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INCREASING MARKET OPPORTUNITIES THROUGH STANDARDIZATION AND RESPONSIBLE CARE PROGRAM

Summary. The development of Environment Management Systems (EMS) commenced as a response to global environmental issues and as a recognition of awareness that sustainable development is prerequisite for keeping the natural system in a proper balance. Transport of dangerous goods by road is quite a complex activity that poses a major potential threat to people and the environment. Therefore, the introduction of certain system tools (standardization of business) contributes to a safer and better road transport operations of dangerous goods. Chemical industry combining their efforts for safety and the environment under the Responsible care program (RC). Such efforts have resulted in the development Safety and Quality Assessment System (SQAS) to assess the haulers. This paper presents tools standardization of business as an opportunity to improve the market positions of dangerous goods haulers.

ZWIĘKSZENIE MOŻLIWOŚCI RYNKOWYCH W TRANSPORCIE ŁADUNKÓW NIEBEZPIECZNYCH POPRZEZ STANDARYZACJĘ I REALIZACJĘ PROGRAMU ODPOWIEDZIALNOŚĆ I TROSKA

Streszczenie. Rozwój systemów zarządzania środowiskiem (EMS) jest odpowiedzią na globalne problemy środowiskowe a jednocześnie uświadomieniem, że zrównoważony rozwój jest wstępnym warunkiem do utrzymania środowiska w naturalnej równowadze. Transport drogowy ładunków niebezpiecznych jest złożoną działalnością, obarczoną dużym ryzykiem, stanowiącą jedno z głównych zagrożeń dla ludzi i środowiska. Dlatego też wprowadzenie określonych narzędzi systemowych m. in. w zakresie standardów operacyjnych przyczynia się do bezpieczniejszego i sprawniejszego przewozu towarów niebezpiecznych. Połączenie działań w zakresie bezpieczeństwa, ochrony środowiska i poprawy jakości świadczonych usług jest możliwe dzięki takim narzędziom, jak program Odpowiedzialność i Troska (Responsible Care) i system oceny bezpieczeństwa i jakości (Safety Quality Assessment Systems). W artykule przedstawiono wpływ tych standardowych instrumentów na poprawę pozycji rynkowej przedsiębiorstw przewożących ładunki niebezpieczne.

1. INTRODUCTION

Road safety is an extremely important topic which is dealt with by experts in this field virtually worldwide. Numerous studies show the level of road safety in the particular field with data on the number of accidents and the number of injured or killed in a period of time. In world scale, it is the

cause for loss of more than 1,2 million lives and about 50 million injuries annually. [4] The situation is similar on the roads in Europe. According to [5] 40 000 road users are killed, and the annual number of injuries is many folds bigger.

Safety strategy with efficient connections between the elements of traffic and transport system is called sustainable safety strategy. It means the approach in which man, vehicle and infrastructure are connected in the way which will give, as a result, a high level of road safety. These are some of the most important principles of sustainable road safety:

- prevention is better than cure;
- proactive and preventive approach has the central role in the sustainable safe traffic system;
- all of the transport system elements, people, vehicles and road infrastructure are geared to one another;
- human capacities are the weakest link in the traffic and transport safety chain, (because of the human characteristics), so, they are incorporated in sustainable safety as a reference against which other system elements are gauged;
- as a consequence of above mentioned, road safety depends very little on individual road users decisions.

Briefly, we can say that the basic and most important element of the sustainable road safety is well informed and educated road user with his personal features. Road infrastructure and vehicles, ought to be adapted to the users demands, in order to simplify driving, and protection first of all vulnerable, and the other people, participants in traffic and transport. [3]

When dealing with road accidents in the transport of dangerous goods by road, in addition to numbers of injured is important to know the quantity of dangerous goods spills in the environment. Such chemicals can lead a large and unpredictable damage to the environment. Figure 1 shows number of road traffic accidents where vehicles transporting hazardous goods were involved between 1994 and 2006 in the Republic of Slovenia. It is visible that the accident have occurred and it is expected they will occur in the future too.

