

## CIRCULARITY ISSUES IN THE CORPORATE SOCIAL RESPONSIBILITY REPORTING - CASE STUDY FROM POLAND

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### Abstract

This paper presents an analysis of selected Corporate Social Responsibility (CSR) reports published by companies operating in Poland to determine the existence and specificity of disclosures concerning the circular economy issues. In particular, the paper is focused on identification of qualitative and quantitative descriptions of material aspects and practices related to the 4R (Reduce, Reuse, Remanufacture and Recycle) model implemented to improve environmental performance of products and processes. The results of empirical research show that the analyzed CSR-related reports depict quite extensive activities and indicators related to a reduction in raw materials consumption and in the amount of waste, as well as to recycling of waste streams. However, disclosures of actions that concern reuse and remanufacturing practices are extremely rare. In addition, the research indicated very limited connection between 4R practices disclosed in the analyzed CSR-related reports and eco-innovation activities.

**Keywords:** Circular economy, circularity, corporate social responsibility, CSR

### 1. INTRODUCTION

The circular economy is seen as an industrial system that is restorative or regenerative by intention and design. It replaces the 'end-of-life' concept with restoration, shifts towards the use of renewable energy and a reduction in non-renewable resources consumption and aims at waste elimination through superior design of materials, products, systems and new business models [1]. It makes it possible to capture an additional value from products and materials, to decrease the amount of unrecoverable waste and to reduce the risk presented by the material price volatility and changing costs of the material supply [2].

The Corporate Social Responsibility (CSR) reporting is focused on disclosures related to significant economic, environmental and social impacts that matter the most to a given organization. The question arises whether circularity issues are reported in CSR reports in Poland. Therefore, this article presents an analysis of selected CSR-related reports published by companies operating in Poland to determine the existence and specificity of disclosures concerning the circular economy issues. The studies conducted in this area are limited and, in addition, such research has not been performed in Poland up till now. This study expands and enriches the previous surveys focused on quality assessment of CSR reporting practices in Poland [3, 4] and, in particular, on the green supply chain management issues within CSR-related reports in Poland [5].

### 2. THEORETICAL BACKGROUND

The circular economy is gaining increasing attention in Europe and around the world as a potential way for society to increase prosperity, while reducing the dependence on primary materials and energy and decreasing waste generation in the product life cycle [1]. The main principle of the circular economy is designing without waste and its target is to "close the loop" of the product life cycle. This means that the product should be designed and optimized for a cycle of disassembly and reuse, which makes it possible to avoid or significantly reduce the amount of waste. Therefore, the circular economy model can be described as the model of 4 R's: Reduce, Reuse, Remanufacture and Recycle [6]. The principles of the circular economy can be translated into specific business actions. For example, the ReSOLVE framework includes six levers of the circular economy:

Regenerate (i.e. shift to renewable energy and materials), Share (i.e. share assets, reuse/use second-hand goods, prolong life through maintenance, design for durability, upgradability), Optimize (i.e. improve the product performance/efficiency, remove waste from production and from the supply chain), Loop (i.e. remanufacture products or components, recycle materials), Virtualize (i.e. e-Books, online shopping, autonomous vehicles), and Exchange (i.e. replace old with advanced non-renewable materials, apply new technologies, choose a new product/service, e.g. multimodal transport) [1]. Accenture has identified five business models driving the circular economy and these models include: Circular supplies, Resource recovery, Product life extension, Sharing platforms, and Product as a Service [7]. The complexity of the circular economy concept is evidenced by the fact that the IMSA has categorized nineteen existing circular business models that take account of: Short cycle (e.g. pay per use, waste reduction, repair), Long cycle (e.g. refurbish and resell, take back management), Cascades (e.g. upcycle, collaborative production), Pure circles (e.g. cradle to cradle, circular sourcing), Dematerialized services (e.g. physical to virtual, subscription-based rental), and Produce on demand (e.g. produce on order, customer-vote design) [8].

CSR reporting constitutes a key platform for measuring, understanding and communicating sustainability performance and relevant economic, environmental and social impacts caused by everyday activities of organizations. In fact, every organization can define to itself what CSR means, it may also decide how to communicate its CSR advancement in whatever manner it finds appropriate. However, there exists widespread sustainability reporting guidance that helps to demonstrate the link between the organization's strategy and its commitment to sustainability. The GRI Standards for Sustainability Reporting seem to be the most trusted and widely used all around the world with the latest version of the GRI G4 Guidelines issued in 2013 [9]. It expanded, among others, standard disclosures of significant actual and potential environmental impacts in the whole supply chain. These impacts also include circularity issues related to implementation of the circular economy concept at the organization level.

