports to become stable. Now many companies are taking part as common designers for international vehicles produced in Turkey.

The sub-industry has continued its development maintained until today by increasing its exports both directly to the manufacturers at abroad and to replacement market. It is predicted that sub-industry's exports towards EU market will further advance.

While Turkey's automotive sub-industry export was 896 million dollars in 1997, it reached 7 billion dollars in 2008. This sector stood at 5 billion dollars by decreasing 30% compared to the same time the previous year in 2009 because of global crisis. In 2010 this prosperous sector has raised exports to 6.5 billion dollars. The aforementioned rise also continued in 2011, and reached 8.3 billion dollars by increasing 26.4% compared to the previous year. The major parts exported are motor components and parts, tires and inner tubes, assembly bodywork components, wheel rims, rubber parts, transmission shaft, brakes and servo brakes. Actually, Turkey is currently exporting many automobiles, buses and trucks in pieces.

The leading provinces in automotive sub-industry exports are respectively Bursa, Istanbul, Kocaeli and Izmir. Automotive sub-industry products are exported to many countries in the world. Main export markets are Germany, France, Italy, England, Romania, Iran, Russia Federation, Spain, Belgium, United States and Poland. In 2011, approximately 70%

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TABLE 4.2 *Automotive sub-industry exports (US$1,000)*

Products	2009	2010	2011
Engine Parts and Components	858,885	1,103,525	1,413,449
Inner Tubes and Tires	825,321	997,204	1,382,799
Assembly Bodywork Components	496,581	563,485	691,482
Wheel Rim and Wheel Components	279,586	458,176	632,329
Rubber Parts for Engine Vehicles	323,560	413,980	495,110
Diesel-Semidiesel Engines	166,351	270,456	240,092
Transmission Shaft, Bearing, Boot	151,370	213,190	273,997
Brakes and Servo Brakes	130,035	187,548	244,573
Accumulator and Components Parts	147,601	185,099	227,564
Clutch and Components Parts	119,029	153,561	166,723
Headlamps and Signaling Devices	92,169	116,320	142,017
Dampers	77,173	114,950	131,636
Furniture for Sitting in Engine Vehicles	72,013	113,989	143,119
Seat Belts	57,016	94,898	103,834
Filters	70,047	87,310	103,849
Ball Bearings	64,545	85,490	116,062
Axles	48,064	73,120	108,707
Auto Glasses	54,497	68,294	78,248
Airbags	53,306	64,527	74,025
Inner Combustion Engines	34,201	51,102	54,461
Radiators	42,166	49,462	53,013
Ignition Apparatus	34,726	49,029	86,970
Gear Boxes	25,992	43,745	56,155
Bodyworks for Load Vehicles	39,240	42,306	52,958
Exhausts, Mufflers and Exhaust Pipes	33,332	41,571	60,276
Bumpers and Parts	29,175	39,327	39,194
Steering Wheel, Flaps, Boxes	23,907	37,432	62,142
Fuel, Oil, Cooling Pumps of Engines	14,702	22,083	26,384
Air Conditioners	10,110	18,436	20,354
Metal Layered Gaskets, Gasket Set and Groups	13,496	17,873	21,746
Rearview Mirrors	8,318	10,346	13,800
Brake Linings (Excluding Those in 8708.30 GTIP)	2,354	3,766	4,866
Engine Chassis for Land Vehicles	294	493	385
Clocks for Instrument Panels of Engine Vehicles	194	156	184
Other Components and Parts	581,909	750,915	947,034
Total	**4,981,266**	**6,543,163**	**8,269,539**

Source: Adapted from T.C. Ministry of Economy Information System.

of automotive sub-industry exports were made to EU countries including primarily Germany, Italy, French and England. Turkish companies are supplying parts to many Western producers such as OPEL, VW, FORD, GM.

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TABLE 4.3 *First 20 countries in respect of automotive sub-industry exports (US$1,000)*

Country	2009	2010	Country	2010	2011
Germany	1,080,256	1,460,994	Germany	1,460,994	2,113,422
Romania	339,373	531,350	France	528,526	616,844
France	474,101	528,526	England	471,319	561,277
Italy	385,775	472,028	Italy	472,028	558,915
England	334,172	471,319	Romania	531,350	543,474
Iran	193,453	235,811	Iran	235,811	316,688
United States	94,648	212,526	Spain	208,833	256,562
Spain	160,637	208,833	United States	212,526	254,222
Russian Federation	89,711	198,477	Belgium	164,873	217,992
Belgium	143,333	164,873	Russian Federation	198,477	215,642
Poland	151,661	158,610	Poland	158,610	184,532
Egypt	74,370	100,138	Brazil	96,997	154,618
Brazil	72,070	96,997	Holland	91,359	132,090
Holland	59,037	91,359	Iraq	90,014	115,219
Iraq	71,089	90,014	Czech Republic	66,566	93,036
Austria	56,673	66,592	Austria	66,592	90,266
Czech Republic	43,573	66,566	Egypt	100,138	88,793
Algeria	54,497	60,640	Argentina	52,446	82,275
Saudi Arabia	43,517	56,735	Saudi Arabia	56,735	79,199
Argentina	27,064	52,446	India	43,513	76,172
Others	1,031,886	1,218,319	Others	1,235,446	1,518,291
ToW	**4,981,265**	**6,543,163**	**Total**	**6,543,163**	**8,269,539**

Source: Adapted from T.C. Ministry of Economy Information System.

4.7 Automotive sub-industry import

Turkey's automotive sub-industry has been realized as 8.1 billion dollars in 2009, 10.5 billion dollars in 2010 and 12.7 billion dollars in 2011. The major parts imported are diesel and semidiesel engines, gear boxes, inner-outer tires, assembly bodywork components, engine components and parts and axles and transmission components. Many parts of new models are imported. The principal countries from which Turkey imports are France, Germany, Italy, England, Poland and Japan.

4.8 SWOT analysis for the sector

SWOT analysis for the sector has been evaluated as follows according to the 2023 vision report prepared by TUBİTAK (The Scientific and

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TABLE 4.4 *Automotive sub-industry imports (US$1,000)*

Products	2009	2010	2011
Diesel-Semidiesel Engines	1,519,465	2,088,210	2,662,027
Gear Boxes	587,830	862,304	1,092,582
Inner Tubes and Tires	478,122	654,076	881,189
Assembly Bodywork Components	824,992	846,424	808,090
Other Components and Parts	430,784	651,266	801,797
Engine Components and Parts	543,483	653,297	784,521
Axles	239,363	424,570	624,582
Transmission Shaft, Bearing, Boot	452,766	532,453	618,570
Brake and Servo Brakes	389,732	505,452	64,597
Inner Combustion Engines	424,754	434,508	451,884
Ball Bearings	245,756	347,275	420,872
Steering Wheels, Flaps, Boxes	204,049	245,803	285,464
Accumulators and Components Parts	140,116	187,421	275,231
Ignition Apparatus	157,887	201,164	247,677
Headlamps and Signaling Devices	166,426	226,327	246,024
Fuel, Oil, Cooling Pumps of Engines	119,230	188,329	216,326
Filters	151,765	177,898	200,262
Clutch and Components Parts	114,209	162,642	194,069
Dampers	103,100	144,345	180,018
Airbags	137,102	157,319	170,776
Wheel Rims and Wheel Components	106,394	134,137	156,874
Rubber Parts for Engine Vehicles	102,143	128,839	156,805
Radiators	117,476	137,366	154,427
Exhausts, Mufflers and Exhaust Pipes	51,295	58,320	77,642
Bumpers and Parts	55,372	56,983	71,791
Metal Layered Gaskets, Gasket Set and Groups	41,282	65,998	70,662
Auto Glasses	36,062	48,368	51,859
Seat Belts	43,143	46,139	47,559
Rearview Mirrors	25,959	36,164	41,903
Brake Linings (Excluding Those in 8708.30 GTIP)	22,931	26,801	34,135
Bodyworks for Land Vehicles	12,684	4,530	24,472
Air Conditioners	4,060	9,891	19,596
Furniture for Sitting in Engine Vehicles	11,078	14,604	17,930
Clocks for Instrument Panels of Engine Vehicles	255	6,024	6,062
Engine Chassis for Land Vehicles	234	841	1,967
Total	**8,061,316**	**10,466,103**	**12,660,258**

Source: Adapted from T.C. Ministry of Economy Information System.

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TABLE 4.5 *First 20 countries in respect of automotive sub-industry imports (US$1,000)*

Country	2009	2010	Country	2010	2011
Germany	1,431,582	1,987,230	Germany	1,987,230	2,689,332
France	1,695,231	1,735,285	France	1,735,285	1,711,566
Italy	730,673	1,004,993	England	956,118	1,179,028
England	717,003	956,118	Italy	1,004,993	1,159,386
China	391,479	621,070	Poland	574,834	813,449
Japan	445,732	613,465	China	621,070	810,143
Poland	462,793	574,834	Japan	613,465	703,081
Spain	427,401	537,264	Spain	537,264	623,786
South Korea	286,541	480,264	South Korea	480,264	547,994
Czech Republic	345,414	358,575	Czech Republic	358,575	445,300
United States	213,342	242,056	United States	242,056	296,349
India	67,689	219,732	India	219,732	287,165
Romania	132,073	217,878	Romania	217,878	262,705
Hungary	62,123	86,681	Hungary	86,681	100,828
Taiwan	51,012	70,702	Slovakia	61,243	89,815
Sweden	52,261	63,201	Taiwan	70,702	87,750
Slovakia	38,273	61,243	Sweden	63,201	84,639
Holland	42,080	50,666	Finland	37,628	74,884
Thailand	31,832	47,955	Brazil	43,765	56,949
Brazil	33,378	43,765	Holland	50,666	56,635
Other	403,394	493,115	Other	503,443	579,465
ToW	**8,061,316**	**10,466,103**	**Total**	**10,466,103**	**12,660,258**

Source: Adapted from T.C. Ministry of Economy Information System.