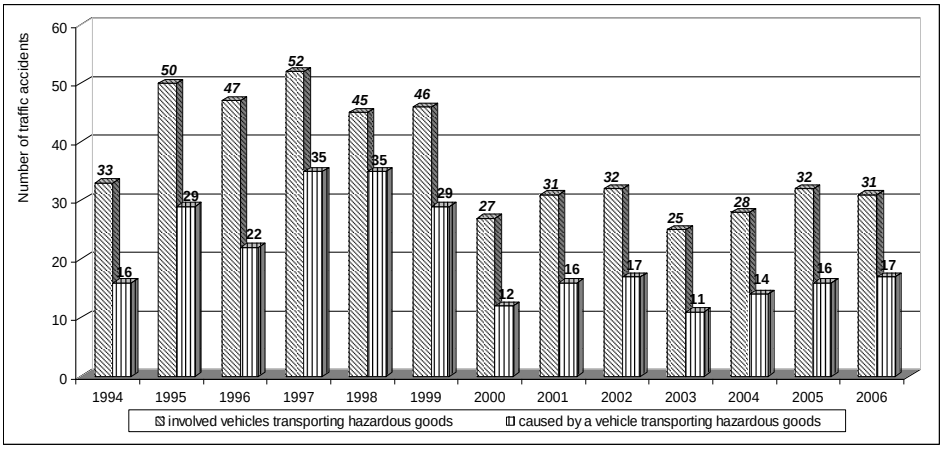

Fig. 1. Number of road traffic accidents where vehicles transporting hazardous goods were involved between 1994 and 2006 in Republic Slovenia

Rys. 1. Liczba wypadków drogowych w Słowenii z udziałem pojazdów przewożących ładunki niebezpieczne – dane dla okresu 1994-2006

As a result of traffic accidents involving vehicles carrying hazardous goods are chemicals spills in the environment, too. In the period of 1992 to 2006 annual average volume of spill hazardous goods (Figure 2) was 228 litres per traffic accident. Effective internal structure of the carrier of dangerous goods, in particular, a suitable level of safety concerns in the context of compliance with the provisions of the laws is an important element in ensuring the safety of such operations. Prevention is much more successful than cure.

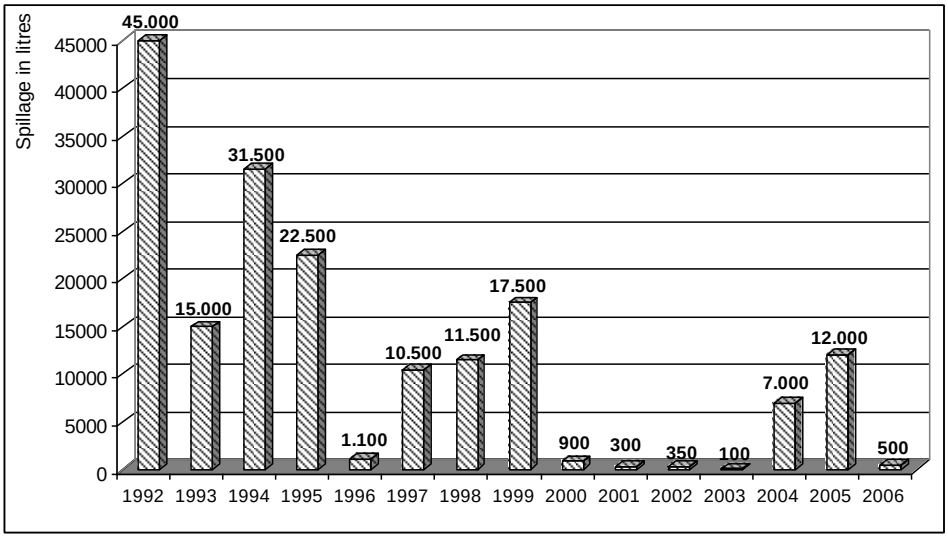

Fig. 2. Volumes of hazardous goods spills in road traffic accidents where vehicles transporting hazardous goods were involved between 1994 and 2006 in Republic Slovenia

Rys. 2. Ilość substancji niebezpiecznych zanieczyszczających środowisko na skutek wypadków drogowych z pojazdami przewożącymi ładunki niebezpieczne w Słowenii – dane dla lat 1992-2006

Dangerous goods transport is an important part in the road transportation subsystem. Due to its complexity and ample potential risks by which it affects people and environment, it has been regulated by the legislation from both aspects, technical and environmental. The proper legal definition is the one and only acceptable and successful precondition in order to achieve safety of such transportations at the highest level. However, having fulfilled this prerequisite is not sufficient unless it is assured that all the prescribed norms and rules of law are complied with and executed in practice by all the participants in the transport process. The government of each country finds it a very difficult task to manage and control such a complex subsystem and achieve the compliance with the laws and regulations on dangerous goods transport binding on all carriers.

