ENVIRONMENTAL REPORT

Working together for environment

2010
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Graphics using photos from the 5th edition of the PKN ORLEN SA “Catch the Hare” contest.
Dear Sir or Madam,

I have the pleasure to present the second edition of PKN ORLEN Capital Group Environmental Report describing the ORLEN Group Companies environmental performance in 2010, future possibilities for sustainable development and the challenges facing our Companies.

According to the previous edition of the Report, one of the basic challenges for the ORLEN Group was to comply with the principles of sustainable development while at the same time respecting the legally determined environmental conditions. I may say now that we have lived up to that challenge. We have managed to achieve efficient coordination of pro-environmental activities on the Group level, irrespective of the nature of the operations performed by the individual Companies.

Together with the ORLEN Group Companies, we aimed at ensuring top environmental protection standards. Aware of the impact of their operations and feeling responsible for the quality of the natural environment, the Group Companies did their best to meet the requirements of environmental legislation, identify possible risks and predict future developments. There are new challenges ahead of us associated, among others, with stricter industrial emission standards and the new significance of the BREF reference documents concerning the Best Available Techniques.

Last year, we also implemented a number of preventive actions, limiting the environmental impact of the ORLEN Group Companies. These actions included, in particular, investing in modernisation of fuel storage tanks in order to protect soil against petroleum product penetration and assembling petroleum derivative separators as well as certain innovations, such as market launch of a new, more environmentally friendly product – Platinum Ultor Futuro motor oil.

Moreover, we continued the process of removing oil derivatives from soil and water. The Companies where contamination was reported received funds to implement certain remedy measures. In 2010, many of the ORLEN CG Companies, including the PKN ORLEN SA. Płock, were involved in soil and water reclamation activities.
We exchange knowledge and experience through united efforts aimed at preserving the natural environment. We approach environmental protection issues from the broad perspective of the entire Capital Group. There are many possibilities to explore, such as closing the waste cycle: waste generated by one Company can be recovered by another Company.

I am sure we are tending in the right direction, which is proven by the awards and distinctions received by our Companies, such as: the “Teraz Polska!” (“Poland Now!”) promotional logo awarded to Rafineria Nafty Jedlicze SA for the technology of “Modified catalytic waste oil regeneration hydrogen process” or the “Environmentally Friendly Company” title awarded to PKN ORLEN SA for compliance with the environmental law and implementation of a pro-environmental strategy.

The combined environmental efforts of the Capital Group Companies yield the expected results of limited environmental impact. I would like to thank all the Companies for contributing to the quality of the natural environment and to encourage them to continue their pro-environmental efforts.

Jacek Krawiec
President of the PKN ORLEN Management Board
Continuing the initiative undertaken last year, we proudly present the second edition of the Environmental Report developed by the Environmental Protection Office at Polski Koncern Naftowy ORLEN SA. The same as last year, the purpose of this Report is to present information concerning the range and extent of the environmental impact of the ORLEN Capital Group Companies as well as their efforts and achievements related to limiting that impact. The current edition of the Report was possible thanks to the involvement of the ORLEN Group Companies, which prepared and provided the necessary information, for which we are very grateful.

Our intention was to present the typical issues associated with environmental protection in the respective Companies, which was not easy due to major differences between them. Our Group incorporates power engineering, fuel and chemical facilities. There are also fuel distribution and trading companies as well as companies from the service sector.

For obvious reasons, the Report focuses on numbers that reflect the scale of our environmental impact. There is also information on projects making the core business of the respective Companies less environmentally onerous. We would like to highlight the efforts undertaken by all the Companies to adapt their business to the changing requirements of the environmental law. Among other things, the following Polish laws were amended last year: the Environmental Protection Law, the Water Law and the Waste Law. Consequently, the provisions of certain implementing acts issued pursuant to these laws also changed. Moreover, the Batteries and Accumulators Law came into force as well as legal regulations concerning facilities generating electromagnetic fields.

However, the most important event in 2010 from the perspective of EU enterprises was publication of the Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control), which introduced significant changes, both in terms of the environmental impact standards (emission standards) and the requirements concerning the process of obtaining integrated permits, and strengthened the role of the BREF reference documents.
Another equally important area is the greenhouse gas emission allowance trading scheme of the Community. The functioning of the scheme was radically changed by the Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community. The most important supplement to that Directive published in 2010 is the Commission Decision of 24 December 2009 determining, pursuant to Directive 2003/87/EC of the European Parliament and of the Council, a list of sectors and subsectors which are deemed to be exposed to a significant risk of carbon leakage. Another document was the Commission Decision of 9 July 2010 on the Community-wide quantity of allowances to be issued under the EU Emission Trading Scheme after 2012 (notified under document C(2010) 4658). Meanwhile, 2010 was a year of developing a method for distributing free allowances among the eligible facilities.

Our future environmental reports will report on activities undertaken by the CG Companies to adjust their operations to the tough new requirements.

Authors
We operate on the basis of the required environmental permits

In order to function in the context of ever changing environmental law, the ORLEN CG Companies have to be up-to-date with drafted and implemented regulations and adjust to the new requirements. This often means the need to update the current permits or to apply for and obtain new ones.

When it comes to integrated permits, a number of modified permits were obtained, in particular in the areas of emission to the air and waste management. Some of the Companies, such as ORLEN Lietuva and ANWIL SA, were obliged to replace the previous integrated permits with their new equivalents. The integrated permit for the oxo alcohol plant expired due to termination of production at the Czech UNIPETROL RPA s.r.o. at the end of March 2010.