Technological Research Council of Turkey) for Turkey's sector (www.tubitak.gov.tr/tubitak_content_files/vizyon2023/mm/Ek6a.pdf).

4.8.1 Strengths of automotive sub-industry

- Constantly increasing exports.
- Technical and commercial competence.
- Having the sub-industry's "know-how", which reached a significant stage by dint of knowledge and experience based on long years.
- Ability to adapt to globalization process.
- Capability to adapt to changes in the conjuncture and changing world standards, to produce parts for products with small quantities, to be flexible in production and delivery.
- The increase in the number of investments in Turkey and companies which have achieved successes in the globalization process during past five years.

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- Ambitious entrepreneur potential and companies' desires for export.
- Qualified human resources.
- Relatively cheap labor costs compared to European countries, in particular.
- Young, dynamic and eager qualified manpower potential who can accept long working periods.
- TOSB (TAYSAD Organized Industry Zone), which constitutes a significant infrastructure for Turkey and will be the "automotive center" in its region and possesses the potential for becoming an indispensable production and technology center in respect of automotive sub-industry companies.

4.8.2 Weaknesses of automotive sub-industry

- Vision uncertainty and lack of strategy towards the sector's development.
- Unavailability of stage manufacturing and specialization in Turkey sufficiently in parallel to the world's development; not having system and module suppliers.
- Inability to transfer sufficient resources to R&D studies and technological investments on account of price policies of main industry customers on which they are dependent.
- Deficiencies with regard to benefiting from the potential that may arise from the cooperation on matters such as education, promotion and communication between companies.
- Production remaining below economic scales due to the import-weighted and unstable development, unable to charge the rising unit costs to main industry companies.
- Vehicle production capacity being over the demand and the investments are not made as required by global competition.
- Failure to comply sufficiently with industrial design, patent and international standards.
- Losing foreign trade balance in favor of imports as a consequence of increasing vehicle imports and the vehicle production based on imported parts.
- Failure to use adequately the consumer, financing and business loans due to high reel interests.
- Retrogression of competitive production possibilities because of the raw and auxiliary materials used in the production with energy prices rising over the inflation.

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4.8.3 The opportunities of automotive sub-industry

- In the event of foreign trade, balances in the automotive market structure and macroeconomic preconditions are not corrected.
- The probability of a decline in domestic demand and an increase of production costs.
- Thoroughly weakening possibility of the companies' equity capitals.
- The possibility of postponing the investments and reducing the employment.
- The government's lack of a permanent and consistent policy for the sector and the absence of state policies that make parts manufacturers vulnerable to their customers.
- The unplanned increase of input prices (energy, fuel, some semifinished products) controlled by the government and the preclusion of competitive production opportunities.
- High and unequal distribution of taxes in the registered sector.
- Capital insufficiency.
- The high cost of certification.
- Failure in global competition environment.
- The foreign capital threats and the lowering of domestic capital efficiency as a consequence of especially floating exchange rate including economic problems and the global customers.
- The formation of an automotive market completely dependent on imports and existing companies, which may encounter the danger of closure in case of not being successful in global competition process.
- Foreign dependency in machinery, service and raw materials.
- Inability to implement the system for regulation tests (ECE approvals), product controls and compliance approvals, obligations for applying to companies abroad.
- The reduction of competition opportunities and the increase of accreditation costs as a result of the accreditation act not being enforced.

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5
A Case Study from Turkey: Sa-ba

Abstract: *The implementation and internalization of green marketing by the automotive sub-industry, which is one of the main sectors in Turkey's economy, is one of the fundamental requirements for export-oriented growth. The automotive sub-industry increases the competitiveness of a country's economy by spreading technical culture in the sector, and by creating technical employment positions and regular investments. In this chapter, the green marketing strategies of Sa-ba Inc., which is a pioneering enterprise in Turkey's automotive sub-industry, are analyzed as the case study.*

Keywords: automotive sub-industry; original equipment manufacturer; Sa-ba Industrial Products

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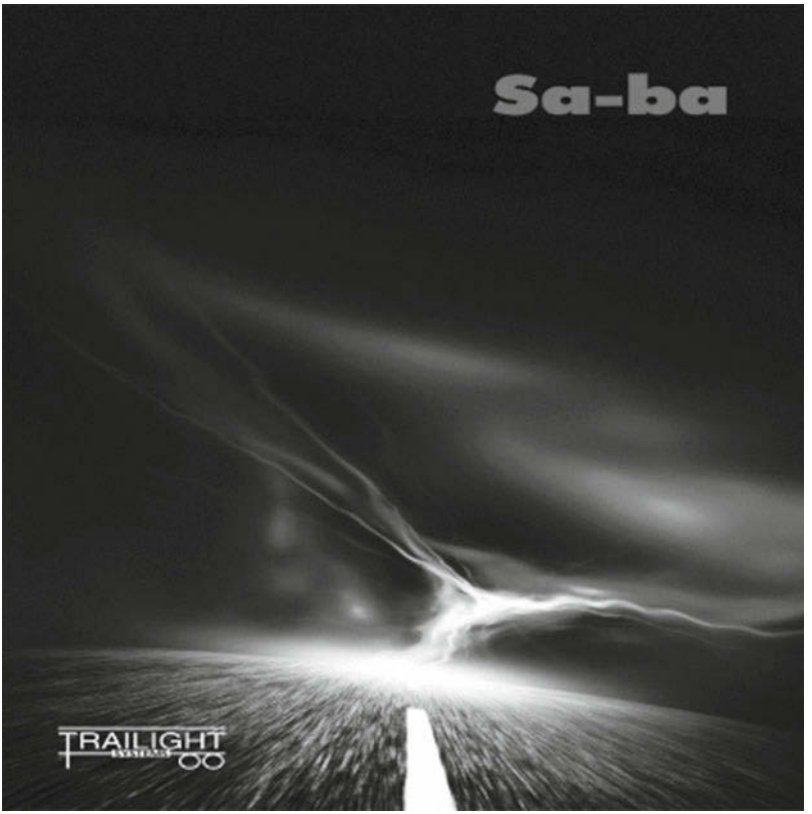

IMAGE 5.1 *Sa-ba: a case study from Turkey*

5.1 A case from Turkey: Sa-ba Industrial Products Inc.

Sa-ba Industrial Products Inc. was established by Ünal Özlü in 1976 as an organization producing plastic-based finished and semifinished products to main industries. Özlü increased the service quality by developing as an SME. It gained fast, and planned production capability after targeting export by reaching high-quality standards during the management of the second generation. It became the market leader and pioneer for trailer lighting equipments in domestic market with Trailight® brand. In recent years, Trailight® has also gained a significant acceleration in export as well.

Institutionalization efforts conducted in parallel with institutional growth placed Sa-ba among the suppliers of the world's largest automotive

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brands; also, its production standards were supported with employee rights, environmental sensitivity and vocational training beyond the product quality. A planned growth was recorded through the investments made on technology and business environment. At the last stage, the shareholders who were family members decided to take part only in the executive board by leaving the business administration to professional staff.

5.1.1 Sa-ba products in 5 continents, 30 countries

Today, all products coming from Sa-ba's production lines have international standards in all the respective categories. Lighting products are produced in compliance with SAE norms of ECE and NAFTA countries

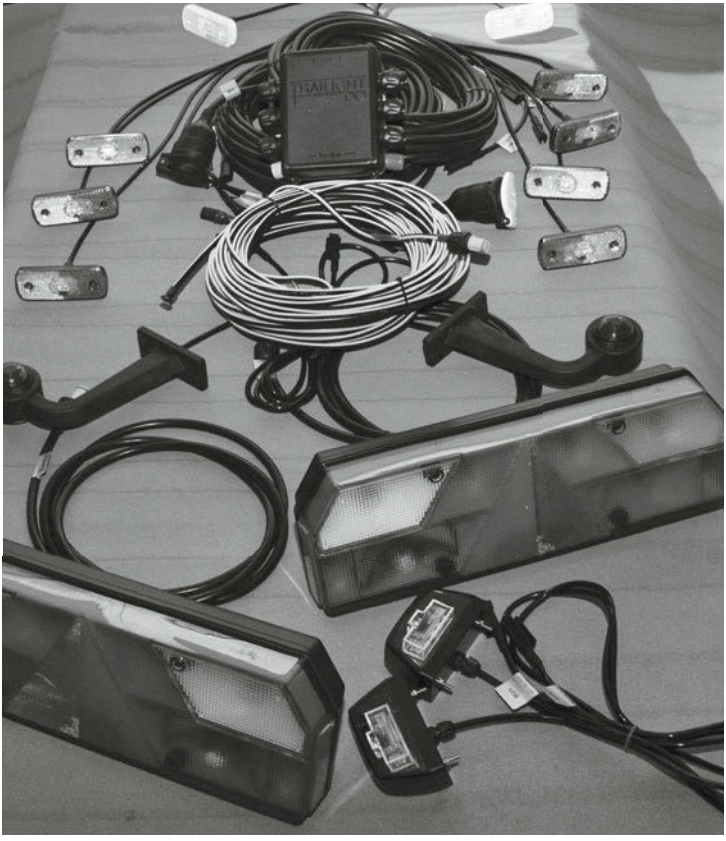

IMAGE 5.2 *Sa-ba products in five continents, 30 countries*

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which are valid in EU countries. Interior and exterior mirrors have the qualifications meeting OEM and ECE spectrum. Cable and signalization systems used in trailers have also been certified with ADR which is the legal safety standard for flammable and explosive agents.

5.1.2 Sa-ba's star in OEM market: Trailight®

Trailight®'s registered original product and lenses are compatible with EU standards, have passed international tests, have accurate photometric values and contains entire functions of a lighting system. All products under this brand are environmentally conscious and have recycling codes.