The research purpose is to recognize that the mere compliance with the laws on the part of participants involved in the process of dangerous goods transport is not sufficient to ensure the required level of safety and environmental protection. The efforts are directed towards introducing the required operating standards which are in fact an upgrade to this underlying and could be effective use as a business opportunity.

Road transport of dangerous goods is a very complex activity representing a major potential danger to people and environment. For that very reason, the introduction of certain system tools (standardization of operations), that was a step forward to a safer and more effective operation of the carriers of dangerous goods by road was so welcome. However, this policy requires an adequate business environment to be prepared, which is based on transparency and smooth operations as an important marketing advantage that has a bearing on every company's economic performance.

2. ENVIRONMENT MANAGEMENT SYSTEM (EMS) IN THE FIELD OF DANGEROUS GOODS TRANSPORT

The content of laws that regulates road transport of dangerous goods varies greatly. This is why the holistic management approach to the operations of an individual carrier needed a tool to gain effective control over the business functions within the company, and concurrently enables a transparent enough presentation of the company's operation to external public, both the commercial partners and supervisory institutions.

The Environment Management System (EMS) is one of the possibilities which satisfies the demands referred to above. The system is a mix of organizational structure, responsibilities,

procedures, routines and resources for the management of a company. The ISO 14001 standard is just one of the international standards prescribed by the International Standard Organization (ISO), whose primarily aim is to co-ordinate the operation of individual companies according to the key environmental aspects which may have an adverse impact on the environmental pollution.

Important for the European space is the EMAS Directive (Eco Management and Audit Scheme). It was derived from the EU Regulation (EEC 1834/93) that was put into force in April 1995 in all Member States at the time, governing the implementation of the EMS. Companies from non-members states (at that time) acquired the EMS system in accordance with the previously mentioned international standard ISO 14001.

The development of Environment Management Systems started as a response to global environmental issues and as the awareness recognizing the necessity of the so-called sustainable development to preserve the natural systems properly balanced. In more advanced countries, the sustainable development concept was accepted by the politicians and the industrial sector as the leading philosophy when it comes to the preparation of development strategies. "The underlying idea of sustainable development is to live on the profit generated by prudent management of the material goods and not by exhausting the natural capital. In practice, this means to exploit the natural resources within the limits of their capability for renewal, and manage them in an appropriate way so that they will be available to future generations in a suitable quality" [2].

The motivation leading a company to decide for the demanding and difficult path to acquire an ISO certificate can be very diverse. The certification in accordance with the ISO 9000 standards mainly focuses on how to cope with the company's organizational structure and manage the business processes in order to achieve the highest quality of the product or service possible. The customer and his demands are in the forefront. The Bidder shall respond in such a way as to bring the quality of the product/service as close to the criteria of compliance with the requirements as possible. With the acquisition of this certificate, the holders can get included into the supply chains on the ground of favourable audit led by individual customers.

The reasons for the decision to acquire the ISO 14001 quality certificate rely on a slightly different basis. Namely, the standardization of operation under this standard does not directly influence the improvement of quality in a given product or service. It rather aims at improving the attitude of a particular company towards the environment and above all, to control the impacts on the environment and maintain the compliance with the laws on environmental protection. In well established social environments, companies adopting these principles of sustainable development should be able to achieve additional marketing advantages. A company presenting its impacts on environment in such a way does no longer worry about inspectors, but is rather concerned with the never-to-be resolved issue: are there possibilities to improve the management of the environment and if so, how to approach to resolving it ?

The essence of the issue to organize the company to be compliant with the principles underlying for this certificate is clearly presented in the replies to the rhetorical questions.

What is not covered by the ISO 14001 Certificate acquired?

It certainly does not exclude the chance of adverse impacts on the environment during the operation of that company. On the other hand, it means that the company is aware of its actual and potential risks and is ready to undertake the commitment for management in a sustainable way and improve the issue. In no case will such company leave an individual area to a mere coincidence, which is a safe way of preventing negative impacts on the environment.

What should an ISO 14001 Certificate not mean?