**Fig. 1.**
Number of the Capital Group facilities with integrated permits ORLEN

![Bar chart showing the number of facilities with integrated permits in different countries.](chart.png)
Moreover, last year, the companies obtained a number of modified sectoral permits for the respective components of environment. The recently amended Waste Law makes it possible to obtain a decision approving a waste management programme with respect to waste generated as a result of provision of construction, demolition or renovation services, tank or device washing services, or cleaning, maintenance or overhaul services, as well as processing of waste containing asbestos in mobile devices, i.e. generated in different places and different facilities to which the entity performing the aforementioned works does not have a legal title. At present, it is possible to obtain a single permit issued by a competent authority, valid in the entire territory of Poland. Before, a number of different permits were required.

ORLEN Centrum Serwisowe Sp. z o. o. has already benefited from that possibility, obtaining a single waste generation permit, which definitely simplifies compliance with the formal requirements associated with the provision of services in various areas of the country.

The Companies were many times audited by the environmental protection authorities (Polish Regional Environmental Protection Inspectorates or Marshal Offices, or competent local authorities in the Czech Republic and Lithuania).

In 2010, the basic production facilities operated by the CG Companies were audited 110 times in total. The audits concerned mainly compliance with the environmental protection regulations and the requirements established in relevant permits. As a result of those audits, 22 post-audit recommendations were issued, no fines were imposed and no fees were increased.
We try to present the impact our companies have on the surrounding environment in the most measurable way.

The quality of air in the zone surrounding the ORLEN Capital Group production facilities in Płock is monitored. The monitoring includes concentration measurements of substances typically emitted by those facilities, i.e. SO₂, CO, NOx and specific hydrocarbons.

All the Companies obligated to measure air emissions perform such measurements. 16 of the ORLEN CG Companies monitor the land and water environment. In the case of Rafineria Trzebinia SA, local monitoring covers the entire area of the Rafineria Trzebinia Capital Group and is performed using internal means.

On the other hand, CESKA RAFINERSKA a.s. and UNIPETROL RPA s.r.o. have their monitoring performed by UNIPETROL a.s. under the reclamation programme.

The CG Companies monitor their waste water, too. The quantity, quality and composition of waste water is monitored in order to ensure that the parameters do not exceed relevant limits. This way, it is possible to evaluate the performance and parameters of devices and to warn of emergency situations.

The respective measurements show that the air quality standards as well as the waste water quantity, quality and content standards are met.
3.1. Substances emitted to the air

Due to the broad range of their operations, the CG Companies emit various types of substances to the air. The figures below present in particular substances typical of the combustion processes (SO₂, NOₓ, CO, CO₂, dust) due to their major share in global emission.

Fig. 2.
Substances emitted to the air

Table 1.
Selected air emissions in 2010

<table>
<thead>
<tr>
<th>Substance</th>
<th>Volume [Mg]</th>
<th>2009</th>
<th>2010</th>
<th>Up/down trend [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulphur dioxide</td>
<td>46,981</td>
<td>44,405</td>
<td>-5.48</td>
<td></td>
</tr>
<tr>
<td>Nitrous oxides</td>
<td>17,826</td>
<td>18,471</td>
<td>3.62</td>
<td></td>
</tr>
<tr>
<td>Carbon monoxide</td>
<td>4,002</td>
<td>4,516</td>
<td>12.84</td>
<td></td>
</tr>
<tr>
<td>Carbon dioxide</td>
<td>14,766,432</td>
<td>14,793,692</td>
<td>0.18</td>
<td></td>
</tr>
<tr>
<td>Dust</td>
<td>2,273</td>
<td>2,051</td>
<td>-9.77</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td><strong>14,837,514</strong></td>
<td><strong>14,863,135</strong></td>
<td><strong>0.17</strong></td>
<td></td>
</tr>
</tbody>
</table>
Fig. 3.
Emission structure of specific substances in 2010

PM generated by fuel combustion process corresponds to more than half (56%) of the total amount of this pollutant.

Table 1 above reports an increase in the overall volume of emissions, even though emission of certain substances dropped.

Sulphur dioxide emission dropped, in particular in the following Companies:
- Lower sulphur dioxide emission were reported in:
  - ANWIL SA,
  - Paramo a.s.,
  - Unipetrol Doprava s.r.o., where total gas emissions dropped by 37.8 % in the annual scale.
Dust emissions also dropped, in particular in the following Companies:

- Lower dust emission were reported in:
  - ANWIL SA,
  - ORLEN Lietuva, where total emissions dropped by 3.9% compared to 2009.

We do not exceed the limits determined in relevant permits

The aggregate increase in carbon monoxide and nitrous oxide emissions was generated by PKN ORLEN SA and ANWIL SA due to changes in the nature and intensity of production as well as the quantity, quality and structure of fuel used in the combustion process. On the other hand, other companies reported lower carbon monoxide and nitrous oxide emissions, in particular:

- Lower nitrous oxide emission:
  - Basell Orlen Polylefins Sp. z o.o.,
  - SOLINO SA.