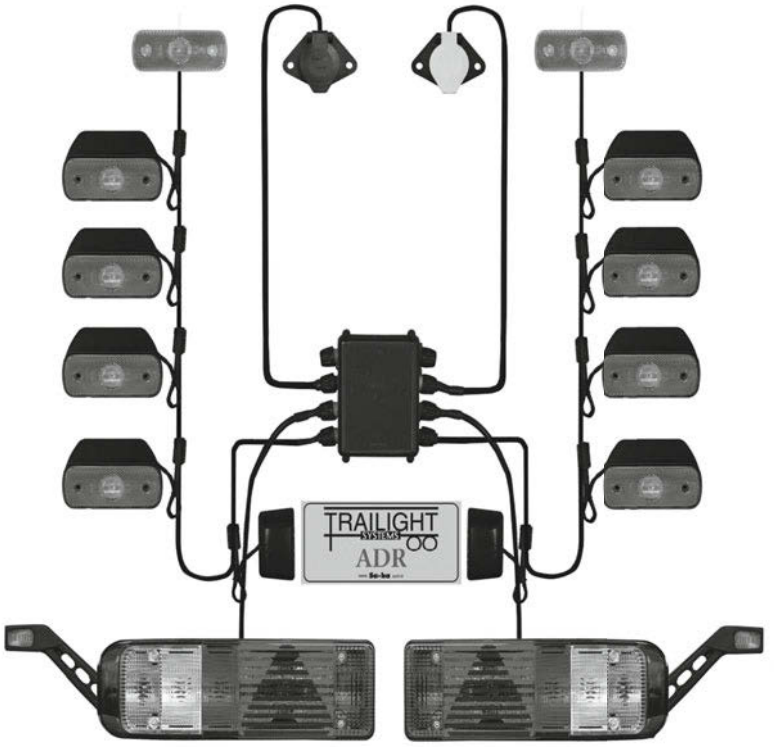

IMAGE 5.3 *Sa-ba's star in OEM market: Trailight®*

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5.1.3 TKY scope in environment policy

Sa-ba considers that the consequences of maintaining an environment policy, which is sustainable, has been documented for a habitable world by showing sensitivity to national and international quality and environmental standards at the entire production stages, as a foreign market improvement in the short term, and as cost savings in the medium term. Reduction of resource use, minimization of wastes resulting from processes and prevention of pollution, compliance with all obligations and regulations relating to environment have ensured both to catch universal supplier standards and to attain the status for supplying those outcomes:

- Reuse of wastes convenient for recycling and recovery.
- Maintaining activities which raise and enhance the consciousness of outsourcer and all suppliers except the staff with regard to environment, worker health and worker safety.
- Keeping the environment factor at the forefront in project studies.
- Continuous improvement of environmental goals.
- Institutional environmental policy constituting a framework for the development of the entire environmental goals and keeping them alive within the scope of the total quality management.

IMAGE 5.4 *Green bowser*

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5.1.4 Advantages of green marketing in Sa-ba

Sa-ba, among the powerful companies of Turkey automotive sub-industry, considers green marketing which is one of the important paradigms of modern marketing as an opportunity to achieve its goals. Accordingly,

Activities relating to environment are used as a pressure element over other competing companies. Producing environmentally friendly products provides advantage at the stages of marketing and sales. Furthermore, costs are reduced through the effective use of resources and recovery works.

Customers prefer enterprises which approach the environment consciously and are environmentally friendly producer in the global competition scenario. Being environmentally friendly is of importance with respect to the image and brand value of the enterprise and makes visible the social responsibility of the company.

There is an urgency to comply with the rules and practices of central and local administrations about the environment and it is more secure before the laws. Moreover, government is involved in connection with the benefits and incentives received.

The morale level of the enterprise and the staff working in the enterprise are raised.

5.1.5 Enhancing the market share with green marketing

ISO 14001 certificate is obligatory in the automotive sector. This system which has been implemented by Sa-ba for many years enables its market share to increase.

5.1.6 Social responsibility

Sa-ba's understanding of the environment has become a lifestyle apart from customer conditions and statutory requirements. Studies carried out in this scope are as follows:

42 liter vegetable oil was collected and sent to KOLZA company and recycled as biodiesel with participation by the entire Sa-ba employees.

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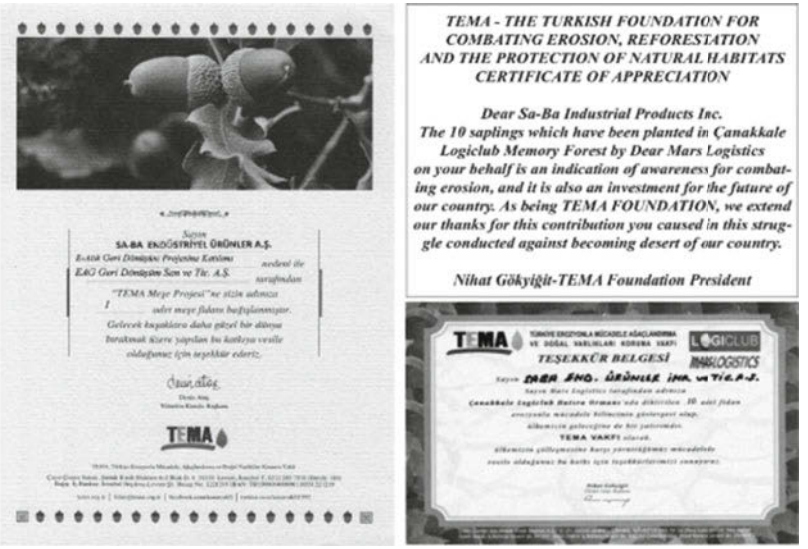

IMAGE 5.5 *TEMA foundation planting of trees (certificates)*

"World Water Day": World Water Day events have been organized since 2012 in the company and awareness of the employees are raised with regard to the importance of water. The other important activity is TEMA foundation's planting of trees.

Fair trips: Every year, they attend environment fairs together with the company personnel who work for the environment and make suggestions; they struggle to raise awareness and consciousness regarding the environment.

Environmental communication boards: They assist to impart the environmental boards announcement – publications and environmental activities created in the different areas of the company – to the employees. The entire staff is informed on a regular basis about the studies regarding the environment by the boards.

5.1.7 Waste reduction and cost reduction

Recyclable cloth has started to be used in the company as of the beginning of 2013. For example, a single cloth can be used after passing through at least 30 cleaning processes. To make cleaning/to wipe with textile pieces had been causing time and labor losses; but now loss of man-hours are prevented with the help of recyclable cloth and savings are achieved.

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5.1.8 The use of recyclable cloth, recyclable waste

Earlier, 1,500 tons of oil rags waste had been generated per year before pursuing the green marketing policy; 0.65 Turkish lira (TL) dissipation cost per ton and 125 TL price per transportation had been paid. A major cost item had been arising when the cost of rag used was calculated. This item was reduced to just cloth price by switching to the use of recyclable cloth. The rate of consumption for the cloth can be tracked in real terms and precautions can be taken against increasing circumstances. With the help of cleaning cloth, Mewa system and supply box activities, company costs have been reduced and environmental protection has been maintained by reducing the resource consumption rate.

5.1.9 Reduction of water usage

In order to save water flowing from faucets, the water amount flowing per unit time is reduced by rates up to 50% through flow rate limiters. For example, the amount of water consumed by somebody who consumes about 10 liters of water in one minute at the sink is reduced by 50% after the apparatus is installed. The person who uses the water doesn't even notice this saving because of the pouring speed of the water along with air. Profits are gained through savings, and users continue to use water comfortably.

Siphons have a water capacity of 8–10 liters, 6–8 liters and 4–6 liters. In other words, maximum 8–10 liters and minimum 4–6 liters water are consumed each time the siphon is flushed. However, hygiene can be achieved with 6 liters. One liter water is saved each time the siphon is flushed thanks to the apparatus which is fixed in the siphon (http://www.drfatura.com/sutasarrufu.php). Similarly, power consumption is

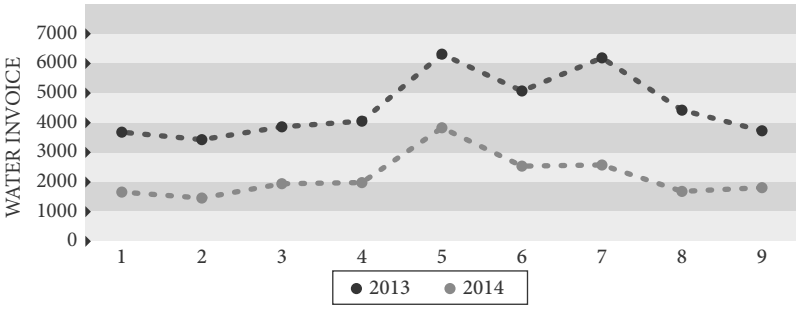

FIGURE 5.1 *Reduction of water usage*

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reduced by switching to stand-by mode when computers are idle. All faxes in companies are sent and received via the computer, and thus resource consumption and workforce productivity is achieved.

5.1.10 Green promotion

Pencils which are manufactured through the recycling of waste paper and plastic are sent to all companies with flower seeds as a collaborative effort. In this way, recycling and environment issue is highlighted.

IMAGE 5.6 *Green promotion*

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IMAGE 5.7 *Carbon footprint*

5.1.11 Carbon footprint

Tree planting is performed after carbon footprint is calculated although the company has exception legally pursuant to its activity and capacity. In 2012, 1,987 metric ton carbon emissions were noted and 23 trees were planted within the year.

5.1.12 Government pressure for green marketing

The company's compatibility is ensured by checking regularly the legislation, regulations and declarations available in the Environmental Law. The entire legislation is monitored over the Mevbank (Legislation Information Bank) and is published within the company.

Environmental licenses and permits are followed, and their currencies are taken under control. Furthermore, plans and notices are made on a regular basis every year and current situation is assessed by the ministry through execution of regular inspections every year. Besides, Sa-ba company's hazardous waste area is insured with "Hazardous Sustances and Hazardous Waste Compulsory Financial Liability Insurance" is being done.