The certificate acquired is not just another occasion for celebrating at the time of awarding. That is in fact a public act by which the company announces its determination and capability to qualify for contemporary management principles open to communication with the public (accepting their initiatives, critical comments, etc.) and change its conduct in accordance with that. Such sample companies with a pro-active operation are entitled to expect from the State to re-establish such conditions in the business environment that will encourage pro-active conduct in a number of business

entities. The transport of dangerous goods by road is a good example of a complex area that appeals to all the parties involved to deal with this issue in a responsible way, in view of protecting the entities participating in this process and as a result, assure better safety in general.

The EMS-compliant operation is successfully gaining ground in the environments where the rule of law has become established and respected, in practice reflecting the efficiency in general. Underlying factors for maintaining such a condition range from the level of development and maturity of the entire administrative structure in the given country to the properly designed legislative baselines. In other environments lacking the efficiency on the part of the State, the interest and commitment of the businesses for regulating their operation in line with these guidelines is on a much lower level.

Figure 3 shows the segments and benefits brought by the EMS establishment, or the ISO 14001 certificate award respectively. The advantages range from the internal position of the company and contribute to the improvement in performance up to the external corporate image as perceived by the customers, which should yield advantages over the competitors. The prerequisite for such an achievement is the underlying positive business environment that rewards the efforts of businesses for safety and achieving compliance with the environmental issues.

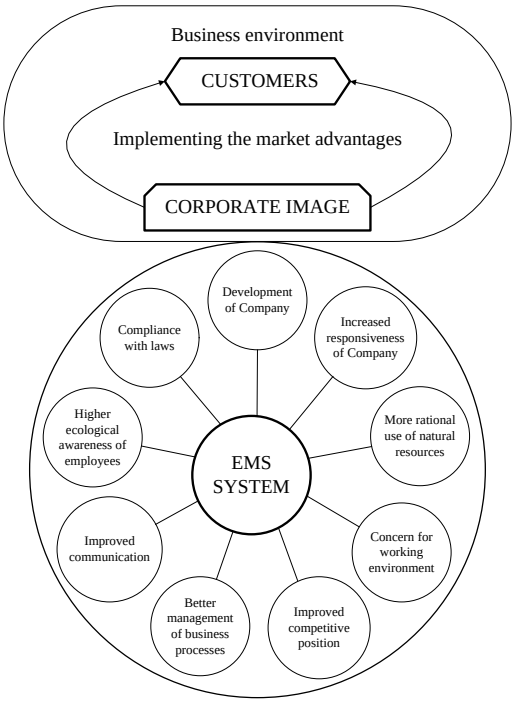

Fig. 3. Benefits of establishing environmental management system in a company
Rys. 3. Korzyści wynikające z wprowadzenia systemu zarządzania środowiskiem w przedsiębiorstwie

3. RESPONSIBLE CARE PROGRAME (RC)

The Responsible Care is the international programme of voluntary initiative by the chemical industry. The initiative was born in 1981 in Canada and was gradually taken over by the chemical industry globally. In fact, the name already uncovers the aim of chemical industry which encourages responsible treatment of employees and the environment within the scope of the initiative and in its widest sense. It is about introducing good practices, usually through management systems and especially in the field of safety at work, protecting the environment, and careful and safe handling of the products of chemical industry. RC is a global chemical industry initiative to implement continuous improvement of situation in mentioned areas and at the same time encourage individual companies to open communication about its activities and achievements with a sustainable and responsible social reporting.

Why is such an important aspect of communication? Quality products and services and low cost are no longer sufficient. Customers want to know if their suppliers also look after the environment and

their employees. Companies can actively report on their activities of enforcement guidelines of sustainable development realized a little more visibility. When the road carriers operating within the chemical industry and RC program is certainly reflected in the positive effects of the commercial area.

The approach and mode of advertising in the road transport market, aiming to acquire new customers or just retain the share in their existing customers, can vary from one carrier to another. It certainly depends on the characteristic of the service provided, but above all, it differs according to the target customer to be reached.

On the ground of the different type of goods carried in conventional road transport and in dangerous goods transport, there is certainly a difference in advertising of these services. The marketing and advertising of the dangerous goods transportation has to adapt to the complexity of its area and to the typical structure of the customers.