- Lower carbon monoxide emission:
  - Basell Orlen Polylefins Sp. z o.o.,
  - ORLEN Lietuva.
13 of the CG Companies continue to apply compounds from the controlled substance group. The most common among them is the R22 Refrigerant used mainly in air conditioners. Pursuant to the Regulation (EC) 1005/2009 of the European Parliament and of the Council of 16 September 2009 on substances that deplete the ozone layer, the R22 primary agent is banned beginning with 1 January 2010. Currently, only regenerated agent is used.

Environmentally friendly HFC refrigerants are gradually introduced, such as: R407C, R410, R417A, R507. Another controlled substances, carbon tetrachloride (CCl4) previously used for lab analyses, is also gradually eliminated.

Other efforts are also taken in order to eliminate substances that deplete the ozone layer, such as:

- replacing air conditioner refrigerants with their environmentally friendly equivalents – the companies that use air conditioners replace those refrigerants during regular check-ups,
- removing air conditioners that use controlled substances or replacing them with environmentally friendly devices (for example at UNIPETROL RPA s.r.o.).

The refrigerants recovered as a result of those measures are collected only by authorised operators.
3.2. Noise and electromagnetic field emissions

14 of the CG Companies control noise emission in the vicinity of their facilities. Some of them, such as CESKA RAFINERSKA a.s. monitor noise levels at the boundaries of their premises, which, however, makes it difficult to identify the exact sources of emission and the share of the respective units in total emission. The same is the case with PKN ORLEN SA, but at the moment the Company does not measure noise levels around the plant. In 2006, the Company implemented a noise source database in the IMMI system. The database is updated on an annual basis, taking into account any new, upgraded or disconnected sources of noise emission.

In 2010, ANWIL SA and PKN ORLEN SA reported new noise emission sources due to start-up of new production facilities. However, according to analyses performed in the IMMI system, the admissible levels of noise emission to the environment are not exceeded.

Electromagnetic field sources regulated by the provisions on electromagnetic fields are located within three Polish Companies (ANWIL SA, Inowrocławskie Kopalnie Soli SOLINO SA and Petrolot Sp. z o.o.) and two foreign Companies (UNIPETROL RPA s.r.o. and ORLEN Lietuva). The actual electromagnetic field levels are much below the admissible limits, which is proven by relevant measurements of electromagnetic field emissions.

We keep the environmental quality standards around our facilities
3.3. Water and waste water management

Water consumption

Overall, the CG companies consumed more than 68,169,000 m$^3$ of water in 2010, representing a 6% drop compared to 2009. In ORLEN Lietuva, water consumption dropped by 13.41% compared to the previous year. Approximately 92% of total water consumption was from surface water sources. The other 8% of water was derived from ground water sources and water supply networks.

Fig. 4.

Water consumption per source

The companies that achieved the best results in reducing their water consumption in 2010 were:

- ORLEN Centrum Serwisowe Sp. z o.o.,
- ORLEN KolTrans Sp. z o.o.,
- ORLEN Laboratorium Sp. z o.o.,
- PETROLOT Sp. z o.o.
Waste water discharge

A minor increase (2.87%) was reported in the total volume of waste water discharged in 2010.

Table 2.

<table>
<thead>
<tr>
<th>Discharge volume [m³]</th>
<th>Up/down trend [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2009</td>
</tr>
<tr>
<td>Total</td>
<td>45,307,202</td>
</tr>
<tr>
<td>Industrial waste water</td>
<td>18,608,157</td>
</tr>
</tbody>
</table>

The companies that reported the highest increase in the volume of waste water discharge in 2010 compared to 2009 were:
- ORLEN Inowrocławskie Kopalnie Soli „SOLINO" SA,
- ORLEN Budonnaft Sp. z o.o.,
- ORLEN Oil Sp. z o.o.,
- PARAMO a.s.
In terms of industrial waste water discharge, the highest increase was reported by:
- ORLEN Oil Sp. z o.o.,
- Rafineria Trzebinia SA,
- PARAMO a.s.

Fig. 6.
The respective types of waste water discharged by the ORLEN CG Companies by percentage share.
Most CG Companies (appr. 94%) discharge waste water to surface waters, and the remaining 6% is discharged to waste water networks. Only one company discharges waste water to a holding tank.

Fig. 7.
Waste water discharge per type of discharge

The following figure presents the load of the respective substances in discharged waste water. The main substance (more than 56%) are chlorides. Sulphates represented over 18% and COD and suspended solids – more than 11% of the total volume. The other compounds did not exceed 2% of the total volume.

Fig. 8.
The load of the respective substances in the discharged waste water by percentage share
3.4. Waste management

The operations of all the analysed companies involve generation of waste. A vast majority of the Companies (86%) has implemented a waste sorting programme. Seven Companies collect waste and six Companies transport waste. The following two Companies operate landfills:

- **ORLEN Eko Sp. z o.o.** operates a hazardous waste landfill, where the waste generated by the Hazardous Waste Thermal Treatment Unit is neutralised.
- **ANWIL SA** operates a landfill for non-hazardous and neutral waste with separate containers for hazardous waste.