With regard to disclosures of the material aspects and practices related to circularity issues, the GRI G4 requires organizations to report on significant environmental impacts in the whole supply chain and on taken actions, together with relevant indicators. Disclosures may consist of descriptions and indicators that report the percentage of recycled input materials used to manufacture the organization's primary products and services, the total volume of water recycled and reused by the organization, and the total weight of hazardous and non-hazardous waste reused or recycled. These indicators should provide insight into the extent to which the organization's products, components or materials are collected and successfully converted into useful materials for new production processes. They also show the degree to which the organization has designed products and packages capable of being recycled or reused. GRI G4 emphasizes that establishing effective recycling and reuse systems to close product cycles contributes significantly to increased material and resource efficiency [10].

### 3. MATERIALS AND METHODS

The research presented in this article is a continuation of the analysis of disclosures on the green supply chain management (GSCM) issues within CSR-related (i.e. corporate social responsibility, sustainable and integrated) reports in Poland [5]. Out of the 42 previously analyzed reports, 10 reports coming from companies that received the best scores with regard to the inclusion of the GSCM were selected. The characteristics of the reports under analysis are presented in **Table 1**.

Based on previous research [1, 6, 11], the analysis of the content of CSR-related reports has focused on identification of specific descriptions of actions and on measurable indicators disclosed in relation to the 4R model:

- Reduce, e.g. reduction in the use of the virgin material and in the waste stream attributed to the product manufacturing;

- Reuse, e.g. reintroduction of a product for the same purpose and in its original form, following minimal maintenance and cosmetic cleaning. If a product cannot be reused as a whole, individual components can be reused in a functional way;
- Remanufacture, e.g. the processes of disassembly and recovery at the sub-assembly or component level. Functioning, reusable parts are taken out of a used product and rebuilt into a new one. This process includes quality assurance and potential enhancements or changes to the components;
- Recycle, e.g. recovering materials for the original purpose or for other purposes. The materials recovered feed back into the process as crude feedstock. Recycling excludes energy recovery.

**Table 1** Characteristics of analyzed CSR-related reports [own analysis]

Company name	Core activity	Report type	Guidelines declared	External verification	Years covered in report
ATLAS Group	Construction materials manufacturer	Corporate Social Responsibility	GRI G4 Core	Verified	2014-2015
AUCHAN Polska	Retailing company	Sustainable	GRI G4 Core	None	01/10/2013-31/09/2014
AZOTY Group	Fertilizers and chemicals manufacturer	Integrated	GRI G4 Core	Verified	2015
CASTORAMA Polska	Retailer of home improvement tools and supplies	Corporate Social Responsibility	GRI G4 Core	None	01/02/2013-31/01/2015
CEMEX Polska	Building materials manufacturer	Sustainable	GRI G4 Core	Verified	2013-2014
KOMPANIA PIWOWARSKA	Brewery group	Sustainable	GRI G4 Core	Verified	01/04/2015-31/03/2016
LOTOS Group	Vertically integrated oil company	Integrated	GRI G3.1	Verified	2014
ORANGE Polska	Telecommunications provider	Corporate Social Responsibility	GRI G4 Core	Verified	2015
POLPHARMA	Pharmaceuticals manufacturer	Corporate Social Responsibility	GRI G4 Core	Verified	2013-2014
RABEN Polska	Comprehensive logistics services	Sustainable	GRI G4 Core	Verified	2015

#### 4. RESULTS AND DISCUSSION

According to the GRI G4, CSR-related reports shall focus on the organization's significant economic, environmental and social impacts or on impacts that have a substantial influence on the stakeholders' assessment and decisions [9, 10].

The empirical research results confirm that companies value the circularity issues related to the Reduce and Recycle components of the 4R model and perceive them as significant. The study shows that the analyzed CSR-related reports contain quite an extensive depiction of activities and indicators related to a reduction in raw materials consumption and in the amount of generated waste, as well as to recycling of waste streams, including packaging. There is also relatively much information on recycled materials in products and packaging and on utilization of recycled materials in manufacturing processes. On the other hand, disclosures of actions that concern reuse and remanufacturing practices are extremely rare. With regard to this issue, the exceptions are the indicators and the description related to reused and remanufactured products (i.e. multimedia devices and phones) included in the ORANGE Polska CSR Report. In addition, the research indicates very limited connection between circular issues that concern the 4R model practices disclosed in CSR-related reports and eco-innovation activities. The examples of eco-innovation solutions in this area are incorporated in the reports from KOMPANIA PIWOWARSKA and ORANGE Polska only. It is also worth mentioning that few reports publish information about virtualization of meetings through videoconferences and teleconferences and

introduction of E-documents, which is in line with the circular economy assumptions. The results of the study are presented in **Table 2**.