A carrier holding a large number of smaller trucks or delivery vans can post and advertisement offering to convey any goods of all sizes to any consignee, anywhere and at any time. Actually, this is not completely true, since there are certain restrictions in the height limit and weight, as well as the time limits depending on the local areas that regulate the hours when transport is (not) permitted. But in spite of all these limitations, such commercial advertising offering acceptable prices sounds persuasive enough to attract potential clients.

On the other hand, there are carriers which operate mainly in the transport of liquid chemicals. It would certainly not be smart to advertise their services through mass media and in the manner as stated above. Their current clientele, as well as potential prospects, operate in chemical industry or petroleum products distribution, therefore their approach to advertising in the business-to-business marketing is more demanding and based on highlighting their strengths (advantages) over other providers that promise benefits for all participants in the business involved. Their advertising aims to present these benefits so that they are perceived by the social environment on the larger scale, which should in turn encourage the carriers to maintain and improve their good organization and transparent operation as an important contribution to higher safety of such transports and therefore to higher safety of road traffic in general.

In order to present an individual carrier of dangerous goods to the target segment in a given environment properly, appropriate communication has to be established with all levels of public and with all entities cooperating, by establishing an adequate public relations service (PR). Such approach is based upon the policy expecting any public addressed by advertising (customers, suppliers, supervisory authorities, employees, local communities and others) get a favourable opinion on the advertising company. ”The company must put an effort to present itself as a good, reliable partner, possessing numerous additional qualities beyond those required for the implementation of their core services in the market. Each carrier shall clearly express its concern for environmental issues, aiming to minimize the environmental pollution and emissions to the atmosphere and watercourses; it shall express the care for adequate and well-organized parking facilities instead of just leaving their fleet at any place that is big enough to accommodate the vehicles; it shall express an aspiration for transparent operation and clear goals for the future” [1].

The company shall present its intentions factually and objectively to the public and by this, convince the public about their sustainable work and good care for common social values. In practice, the best way for communicating that the carrier has regulated its operation in line with these requirements is by adopting appropriate standards, and getting certification according to them. These standards are quite numerous, but we will address only the well-established standards, broadly accepted by our carriers of dangerous goods.

The responsible care begins with the simple principle of strict compliance with the legislation applicable to the defined field. To this end, has developed a verification system SQAS for haulers in the chemical industry involved in the RC program.

4. SAFETY AND QUALITY ASSESSMENT SYSTEM – SQAS

The Safety and Quality Assessment System (SQAS) is a uniform, internationally recognized system for the assessment of quality and environmentally friendly service providers, who supply the

chemical industry in the first place. Within their commitment to the Responsible Care Programme, the major chemical plants as customers of these services are interested in safe transportation of chemicals to reach their buyers. To be able to do that, they needed to employ specialists who were working with audits of suppliers on a permanent basis. That meant additional cost in the production.

For the providers of transport services, that procedure was very time-consuming and expensive, after all, the need to prove the quality level of their services to each customer separately and accordingly, ascertain their eligibility as a provider in the logistical chain of ADR transports.

In order to avoid the above indicated operating and cost-related difficulties, the European Chemistry Industry Council (CEFIC) developed a uniform system for the assessment of suppliers within the standard issues defined. All the elements involved in the transport of chemicals (dangerous substances) and providers thereof are checked in this way. In addition, a detailed insight into the Provider's capability to assure the required quality and implementation of logistics services (transportation of chemicals), safe for human health and environment, can be obtained. That in turn facilitates the chemical companies the selection of Contractors for placing orders for logistics.

Such an examination (audit) does not concern the issuance of the certificate, as it is the case in the ISO standards series (ISO 9000, ISO 14001), but rather an in-depth report on the examination performed according to standardized questions, undertaken by an independent and qualified auditor. The report is sent to the entity being assessed (the auditee). Through the auditee, the report is available to the auditee's current or potential users of logistics services also in other channels available in the system. The takers of transport services need not check certain carriers whether they satisfy all the requirements for dangerous goods transportation, but only establish their eligibility on the basis of such certificate acquired.

On the basis of the audit questionnaire, an interested carrier who fills it out can obtain its self-assessment. In such a case, the assessment is the indicator of the factual condition and can be taken as the basis for selecting the critical points to be checked and improved. Moreover, that is also the groundwork for continual improvement of the condition within the Company. Having acquired the assessment under the SQAS criteria, the Company could increase its competitive profile. Customers gain an independent and comprehensive insight into the quality of the service of the responsible. carrier, which should encourage customers to work with such companies instead of those who cannot provide such an assessment. It should be noted that according to the SQAS criteria, only those carriers are audited who are in the business of dangerous goods transportation for chemical industry. There are no such audits in the conventional goods transport.