### Table 3.
Waste volumes generated by the ORLEN Capital Group in 2009–2010

<table>
<thead>
<tr>
<th></th>
<th>Volume [Mg]</th>
<th>Up/down trend [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2009</td>
<td>2010</td>
</tr>
<tr>
<td>Total</td>
<td>317,488</td>
<td>416,899</td>
</tr>
<tr>
<td>Hazardous waste</td>
<td>98,101</td>
<td>122,016</td>
</tr>
</tbody>
</table>

The largest waste group, in terms of weight, are solutions and sludge from the process of ionic exchanger regeneration (19 09 06) and sludge containing hazardous substances from non-biologic industrial waste water treatment processes (19 08 13*). They are generated mainly by ORLEN Lietuva. The fact that hydration of that waste is 97-90% affects the huge total weight of waste, and that is why OLT has to deal with the challenge of dewatering the above waste groups.

Waste is disposed or recycled by the CG Companies, either using their internal means or by authorised waste treatment companies. The most popular waste disposal method is thermal treatment, certain types of waste undergo physicochemical treatment. Another method, used e.g. by ORLEN Lietuva, is surface retention (dumping waste in pounds or lagoons). The most typical recycling method is waste processing or other methods to enable total or partial re-use of waste. Some companies have their waste collected by authorised entities, without any feedback as to the disposal or recycling methods applied by those entities. A certain portion of waste is directly dumped in landfills.
31 December 2010 was the statutory deadline to complete disposal of PCB waste. In 2009, only three of the CG companies still had this type of waste, all of which was disposed of in 2010.

Nine of the CG Companies have objects containing asbestos within their facilities (e.g. boards, roof covering, insulation, gaskets etc). Even though the statutory deadline to remove asbestos is far away in the future, most companies are already getting rid of asbestos. This involves, most typically, removal of the asbestos elements and replacing them with other technologies or materials.

11 of the analysed companies have to comply with relevant packaging management requirements. The Polish Companies comply with the statutory packaging recycling and disposal obligations by having their packaging waste removed by external companies. The Czech and Lithuanian companies recycle and dispose of a part of their packaging waste individually and have the other part removed by external companies. UNIPETROL RPA s.r.o. contracts removal of the entire volume of its packaging waste to a third party operator. More than 68% of the 15,071 Mg of packaging released to the market last year by the CG Companies had to be disposed/recycled.
We are in the European Pollutant Register

2010 was the fifth year of the European Pollutant Release and Transfer Register. The companies whose operations require reporting and which exceeded the admissible thresholds of release and transfer of pollutants, submit information concerning that data to competent authorities.

14 of the CG companies are obliged to report to the PRTR. The number of reported pollutants released and transferred in waste water as well as to the air was the same over the last two years.

Fig. 9. Number of substances reported to the PRTR

None of the companies exceeded set levels for pollutant release to soil.
The PRTR reporting involves also waste transfer. The overall volume of waste transferred in 2010 was slightly lower than in the previous year, while the ratio of the respective types of transfer remained on the same level.

We comply with the emission reporting obligations

Fig. 10.
Domestic and international transfer of hazardous waste and non-hazardous waste transfer

- **2009**
  - **74%** Transfer of non-hazardous waste
  - **17%** Domestic transfer of hazardous waste
  - **9%** International transfer of non-hazardous waste

- **2010**
  - **75%** Transfer of non-hazardous waste
  - **16%** Domestic transfer of hazardous waste
  - **9%** International transfer of non-hazardous waste
We participate in the emission allowance trading scheme

2008–2012 is the second period of the carbon dioxide emission allowance trading scheme in the Community. Nine of the ORLEN CG Companies participate in emission allowance trading. Their facilities have the required permits to participate in the trading scheme. Overall, valid permits are held by 10 facilities owned by 6 Polish and 4 foreign Companies of the ORLEN CG.

All facilities had their annual CO₂ emission reports positively verified

Table 4.
Average annual number of CO₂ emission allowances and their utilisation by the respective CG companies in 2009–2010

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Allocated allowances</td>
<td>Actual emission [Mg]</td>
</tr>
<tr>
<td>PKN ORLEN SA</td>
<td>6,579,147</td>
<td>6,062,506</td>
</tr>
<tr>
<td>ANWIL SA</td>
<td>260,976</td>
<td>184,789</td>
</tr>
<tr>
<td>ORLEN Asfalt Sp. z o.o.</td>
<td>48,951</td>
<td>30,593</td>
</tr>
<tr>
<td>ORLEN Oil Sp. z o.o.</td>
<td>21,418</td>
<td>19,795</td>
</tr>
<tr>
<td>Rafineria Nafty Jedlicze SA*</td>
<td>55,076</td>
<td>53,964</td>
</tr>
<tr>
<td>Rafineria Trzebinia SA*</td>
<td>104,063</td>
<td>107,193</td>
</tr>
<tr>
<td>PARAMO a.s.</td>
<td>198,900</td>
<td>173,630</td>
</tr>
<tr>
<td>UNIPETROL RPA s.r.o.</td>
<td>3,120,878</td>
<td>2,558,063</td>
</tr>
<tr>
<td>CESKA RAFINERSKA a.s.</td>
<td>889,592</td>
<td>806,265</td>
</tr>
<tr>
<td>ORLEN Lietuva</td>
<td>2,188,429</td>
<td>2,102,763</td>
</tr>
<tr>
<td>Subtotal for CG – POLAND</td>
<td>7,069,631</td>
<td>6,458,840</td>
</tr>
<tr>
<td>Subtotal for CG – FOREIGN COMPANIES</td>
<td>6,397,799</td>
<td>5,640,721</td>
</tr>
<tr>
<td>TOTAL</td>
<td>13,467,430</td>
<td>12,099,561</td>
</tr>
</tbody>
</table>

* Rafineria Nafty Jedlicze SA and Rafenergia – jointly.
* Rafineria Trzebinia SA and Energomedia – jointly.
Fig. 11.
CO₂ emission allowances allocated to the ORLEN CG Companies in 2009–2010

Fig. 12.
Utilisation of CO₂ emission allowances by the ORLEN CG Companies in 2010 and average total utilisation [%] of CO₂ emission allowances
The refinery facilities and combined heat and power plant in Jedlicze received additional allowances under the National Allocation Plan. ORLEN Lietuva also received additional allowances under the NAP II.