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5.1.13 Customer pressure for green marketing

Automotive main industry suppliers are required to possess ISO 14001 Environmental Management System Certificate. ISO 14001 Environmental Management System has been implemented in Sa-ba since 2004, and development works have continued since the first day. For example, obtaining ISO 14001 certificate by the supplier is stipulated for being able to obtain FORD Q1 certificate.

What the company's existing and new suppliers have done with regard to compliance with the environment and legislation are questioned by means of annual questionnaires and supplier audits. The obtained findings are followed after transferring them into action plan, and their progress is monitored.

IMDS (International Material Data System): It is a data storage system designed with the purpose to serve automotive sector. The system is accessed via http://www.mdsystem.com internet page.

MDS (Material Data Sheet): It is the common name for all materials' data sheet which are stored and shared in IMDS system.

Sa-ba applies this study to all its customers. Each year, IMDS applied training is provided to suppliers who newly deal with the company and in IMDS revisions.

5.1.14 Pressure from environmentalist groups for green marketing

Awareness-raising seminars and trainings have been held within the company along with TÜKÇEV foundation every year about management and reduction of wastes.

5.1.15 Competition pressure

Turkey's competitive power in automotive sector. It is ranked 43rd among 144 countries.

TABLE 5.1 *Competition pressure*

Turkey	
2023 export target	500 billion dollars
2012 status	152 billion dollars
Must reach nearly three times more	
Automotive	
2023 export target	75 billion dollars
2012 status	20 billion dollars
Must reach nearly four times more	

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5.1.16 Cost and profit concerns

It is expected that the products produced according to customer expectation and legislation will be long-lasting and consume less energy.

Energy usage and the products with short lifetime escalate costs and profit can't be gained. The products manufactured in Sa-ba are integrated into processes in accordance with environmental and legal standards specified by OEM companies at the design stage.

Risk analyses are carried out by assessing customer expectation, environmental adaptation and whether the products are environmentally friendly every time when a new project is launched. In this way, possible risks and costs are determined beforehand.

5.1.17 Green marketing mix

Green product

Recyclable materials that respect the environment are selected by taking environmental conditions into account to the maximum while product designs are performed. Raw materials and materials specified by customers are used because the company makes production for OEM firms.

Furthermore, terminals used in lamps which are among the company's basic products are designed with the selection of coatings and metals which are not harmful to the environment.

The products manufactured for commercial vehicles are produced environmentally sensitive after receiving ATEX and ADR certificates.

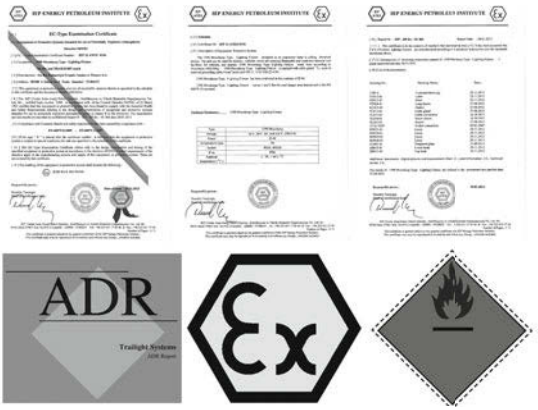

IMAGE 5.8 *ATEX and ADR certificates*

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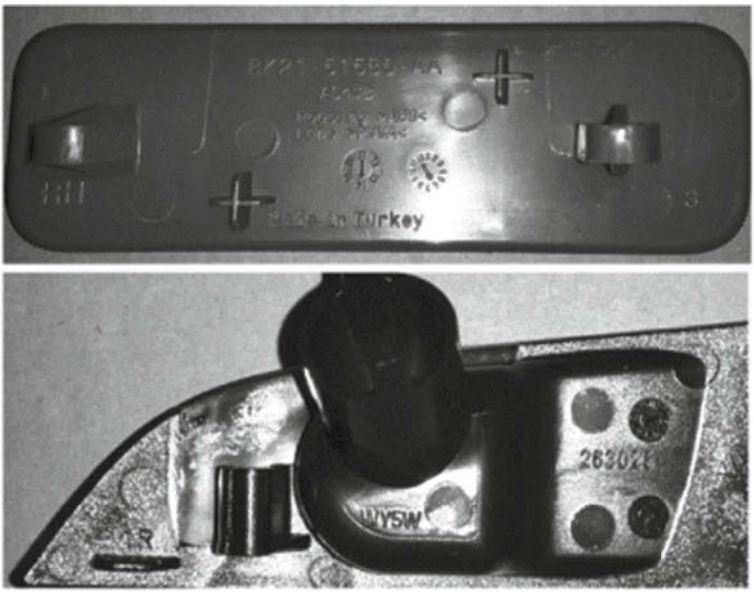

IMAGE 5.9 *Recycled and recyclable materials*

Note: Recyled and recyclable materials are informed on the spare parts.

IMAGE 5.10 *The project for license plate with green LED*

Note: Plastics used in the lamp are chosen from recyclable materials by 98%.
It is aimed to ensure less energy consumption by using led instead of lightbulb in lamps.
It has been designed as a lamp with longer lifetime compared to other plate license lamps.
It has been aimed to reduce resource consumption in this way.

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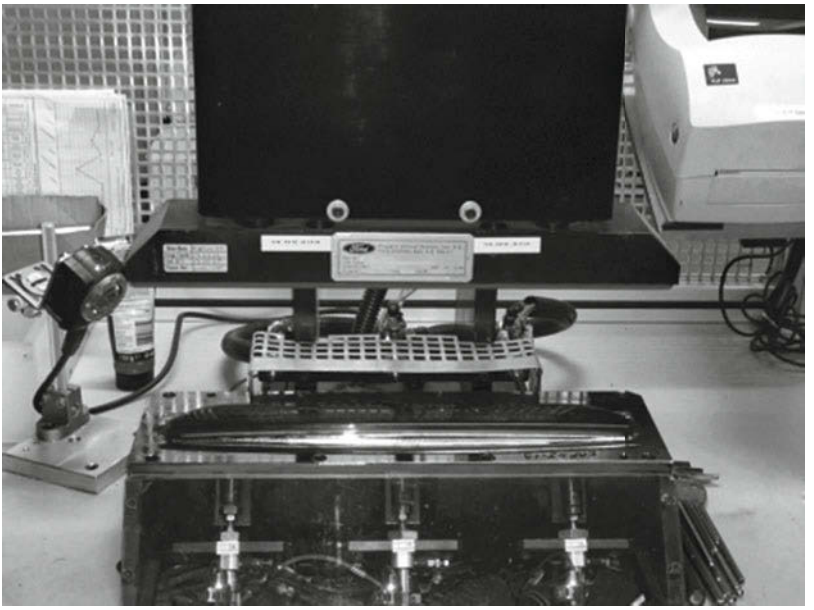

IMAGE 5.11 *Lamp project with green LED*

Note: Plastics used in the lamp are chosen from recyclable materials by 98%.
It is aimed to ensure less energy consumption by using led instead of lightbulb in lamps.
New molds have not been prepared by using carry-over parts from the previous project, and resource consumption has been reduced.
Having LED in the lamp is long-lasting compared to lamps with light bulbs.

Green packaging

Packages used in the company are as follows:

1. Cardboard box: Any printing or dyeing process is not done on the parcel in an attempt to perform recycling of the cardboard seamlessly.
2. Plastic box: Products are used through recycling together with customers and suppliers. In this way, one crate can be used for many times.
3. Cardboard separator: Cardboard separators used for transportations within the firm can be used through recycling until tearing or deformation occurs (at least ten times).
4. Plastic separators: Plastic separators are used in products dispatched to customers and within the firm. It is used through recycling until deformation occurs as in the cardboard separator (at least 30 times).
5. Labeling: This is made by using recycled tags.

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IMAGE 5.12 *Green point on cardboard boxes*

The green point

TÜKÇEV foundation has been assigned to collect wastes sent to the market. TÜKÇEV logo has been started to be used on the packaging as of the year 2014.

Green packaging strategy

- All packaging materials used within the company to consign products to customers and suppliers are used as recyclable.
- Plastic recycled crates are used in place of cardboard parcel.
- Reduction works are carried out by aiming to use packaging materials most efficiently during the determination of the packaging for products.
- Real data related to the reduction of sources in environmental management system, which is made every year, is measured by monitoring, and activities are planned accordingly.