Since 1995, when this system was developed, until 2004 there were more than 600 European enterprises in the land transport business assessed under the SQAS system. The first Slovenian carrier acquired SQAS certificate in September 2005.

In Europe, the demand for an adequate tool to assess, or check the adequacy of organization in carriers in road transport before their inclusion in the network of chemical industry for ADR transportation existed for a long time. Such an approach was a follow-up of the underlying goal, i.e. to build up the safest and best fit (environmentally friendly) transportation of dangerous goods from the Manufacturer to the customer. The prerequisite for the implementation of an efficient system for the assurance of safety is a consistent compliance with the rule of law. Such ideas were accepted in Slovenia only after the accession to the EU and integration into the global environment.

The introduction of the standardization of operations (ISO 14001, SQAS) is an upgrade of the underlying requirement for sustainable development in the area that allows for providing transport services in a safer way and more friendly for the environment. Figure 4 displays how the development profile of the social environment influences the well-established condition and organization of the business environment and thereby increases the interest of enterprises for the standardization of operations.

In low-level social environments, the occurrence of enterprises interested in standardization is rather rare. Their efforts to achieve such a modus operandi are forward-looking in the long run and focused on pro-active policies or conduct, aiming to bring about certain shifts in their broader environment and create the conditions in which the organized state of business could grow into the criterion that would yield benefits in the market. If the broader environment does not support such

trends, the attempts of individual entities are quite unproductive and despite careful planning and efforts, they yield little return. As the development profile of the social environment improves, the efforts for improved safety and enhanced concern in ecology and sustainable development rise, in general, and so does the standardization of operations as an integral part of the business environment. It brings economic benefits that are sufficient to raise the interest

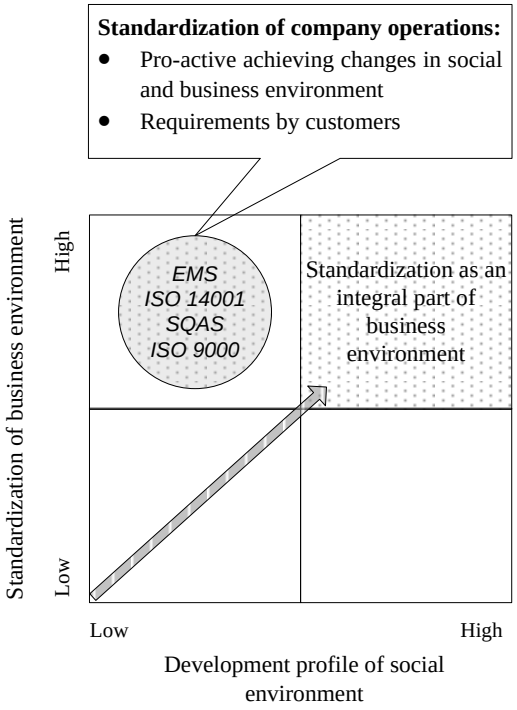

Fig. 4. Impact of development profile of the social environment on the standardization of business environment
Rys. 4. Wpływ profilu rozwoju środowiska społecznego na standardy otoczenia przedsiębiorstwa

5. CONCLUSION

The standardization of operations is not a self-serving goal, but it is rather dedicated to establishing an adequate control system over the business functions in a company and leading towards organizing the operations in the enterprise. By systemic solutions and transparency, it offers a display of the objective condition within the company for the interested public in the environment, which should contribute to the success of such an enterprise, in the long run.

The paper presents the impact of sustainable development guidelines and RC on the operation of haulers in dangerous goods transport. Ensuring the compliance of all the participants in the process of dangerous goods transport with the laws is no longer the basic goal ensuring the required level of safety and environmental protection. The efforts are now focused on the upgrading of this basic condition - the introduction of certain standards in the operation of enterprises. These are the tools that support the orderly organization of operations and effective control over the adverse impact on the environment. In well-established social environments, such guidelines bring market benefits sufficient enough to attract enterprises, and serving as the guiding principle for the protection of natural environment in accordance with sustainable development baselines.

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