All the ORLEN Capital Group facilities had their reports on annual CO₂ emission positively verified by external entities.

In 2010, the average annual allowance allocation for the ORLEN Capital Group rose by 1 566 592 allowances. According to the verified reports, 88.48% of the allowances were utilised. This value is similar to the 2009 result (89.84%).

In 2010, ORLEN Oil Sp. z o.o. was allocated the same number of CO₂ emission allowances as in 2009, but their utilisation rate went up by 18.63% (92.42% in 2009, 111.05% in 2010). The company did not buy additional allowances for 2010.

Most companies managed to stay within the limit of the allowances allocated to their respective facilities. The only exception is ORLEN Oil SA.

Four Polish Companies and three foreign Companies actively participated in emission allowances trading (total number of traded allowances – 3,629,891).
We care about the purity of soil and water

Due to the presence of pollutants in soil and water, for the most part generated back in the previous century, we take all the reasonable efforts not only to minimise the risk for the surrounding environment but also to continue long-term decontamination processes. The companies whose premises are polluted receive special funds from so-called environmental reserves to take adequate remedy measures. The Czech Ministry of Finance provides financing in the form of so-called environmental guarantees for removal of damage caused before privatisation of the Companies in 1990s. At the moment, the Czech government is preparing so-called “supertender” for the Unipetrol Group Companies aimed at streamlining the reclamation processes.

In 2010, ORLEN CG Companies continued land and water reclamation efforts within the facilities of: Rafineria Nafta Jedlicze SA, PKN ORLEN SA Plock Plant, ORLEN Lietuva, UNIPETROL RPA s.r.o., CESKA RAFINERSKA a.s., PARAMO a.s., BENZINA s.r.o. and UNIPETROL a.s.
We pay environmental charges

The total amount of environmental charges paid by the Polish CG Companies in 2010 approximated 6 milions €. Those charges were due to:

- air emissions of gas and dust,
- water consumption,
- waste dumping,
- waste water discharge.

The following Figure presents the respective environmental charges by percentage share.

Fig. 13.
Structure of environmental charges paid by the Polish CG Companies in 2010

The report includes only data concerning charges imposed by relevant legislation and paid to the competent authorities.
The charges were lower compared to the previous year. The total amount of charges paid in the Czech Republic in 2010 was 24 milions CZK. ČESKÁ RAFINERSKÁ a.s. reported a major drop in all the components of environmental charges.

**Fig. 14.**
Structure of environmental charges paid by the Czech CG Companies in 2010

- **63%** Air emission of gas and dust
- **15%** Waste dumping
- **12%** Waste water discharge
- **10%** Compensation

The charges paid in Lithuania approximated 8.5 milions LTL. This figure is 30% less than the charges paid in the previous year. The drop was mainly due to lower rates of charges for:
- air emission of gas and dust,
- waste water discharge.

**Wykres 15.**
Structure of environmental charges paid by the Lithuanian CG Company in 2010

- **99.1%** Air emission of gas and dust
- **0.9%** Other
- **0.6%** Water consumption
- **0.3%** Waste water discharge
8.1. Pro-environmental projects

In 2010, PKN ORLEN Group companies undertook various projects to reduce their environmental impact. The most important of them include:

**ANWIL SA**
- Construction of the medium-pressure steam boiler unit on line A of ammonia unit. The investment influenced reduction of natural gas consumption by approximately 369 Nm³/h, decrease of CO₂ emission (by approximately 725 kg/h) and reduction of environmental charges.
- Modernisation of two production lines at the demineralisation station. This resulted in reduction of hydrochloric acid and soda lye consumption by 75% and reduction of the amount of waste water by 50% as compared to the values reached by the lines before modernisation.
- Modernisation of the monitoring system of continuous exhaust gas emissions from EC. The effect is increased reliability of exhaust gas emission control and prevention of uncontrolled increases of exhaust gas emissions.

**SOLINO SA**
- Hydrogeological Monitoring of the Kopalnia Mogilno salt mine. The effect is prevention of salt release to ground waters.
- Modernisation of dedusting unit. The effect was reduction of dust levels in production facilities.
- A unit for technological discharges from the mining field of the Mogilno Mine. The effect is better protection of the ground and water environment.

**ORLEN Asfalt Sp. z o.o.**
- Overhaul works associated with replacement of insulation on the K-201 column, which resulted in reduction of heat emission to atmosphere.

**ORLEN Centrum Serwisowe Sp. z o.o.**
- Modernisation of the boiler room. The effect is replacement of heat medium from heating oil to gas and lower emission charges.
- Insulating the roof of the warehouse building in Opole. The result is lower heat loss and lower heat emission to the atmosphere.
- Purchasing new vehicles according to the EURO 4 and EURO 5 standards. The effect are lower depreciation costs and lower emission charges.
ORLEN Eko Sp. z o.o.
- In cooperation with EKO-MAZ Sp. z o.o. the Company initiated in December 2010 implementation of a municipal waste sorting system for PKN ORLEN SA facilities as well as a waste collection and transport system. The purpose of the system is to increase the volume of properly sorted municipal waste and thus reduce the volume of waste dumped at landfills.