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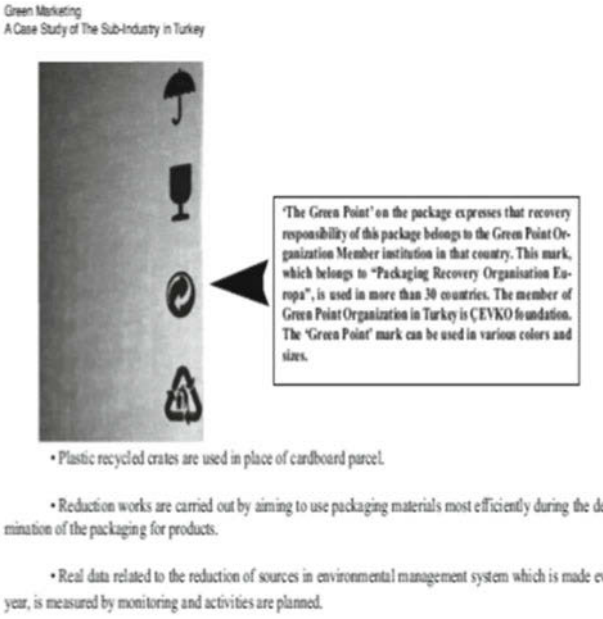

IMAGE 5.13 *Green point mark*

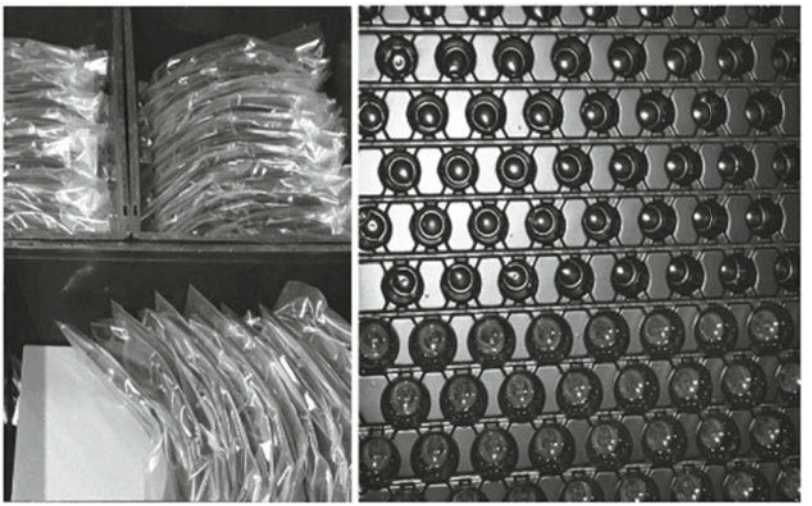

IMAGE 5.14 *Green packaging strategy*

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5.1.18 Sa-ba environmental policy

Sa-ba company, which has been carrying out its activities sensitively and uninterruptedly since 1976 in the automotive industry by offering products within the framework of national and international quality and environment standards towards customer satisfaction including injection, assembly, vibration-ultrasonic welding, lacquering and metallization processes with the design, has adopted productivity and quality as principal in the production process with the condition to respect environment and comply with legal requirements for a clean and livable world. Environmental policy has been documented, and Environment Management Representative has been appointed by the management so as to ensure implementation and continuity.

TABLE 5.2 *ISO 14001 EMS objectives and targets (2013)*

No.	Objective	Target
1	Dropping energy consumption	Dropping of yearly natural gas consumption from 0.06% to 0.07% in turnover ratio
2	Dropping energy consumption	Dropping of yearly electricity consumption from 1.27% to 1.26% in turnover ratio
3	Reduction of resource consumption	Reduction of yearly water consumption from 0.07% to 0.06% in turnover ratio
4	Reduction of resource consumption	Reduction of yearly diesel-fuel consumption from 3,594 liters to 3,000 liters based on vehicles
5	Reduction of packaging wastes (paper, cardboard, plastic, etc.)	Setting yearly paper usage to a maximum of 0.01 in proportion to production pieces
6	Reduction of paper amount per personnel	Dropping of paper consumption from 3kg/peraon per year to 2,5kglperson per year
7	Constantly keeping the environmental consciousness alive	Providing environmental training at least once a year to every personnel a) Organizing world water day events b) Organizing world environmental protection week events Informing the newly employed staff about the environment (Orientation) a) Increasing the productivities along with lean production and raising awareness of the staff by reducing the use of sources b) Making other people work together conscious of the environment issue

Continued

DOI: 10.1057/9781137535894.0012

TABLE 5.2 *Continued*

No.	Objective	Target
8	Minimization of probable risks by reviewing all emergencies within the bounds of possibility	The review of emergency plans once a year a) The review of emergency team member once a quarter b) Creating and following the ISIG targets
9	The use of environmental-friendly products in purchases	a) Taking environmental factors into account for products purchased b) The redaction of oil usage by 10% by choosing long-lasting oil in machinery c) Taking necessary precautions by evaluating the environmental aspects and effects prior to the purchase of chemical liquid, substance and oil
10	The use of environmental-friendly products in R&D activities/efforts	Taking environmental factors into consideration for products during R&D activities/efforts
11	Reduction of scrap rate	Dropping to a maximum of two
12	Enabling the business environment to be compatible with environmental regulations	Having an accredited firm to perform emission and noise measurements
13	Reduction of resource consumption	Dropping recycled wastes by 10%
14	To work with companies having ISO 14001:2004 certificates in 2013	40%
15	Reduction of hazardous wastes	Dropping hazardous wastes by 30%
16	To reduce yearly carbon foot print and to plant trees accordingly	Emission of just 3,448 metric ton carbon and to plant 102 trees in 2013

In this regard, the following have been achieved:

1. Reduction of resource usage
2. Minimizing the wastes generated from processes and prevention of pollution
3. Compliance with local, national and other obligations and regulations regarding the environment
4. Enabling the reuse of wastes which are recyclable and recoverable

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5 Raising and disseminating awareness about the environment, worker health and safety for employees and suppliers who are engaged in subcontracting or producing parts,
6 Keeping the environment factor at the forefront in the cases where alternatives are available in new projects
7 Continuous improvement of environmental targets and continuous development
8 Determination in achieving the entire environmental aims and goals
9 Announcement of the decisions taken in accordance with this policy to all employees and the persons working on behalf of Sa-ba
10 Making environmental policy available for review by any one who wishes.

This policy is kept alive within the scope of "Total Quality Management" with participation by all employees and suppliers in conjunction with Company Quality Policy.

5.1.19 Activities prescribed by environmental management program

The company should organize events as part of the Environmental Management Program. For instance, automatic adjustment should be made according to outside temperature in the air conditioners; office natural gas should be shut down during nights. Also, employees should be constantly made conscious about turning off the enterprise lights at intermediate times (tea/lunch breaks). They should perform works related to injection parts which cause more energy loss (based on yield calculations) for making them efficient through repairing and fixing by giving them to subcontractor companies.

When variability of the production is decreased, electricity usage can be minimized by fixing the temperatures (dedicated machine-dedicated mold), and injection breaking operations performed near the machines during production can save energy without the need for performing the extra drying process. Also, the continuity of three-shift working can be ensured, and thus machine stops and starts can be minimized. The use of robots initiated in part productions can lead to saving, and electricity consumption can be reduced.

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In addition, the use of extra products for the purpose of impeding lime formation and water corrosion in cooling systems can lead to decrease of electricity and water consumption and increase of productivity in the machines. Air conditioners in the server room can be turned off during the winter months (November, December, January, February, March). Saving measures should be taken through examination of Energy Efficiency Act and Projects. With quick coupling system and Staubli brand, more durable pipes can be be used in mold water connections, and the use of electricity can be decreased by avoiding machine stops and starts. Water supply can made via recirculation process, and thus water consumption can be reduced. Tap mouths are revised in such a way to enable water saving (current usage is 9sn/1 lt and the target is 9sn/600gr). Personnel's office men toilet water urinals are cancelled and they are converted to waterless urinals.

Continuity of work can be maintained by making the suppliers perform transportation of the purchased parts. Dispatch of the goods to the customers can be made with cargo if it is convenient. Common vehicle usage can be ensured for same direction courses and returns by tracking the use of vehicles. Recyclable crates also can be started to be used. The parcels of the suppliers who dispatch with parcels are sent back as long as possible; 10% of suppliers can be made to switch to recyclable crates so plastic recycled separator can be substituted for disposable paper separator in crates and boxes. Double-sided usage of papers also can be enabled. All presentation files is ensured to be made with CDs in consultation with customers and suppliers. Therefore reduce paper waste. The same goes for faxes. The use of MS Project program in the computing environment can reduce the use of paper in the projects.

ISO 14001 EMS training should be provided minimum once a year to all employees. Thus, employees' awareness can be raised by organizing events about environment water day. Employees should be made conscious by organizing events related to world environmental protection week. The continuity of orientation trainings should be ensured. Risk analyses should be carried out on a regular basis and actions taken. Having all departments to perform Electrical Wiring Examination, and detected inconvenient situations are analyzed and actions are planned. Prohibited/restricted material list can be sent to suppliers. These are the evaluation of environmental dimensions before the purchase (legal obligations arising from ecological effects) and supply of MSDS (Material

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Safety Data Sheets) and after the purchase (supply of material safety information forms, explaining to the user, determination of disposal methods, providing training to the user personnel). It is checked whether prohibited/restricted materials have been used in raw materials and semifinished products supplied from outside and have been incorporated in new projects. They are recorded in MDS (Material Safety Data Sheets) global system.

Hiring intermediate personnel for not stopping the machines at break times (tea/lunch breaks) – the staff take break after transferring the current work to intermediate personnel – (stopping the machine poses a risk of faulty part printing) can help reduce wastage of energy. Legal obligations, monthly control of follow-up list and implementation of necessary activities should be ensured. Collaboration should be established with companies fulfilling the system requirements and possessing a certificate or aiming to receive a certificate with regard to ISO: 14001 Environmental Management System in the selection of new supplier. Training should be provided for raising awareness. Recyclable cloth usage should be ensured.