ORLEN Oil Sp. z o.o.
- Market launch of new motor oil – Platinum Ultor Futuro. The oil was produced in Mid-SAPS technology, which reduces the content of sulphate ash, phosphor and sulphur.

ORLEN PetroCentrum Sp. z o.o.
- Modernisation of the fuel station in Slawno, construction of tight trays at the site of fuel reloading. This resulted in upgrade of the process for rainwater discharge from the territory of fuel reloading to the company’s storm drainage system and to stormwater treatment plant.

ORLEN Wir Sp. z o.o.
- Purchase and assembly of a pressure washing facility operating in closed system at the ORLEN Wir Sp. z o.o. garage. The effect is better prevention of soil pollution caused by uncontrolled washing of machines overhauled at the garage.

PETROLOT Sp. z o.o.
- Assembly of a petroleum derivative separator. The effect is reduced chances for outflow of oil derivatives through the sewer network.
- Modernisation of a beaker and separator unit. The effect is reduced amount of hazardous waste containing oil derivatives.

Rafineria Nafty Jedlicze SA
- Adjusting storage tanks to current legislation. The effect is better protection of soil from penetration of crude oil products by mounting leak-proof platforms, securing the interior of the tanks, installing a constant measuring system to monitor the fill-up level of the tanks, installing an anti-overflow system.
• Modernisation of the unit of water treatment for steam boilers. Environmental effect will consist in:
  – reduction of raw-water consumption by introduction of modern technological equipment and application of steam condensate to feed the unit. The process of water treatment for steam boilers will be fully automated and at the same time it will allow to reach adequate quality parameters,
  – reduction of the amount of generated waste and waste water, meaning a lower environmental impact. Construction of the above-mentioned state-of-the-art unit will enable resignation from outdated, high energy consuming unit for boiler water treatment generating significant amount of waste, including decarbonisation station and water softening station. The amount of hazardous substances discharged with waste water will be reduced as well as the amount of generated waste, including at the decarbonisation unit,
  – reduced demand for electricity and heat. Construction of a new water treatment centre for heat boilers based on modern technological solutions will lead to significant reduction of electricity and heat consumption,
  – obtaining the optimal parameters of boiler water, which will improve the quality and parameters of the heating steam, and thus performance of technological units.

ORLEN Lietuva
• Application of a new gas utilisation method in the torch system (GARO) enabling purification of gas from hydrogen sulphide and its re-transfer to the general production system. Modernisation of the torch system resulted in reduction of sulphur dioxide emission.
• Installation of a K-101 heat exchanger – higher energy efficiency.
• Liquidation of a landfill that was not compliant with the relevant legal requirements.

ORLEN Transport SA
• The company’s fleet was supplemented by 15 new tractor units compliant with the strict environmental protection requirements. 60 tractor units are currently leased. The tractor units are EURO 5 class certified, meaning reduced CO₂ emission.
UNIPETROL RPA s.r.o.
- Replacement of TEA pumping engines to improve efficiency and operational reliability of equipment,
- Modernisation of the sewer system at the Steam Cracker unit for protection against penetration of waste water to soil and ground water sources,
- Implementation of projects regarding waste water treatment – POX unit to increase the capacity and efficiency of waste water treatment process.

CESKA RAFINERSKA a.s.
- Modernisation of the waste water treatment plant to increase the capacity of the waste water treatment process,
- Extension of a hydraulic barrier to better protect soil and water,
- Renovation of the waste water network in both refineries to protect soil and ground water from penetration of waste water.

PARAMO a.s.
- Completed modernisation of the VR28 tank, construction of emergency tanks (with EU funds) to reduce the risk related to serious industrial failures,
- Ongoing modernisation of the PS0404 tank (with EU funds) to reduce the risk related to serious industrial failures,
- Reconstruction of the N11 and 12 tanks to reduce the risk related to serious industrial failures.

BENZINA s.r.o.
- The company reported a higher number of pro-environmental projects financed from Benzina’s own budget, e.g. completed modernisation of waste water treatment facilities at fuel stations meaning a lower pollutant load in waste water discharged to surface water and lower failure risk.
Apart from modernisation or construction projects, the companies undertook other types of pro-environmental activities:

**ANWIL SA**
- In association with Chemeko, the company operating the secretariat of the “Responsible Care” programme, Anwil organised the first edition of the “Environmental Academy of Skills”. The purpose of the project was to train teachers from primary schools and kindergartens in Włocławek in the field of environmental protection and to present the idea of the “Responsible Care” programme to them. The project also presented the nature and scale of the environmental impact of companies from the chemical industry and the efforts taken by ANWIL SA to protect the environment.

**ORLEN Centrum Serwisowe Sp. z o.o.**
- Participation in local initiatives – promoting environmental protection at fuel stations and fuel terminals, participation in the Scientific Board of the “Opolskie Eco-Forum”.
- Acquisition of new environmentally friendly maintenance and servicing equipment.
- Purchase and testing of the ATLAN TOL tank cleansing agent, The agent effectively removes grease and oil, it is biodegradable and non-toxic.