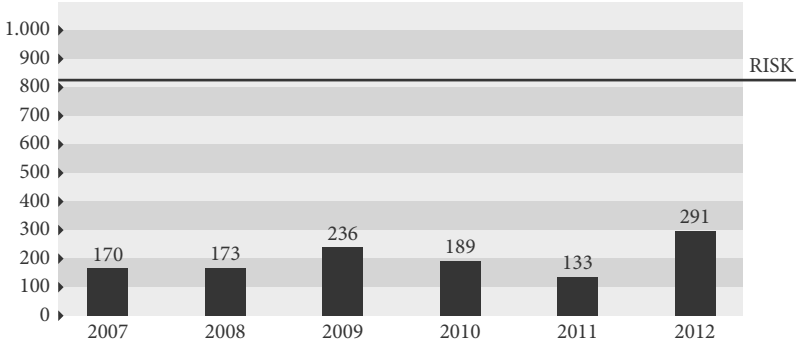

FIGURE 5.2 *TEP value on yearly basis*

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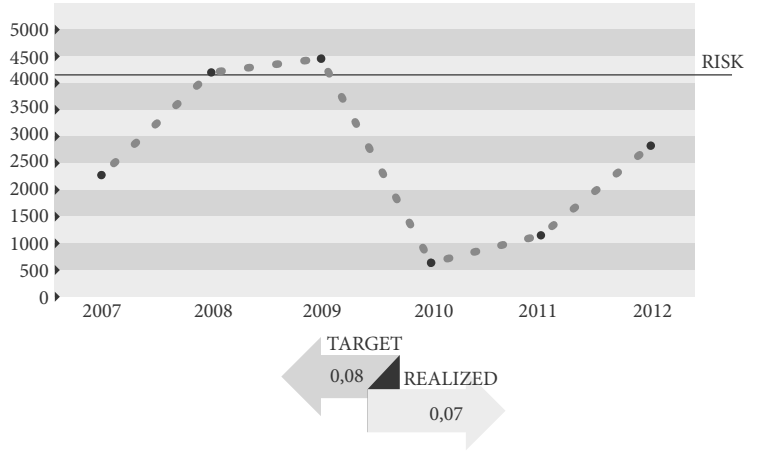

FIGURE 5.3 *Water consumption rates on yearly basis*

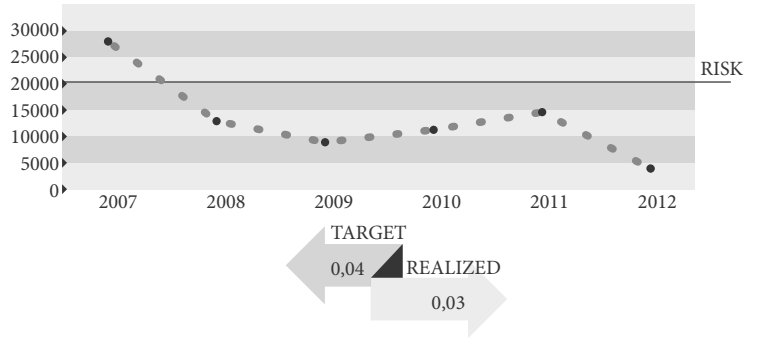

FIGURE 5.4 *Natural gas consumption rates on yearly basis (M^3)*

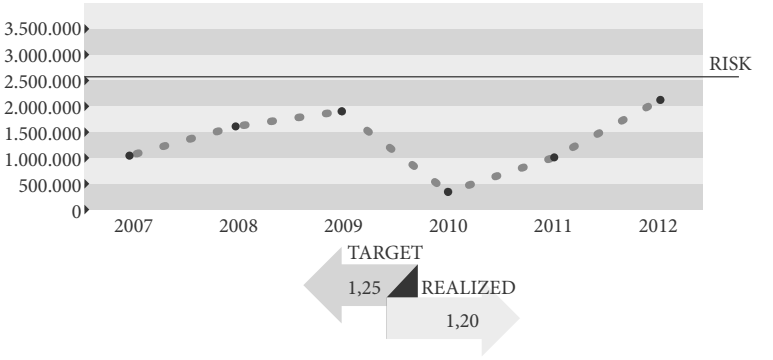

FIGURE 5.5 *Electricity consumption rates on yearly basis (kWh)*

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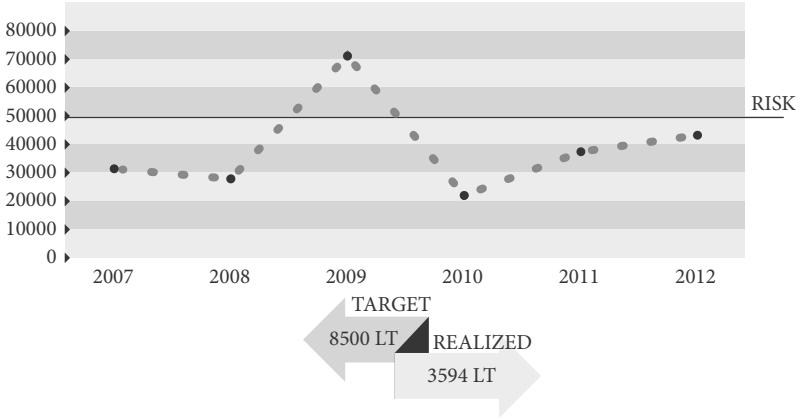

FIGURE 5.6 *Diesel consumption rates on yearly basis (Lt)*

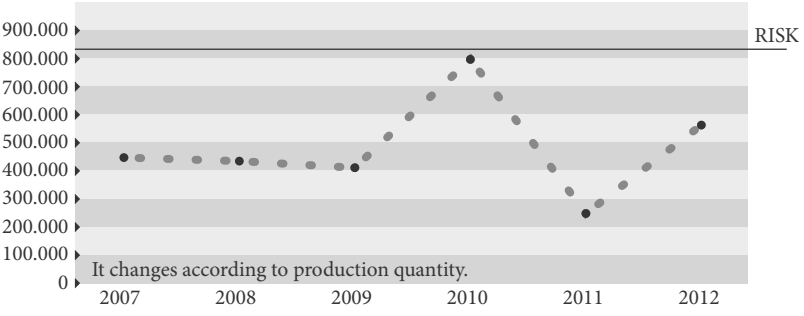

FIGURE 5.7 *Plastic raw material rates on yearly basis*

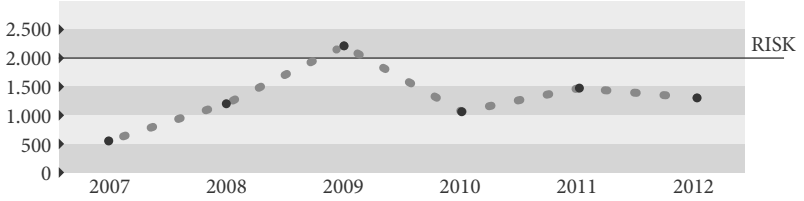

FIGURE 5.8 *Oil consumption rates on yearly basis*

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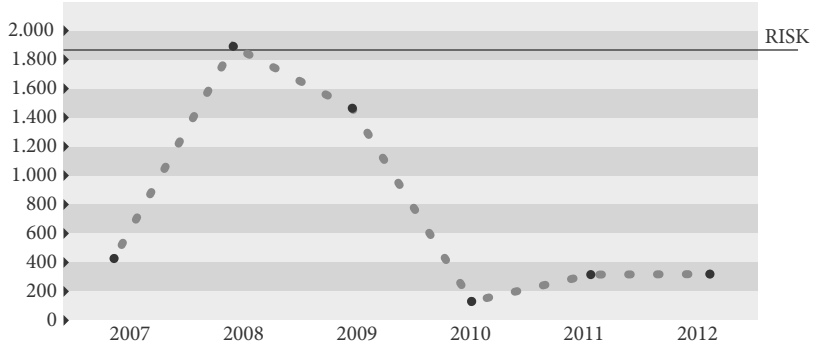

FIGURE 5.9 *Paper consumption rates on yearly basis*

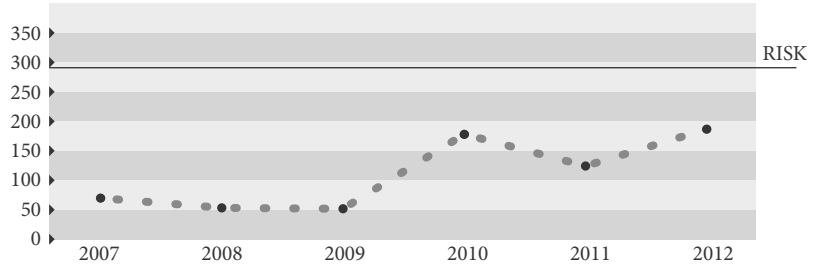

FIGURE 5.10 *Packaging material (cardboard paper separator palette label) consumption rates on yearly basis*

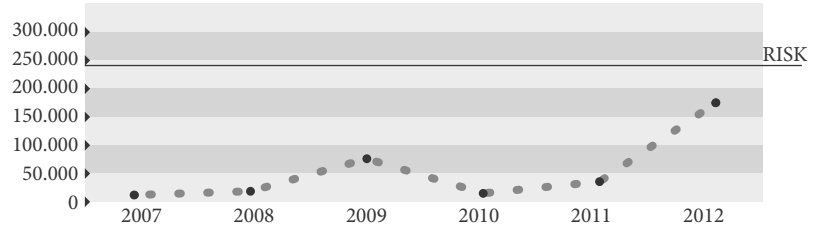

FIGURE 5.11 *Distribution of recycled waste resulting from our processes on yearly basis (Kg)*

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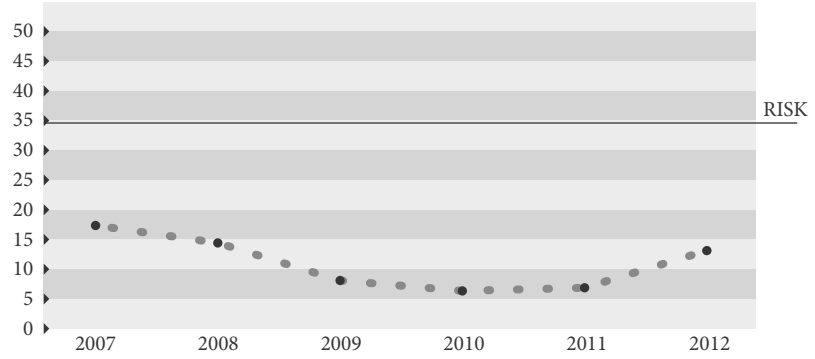

FIGURE 5.12 *Distribution of waste battery resulting from our processes on yearly basis (Kg)*

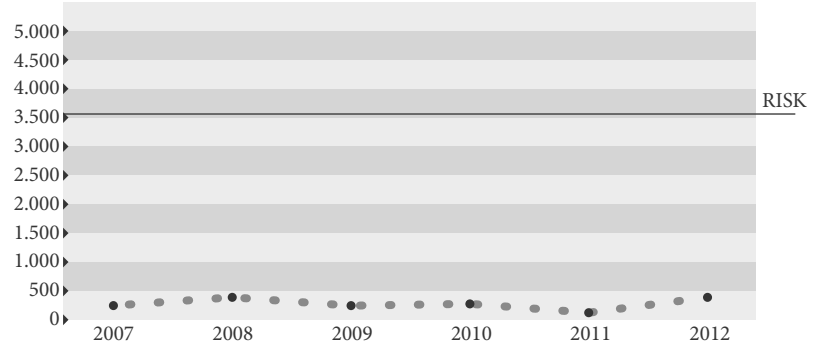

FIGURE 5.13 *Distribution of waste metal resulting from our processes on yearly basis (Kg)*

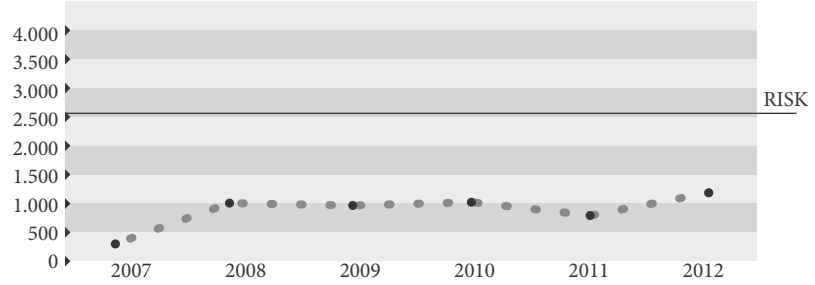

FIGURE 5.14 *Distribution of waste oil resulting from our processes on yearly basis (Kg)*

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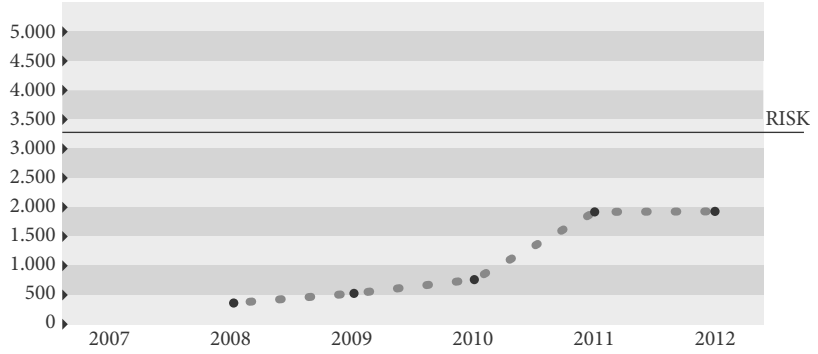

FIGURE 5.15 *Distribution of contaminated waste on yearly basis (Kg)*

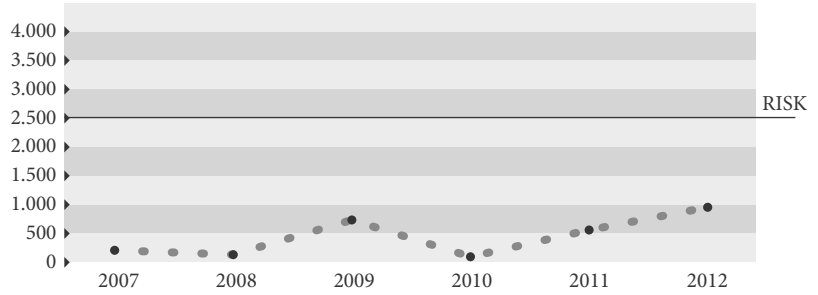

FIGURE 5.16 *Distribution of electronic waste on yearly basis*

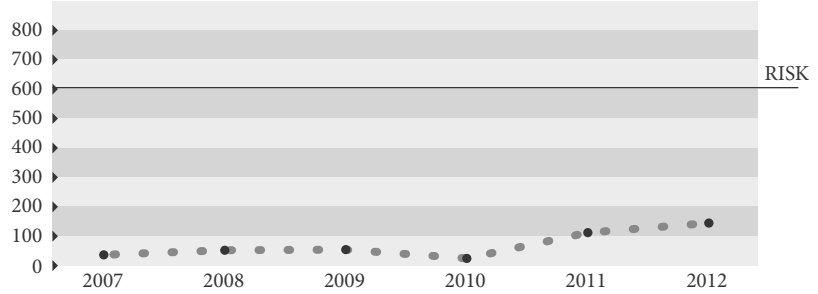

FIGURE 5.17 *Cartridge consumption rates on yearly basis (Kg)*

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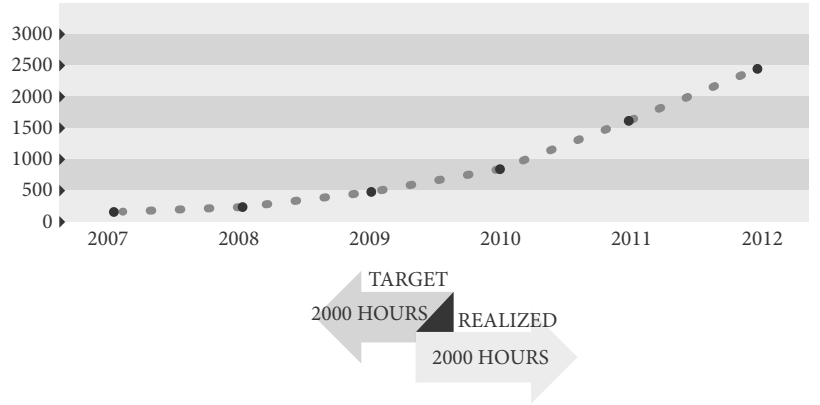

FIGURE 5.18 *Cartridge consumption rates on yearly basis (Environment and ISG training on yearly basis-hours)*

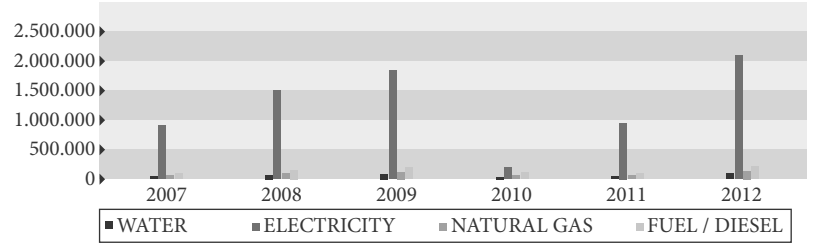

FIGURE 5.19 *Sa-ba distribution analysis for the use of resources on yearly basis*

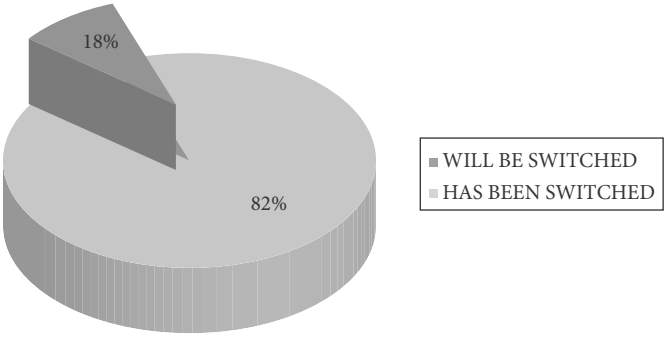

FIGURE 5.20 *Quick coupling system switching status for 2011*

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Quick Coupling System; 90% reduction in water bursts; 70% decrease in operation time, providing poka yoke in connection with equipments and prevention of faulty connection.

Recycling

Plastic box: Products are used through recycling together with customers and suppliers. In this way, one crate can be used for many times.

Plastic and cardboard separators: cardboard separators used for transportations within the firm are used through recycling until tearing or deformation occurs (at least 100 times).

Recycling and recovery processes for wastes of plastic, paper, cardboard and so on generated in the company are performed by Sallilar Kagit ve Ambalaj. The wastes are sent to recovery and recycling facilities for paper, cardboard, plastic, metal, wood so as to be converted into new materials which can be reused after they are separated according to their categories.

IMAGE 5.15 *Recycling (1)*

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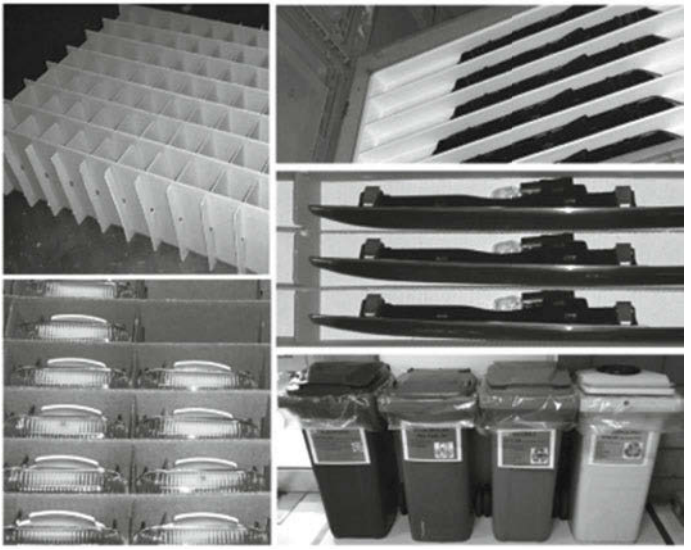