**ORLEN Eko Sp. z o.o.**
- The Company supports the Regional Centre for Environmental Education in Płock and the local branch of the League of Nature Protection – environmental nongovernmental organisation.
- The company promotes modern waste management technologies, by inviting guests to the Hazardous Waste Thermal Treatment Unit.
PKN ORLEN SA
• Introduction of a municipal waste sorting system.

The Company launched the municipal waste sorting system on 1 December 2010. Waste is sorted directly at the place where it is generated (offices, conference rooms, kitchen) before it is removed from the premises. The system has already been introduced in the Administration Centre, Procurement Office and Environmental Protection Office buildings and it will be gradually extended to the other buildings.

Waste is sorted by PKN ORLEN SA employees, after which it is moved by the cleaning company to plastic/paper/glass containers outside the buildings. Used batteries are collected in special boxes at the reception desk in each building (“REBA – “small cylinder”).

The purpose of the system is to increase the volume of properly sorted municipal waste and thus reduce the volume of waste dumped at landfills.

SHIP-SERVICE SA
• Efforts aimed at protecting the marine environment – collection of waste from vessels – cooperation with Port Administration and Maritime Offices; knowledge dissemination among agents and crews.
8.2. Environmental programmes

The following Companies: ANWIL SA, Inowroclawskie Kopalnie Soli Solino SA, Basell Orlen Polyolefins Sp. z o.o., ORLEN Asfalt Sp. z o.o., ORLEN Eko Sp. z o.o., UNIPETROL a.s., UNIPETROL RPA s.r.o., PARAMO a.s. and CESKA RAFINERSKA a.s. participated in the “Responsible Care” programme. The companies participating in the programme each year declare performance of specific tasks in the HSE area. In 2010, the total of 109 tasks were performed.

Fig. 16.

Areas covered by tasks performed under the ORLEN CG environmental programmes

- 26% Environmental protection
- 26% Health and health promotion
- 36% Other
- 18% Process safety and safety at work
- 2% Chemical substance trading

ANWIL SA
- Product Stewardship Programme for the Fertiliser Plant.

PKN ORLEN SA
- Cooperation with the Society for Wild Animals “SOKÓŁ”.
8.3. Our efforts are appreciated

ORLEN Centrum Serwisowe Sp. z o.o.

- **Golden 2009 Polish Business Leader Statuette** in the SME category for high business performance, top quality of services and environmental awareness.
- Diplomas and awards for market launch of products meeting high environmental standards, such as: innovative solutions for the ADAST MAJOR ECO 2010 model – a brand new vapour recovery control system with a monitoring and auto-calibration function, fully compliant with the Directive 2009/126/EC of the European Parliament and of the Council of 21 October 2009 on Stage II petrol vapour recovery during refuelling of motor vehicles at service stations.

PKN ORLEN SA

- **The “Environmentally Friendly Company” Title.**
  For the second time in history, PKN ORLEN SA was named to be an “Environmentally Friendly Company” (2009 and 2010 editions). In October, the certifying authority, European Forum for Environmental Responsibility “CERT”, audited the Environmental Protection Office, focusing on compliance with the EFC standards. The Company was positively evaluated and recommended for the EFC Certificate, which means that PKN ORLEN SA complies with the provisions of the environmental protection law and implements pro-environmental strategies. The “Environmentally Friendly Company” logo displayed at our fuel stations is a message to the public about the environmental awareness and achievements of PKN ORLEN SA in terms of implementation of the eco-strategy. The 2010 certificate enables the Company to continue using the EFC logo.

- **The “Polish Environmental Pantheon” statue and diploma.**
  An award in the category of the institutions supporting implementation of environmental protection projects – Let’s save peregrine falcon. It crowns the Company efforts aimed at improving the quality of Polish natural environment and another proof of its pro-environmental attitude. PKN ORLEN SA is entitled to use the “Polish Environmental Pantheon” title for 3 years. PKN ORLEN SA received that award for the first time in 2000 for being one of the first Polish companies to implement the ISO 14 001 Environmental Management System.
• Responsibility Laurel awarded to PKN ORLEN SA under the project of promoting “Social Responsibility Standards in Companies” for its “Responsible Care Programme”, which was recognised to be good CSR Practice.

Rafineria Nafty Jedlicze SA
• The “Teraz Polska!” („Poland Now!”) promotional logo. The logo was awarded to the “Modified catalytic waste oil regeneration hydrogen process” implemented and applied in Rafineria Nafty Jedlicze SA since 2007.
## List of analysed Companies