IMAGE 5.16 *Recycling (2)*

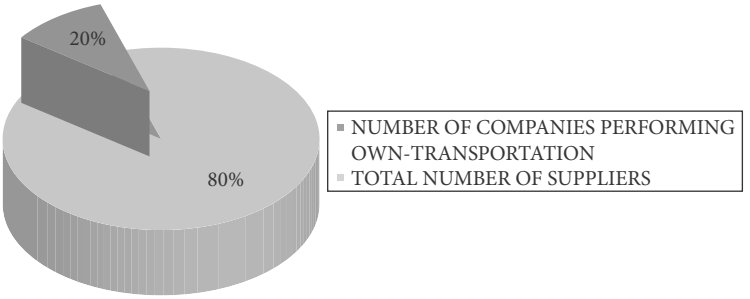

FIGURE 5.21 *Supplier transportation status for 2012*

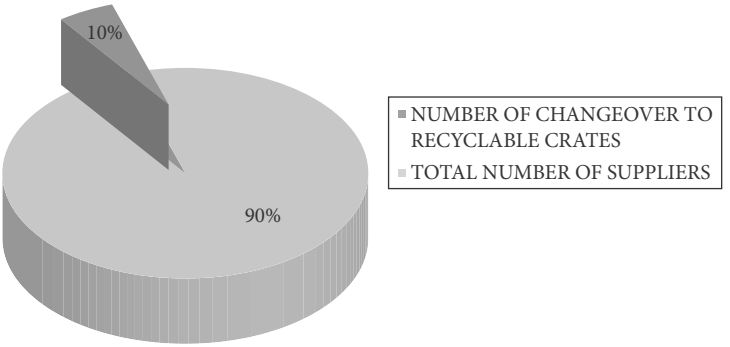

FIGURE 5.22 *Supplier changeover status to recyclable crates for 2012*

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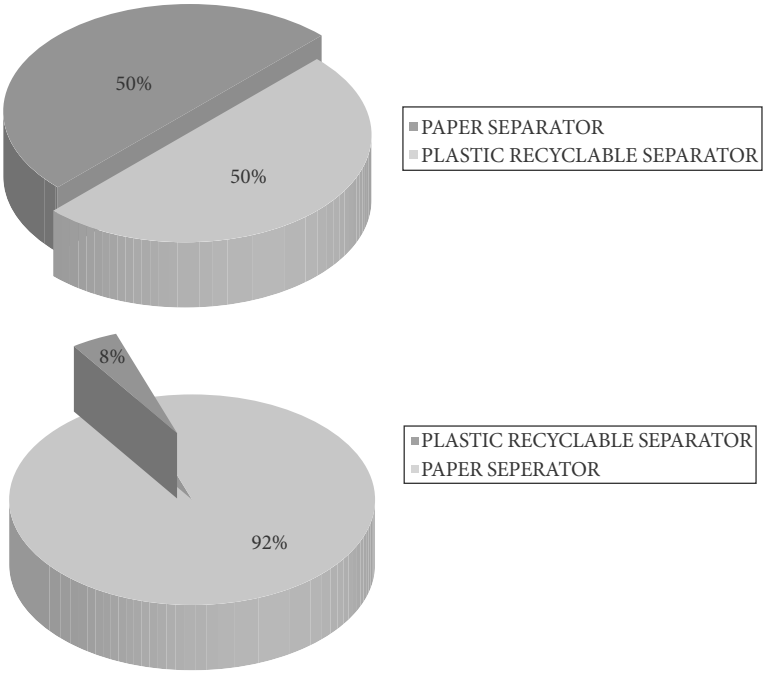

FIGURE 5.23 *Changeover to the use of recyclable separator for 2012*

Reuse

Sprue wastes which are generated during production of parts in the injection process are reused in the injection process again as raw material by grinding them in the crushing machine.

Recovery

Recovery of contaminated wastes generated in the company is carried out in collaboration with CHIMIREC AVRASYA company. This company separates oily rags, gloves, chemical containers and hazardous wastes according to their classes, stores temporarily and provides recovery (acquiring energy by burning the wastes) or disposal. The packages of products to be disposed are given to relevant package recycling companies only after being pressed. The waste oil matter is handled in cooperation with ORUSAN KİMYA company, and this company performs the recycling of the first category waste oils, manufactures mold compatible with TSE 12153 standard and produces B-1 Mold Oil that is used in the construction sector and supply to the market.

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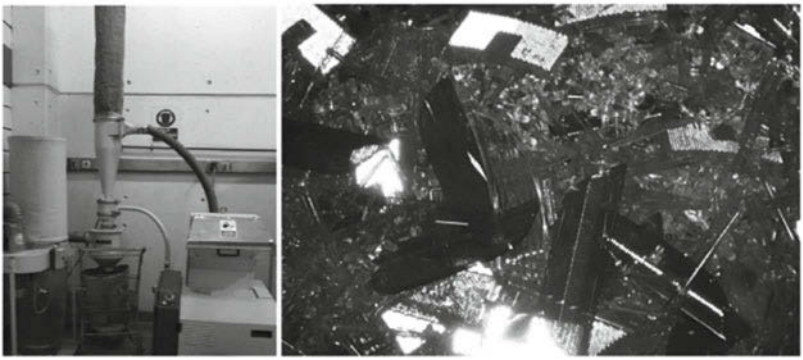

IMAGE 5.17 *Recovery*

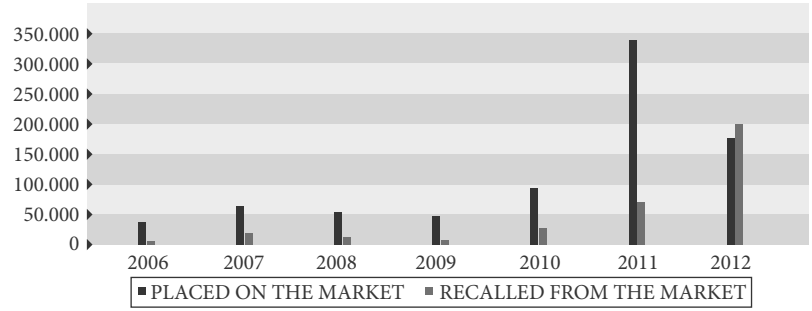

FIGURE 5.24 *Sa-ba packaging waste collection analysis on yearly basis*

Packaging wastes put on the market are collected by TÜKÇEV foundation every year, and awareness-raising activities are carried out.

Green Label (Eco-Labeling)

The recycling mark on the cardboard boxes covers eco-labeling system.

Green distribution

The catalogues concerning the Sa-ba company products are not printed; they are delivered to customers and dealers in the form of CD and mail.

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Recycling and recovery processes for wastes of plastic, paper, cardboard etc. generated in the company are performed by Sallilar Kagit ve Ambalaj. The wastes are sent to recovery and recycling facilities for paper, cardboard, plastic, metal, wood so as to be converted into new materials which can be re-used after they are separated according to their sorts.

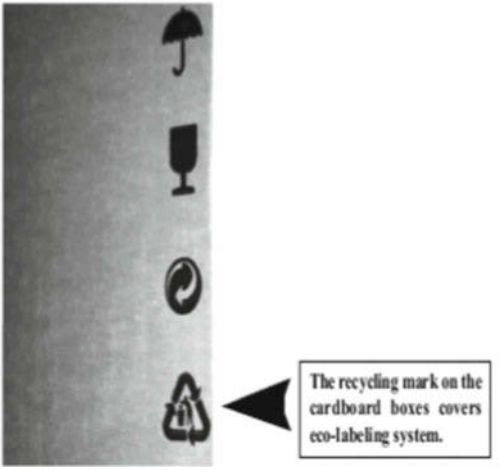

IMAGE 5.18 *Green label*

IMAGE 5.19 *Green distribution*

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Transportation

Emission checks are performed for vehicles at the enter and exit points at the company, and companies are warned. Besides, logistics of the products are mostly performed by means of customer transportation vehicles.

Delivery routes are determined by bringing together the order periods; in this way dispatch is carried out using just one vehicle. And commuting is minimized.

Stock

Stock inventory turnover rate is followed in the company for reducing the stocks, and VSM studies are conducted.

KANBAN material management system is implemented in the company. Kanban is a scheduling approach which is used through controlling the material movements in "Just in Time" production environment.

VSM (Value Stream Mapping) project

Purpose of the Project: Coordination of sub-teams and arranging the lines by conducting value flow mapping analyses for product groups identified.

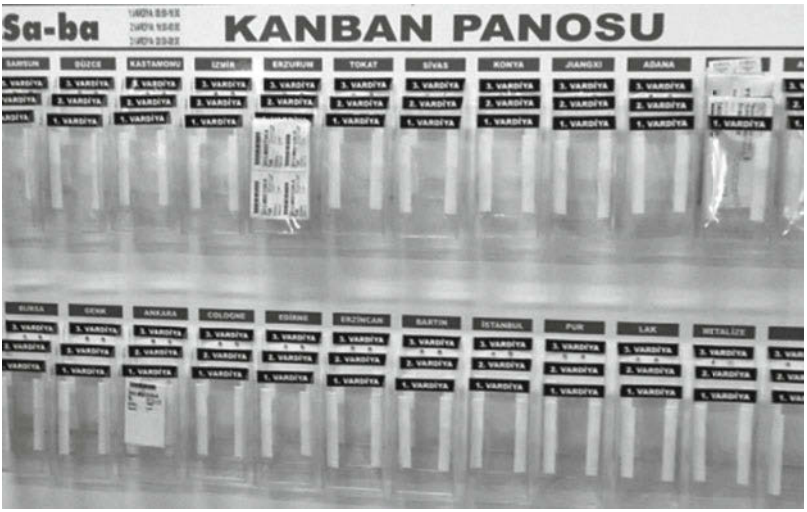

IMAGE 5.20 *Stock-Kanban*

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IMAGE 5.21 *Sa-ba total quality management vision for 2020*

Target

Increasing inventory turnover rate and the production pieces and reduction of space use besides increasing the quantity of production per person.

VSM project gains

VSM study was conducted in four parts and the following results were obtained.

1. Assembly time was dropped from 86 seconds to 75 seconds in four references (14%).
2. Four references were obstructed to cover ground more than 295m/week.
3. Two lines were combined; one line was started to be used for the manufacturing of other products; 30 square meters were gained.
4. Stock duration was dropped to 7 days from 47 days in one reference.

Sa-ba Total Quality Management vision for 2020 is named Cocoon Power.

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