<table>
<thead>
<tr>
<th>Company</th>
<th>Address</th>
<th>www address</th>
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<tbody>
<tr>
<td>Anwil SA</td>
<td>ul. Toruńska 222, 87-800 Włocławek</td>
<td><a href="http://www.anwil.pl">www.anwil.pl</a></td>
</tr>
<tr>
<td>Basell Orlen Polyolefins Sp. z o.o.</td>
<td>ul. Padlewskiego 4, 09-402 Płock</td>
<td><a href="http://www.basellorlen.pl">www.basellorlen.pl</a></td>
</tr>
<tr>
<td>Inowroclawskie Kopalnie Soli “Solino” SA</td>
<td>ul. Św. Ducha 26a, 88-100 Inowroclaw</td>
<td><a href="http://www.solino.pl">www.solino.pl</a></td>
</tr>
<tr>
<td>ORLEN Asfalt Sp. z o.o.</td>
<td>ul. Chemików 7, 09-411 Płock</td>
<td><a href="http://www.orlen-asfalt.pl">www.orlen-asfalt.pl</a></td>
</tr>
<tr>
<td>ORLEN Automatyka Sp. z o.o.</td>
<td>ul. Chemików 7, 09-411 Płock</td>
<td><a href="http://www.orlenautomatyka.pl">www.orlenautomatyka.pl</a></td>
</tr>
<tr>
<td>ORLEN Centrum Serwisowe Sp. z o.o.</td>
<td>ul. Wrocławska 58, 45-701 Opole</td>
<td><a href="http://www.orlencs.pl">www.orlencs.pl</a></td>
</tr>
<tr>
<td>ORLEN Eko Sp. z o.o.</td>
<td>ul. Chemików 7, 09-411 Płock</td>
<td><a href="http://www.orleneko.pl">www.orleneko.pl</a></td>
</tr>
<tr>
<td>ORLEN Gaz Sp. z o.o.</td>
<td>ul. Zglenickiego 46 a, 09-411 Płock</td>
<td><a href="http://www.orlen%D0%B3%D0%B0%D0%B7.pl">www.orlenгаз.pl</a></td>
</tr>
<tr>
<td>ORLEN KolTrans Sp. z o.o.</td>
<td>ul. Chemików 7, 09-411 Płock</td>
<td><a href="http://www.orlenkoltrans.pl">www.orlenkoltrans.pl</a></td>
</tr>
<tr>
<td>ORLEN Laboratorium Sp. z o.o.</td>
<td>ul. Bielska 1, 09-400 Płock</td>
<td><a href="http://www.orlenlaboratorium.pl">www.orlenlaboratorium.pl</a></td>
</tr>
<tr>
<td>ORLEN Oil Sp. z o.o.</td>
<td>ul. Armii Krajowej19, 30-150 Kraków</td>
<td><a href="http://www.orlenoil.pl">www.orlenoil.pl</a></td>
</tr>
<tr>
<td>ORLEN PetroCentrum Sp. z o.o.</td>
<td>ul. Zglenickiego 44, 09-411 Płock</td>
<td><a href="http://www.orlenpetrocentrum.pl">www.orlenpetrocentrum.pl</a></td>
</tr>
<tr>
<td>ORLEN PetroTank Sp. z o.o.</td>
<td>36-145 Widelka 869</td>
<td><a href="http://www.orlenpetrotank.pl">www.orlenpetrotank.pl</a></td>
</tr>
<tr>
<td>ORLEN Transport SA</td>
<td>ul. Chemików 7, 09-411 Płock</td>
<td><a href="http://www.orlentransport.pl">www.orlentransport.pl</a></td>
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<tr>
<td>ORLEN Wir Sp. z o.o.</td>
<td>ul. Chemików 7, 09-411 Płock</td>
<td><a href="http://www.orlenwir.pl">www.orlenwir.pl</a></td>
</tr>
<tr>
<td>PETROLOT Sp. z o.o.</td>
<td>ul. J. Gordona Bennetta 2, 02-159 Warszawa</td>
<td><a href="http://www.petrolot.pl">www.petrolot.pl</a></td>
</tr>
<tr>
<td>Rafineria Trzebinia SA</td>
<td>ul. Fabryczna 22, 32-540 Trzebinia</td>
<td>wwwrafineria-trzebinia.pl</td>
</tr>
<tr>
<td>SHIP-SERVICE SA</td>
<td>ul. Waliców 11, 00-851 Warszawa</td>
<td><a href="http://www.ship-service.pl">www.ship-service.pl</a></td>
</tr>
<tr>
<td>PKN ORLEN SA</td>
<td>ul. Chemików 7, 09-411 Płock</td>
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</tr>
<tr>
<td>Public Company ORLEN Lietuva</td>
<td>Juodeikiai, LT-89467 Mazeikiai District Lithuania</td>
<td><a href="http://www.orlenlietuva.lt">www.orlenlietuva.lt</a></td>
</tr>
<tr>
<td>Unipetrol RPA s.r.o.</td>
<td>Litvinov – Záluži 1, 436 70 Litvinov Czech Republic</td>
<td><a href="http://www.unipetrolrpa.cz">www.unipetrolrpa.cz</a></td>
</tr>
<tr>
<td>Česká Rafinérská a.s.</td>
<td>Záluži 2, 436 70 Litvinov, Czech Republic</td>
<td><a href="http://www.ceskarafinerska.cz">www.ceskarafinerska.cz</a></td>
</tr>
<tr>
<td>Paramo a.s.</td>
<td>Přerovská 560 Pardubice 530 06 Czech Republic</td>
<td><a href="http://www.paramo.cz">www.paramo.cz</a></td>
</tr>
<tr>
<td>UNIPETROL DOPRAVA s.r.o.</td>
<td>Růžodol 4, 436 70 Litvinov, Czech Republic</td>
<td><a href="http://www.unipetrolodoprava.cz">www.unipetrolodoprava.cz</a></td>
</tr>
<tr>
<td>Benzina s.r.o.</td>
<td>Na Pankráci 127 140 00 Praha 4, Czech Republic</td>
<td><a href="http://www.benzina.cz">www.benzina.cz</a></td>
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</tbody>
</table>