**Table 2** Disclosures of selected circularity issues in analyzed CSR-related reports in Poland [own analysis]

Company name	Disclosures related to model of 4R: Reduce, Reuse, Remanufacture and Recycle
ATLAS Group	<ul style="list-style-type: none"> <li>• Reduce: Indicators related to consumption of raw materials and other materials during manufacturing processes;</li> <li>• Reuse and Remanufacture: None;</li> <li>• Recycle: Indicators related to the percentage of recycled input materials used in manufacturing processes; indicators related to the increase in the total mass weight and levels of recycled packaging; information about publishing data on the quantity of recycled materials in products and packaging, use of secondary material, use of renewable and non-renewable secondary fuels, and materials for recycling;</li> <li>• Other: Information about comprehensive LCA assessment for several key product groups and publishing of type III Environmental Product Declarations.</li> </ul>
AUCHAN Polska	<ul style="list-style-type: none"> <li>• Reduce: Description of activities related to waste reduction and indicators related to the amount of waste; description of activities related to a reduction in water, energy and gas consumption and indicators related to water, energy and gas consumption</li> <li>• Reuse and Remanufacture: None</li> <li>• Recycling: Indicators and description of activities related to packaging recycling; information about closed loops in water consumption</li> <li>• Other: Information about application of the 3R model (Reduce: reduction in packaging and waste; Reuse: reuse of packaging; Recycle: processing of raw materials from packaging).</li> </ul>
AZOTY Group	<ul style="list-style-type: none"> <li>• Reduce: Indicators and description of actions that contributed to a reduction in energy and water consumption, management of waste, wastewater and emissions; information about low-waste technologies and improvements in waste collection and reduction;</li> <li>• Reuse and Remanufacture: None;</li> <li>• Recycle: Indicators and descriptions related to recycling of production waste, recycling of packaging waste and water recovery; information about waste oils and lubricants that are re-used in the production of new oil.</li> </ul>
CASTORAMA Polska	<ul style="list-style-type: none"> <li>• Reduction: Indicators and description related to the carbon footprint throughout the supply chain, water consumption and the amount of waste; information about responsible wood acquisition;</li> <li>• Reuse and Remanufacture: None;</li> <li>• Recycle: Description and indicators related to recycling of various waste types; information about products with closed-loop certificates; information about the 2020 target to reduce to zero the amount of waste going to the landfill;</li> <li>• Other: Information about virtualization of meetings through videoconferences and teleconferences.</li> </ul>
CEMEX Polska	<ul style="list-style-type: none"> <li>• Reduce: Indicators and description related to a reduction in water consumption, raw materials consumption and emissions;</li> <li>• Reuse and Remanufacture: None;</li> <li>• Recycle: Indicators and description related to the use of recycled materials in manufacturing processes; indicators and description related to closed loops in water consumption;</li> <li>• Other: Indicators and description of the use of renewable fuels and consumption of energy from renewable sources.</li> </ul>
KOMPANIA PIWOWARSKA	<ul style="list-style-type: none"> <li>• Reduce: Indicators and description related to a reduction in water consumption, energy consumption, the waste amount and emissions;</li> <li>• Reuse and Remanufacture: None;</li> <li>• Recycle: Indicators and description related to waste, by-products and various types of packaging recycling; closed loops in water consumption;</li> <li>• Other: Information about the increasing use of renewable energy sources; information about eco-innovations in packaging.</li> </ul>
LOTOS Group	<ul style="list-style-type: none"> <li>• Reduce: Indicators and description related to raw materials and water consumption;</li> <li>• Reuse and Remanufacture: None;</li> <li>• Recycle: Indicators and description related to waste recycling; information about closed loops in water consumption.</li> </ul>

Company name (continue)	Disclosures related to model of 4R: Reduce, Reuse, Remanufacture and Recycle
ORANGE Polska	<ul style="list-style-type: none"> <li>• Reduce: Indicators and description of actions that contributed to a reduction in paper use, energy consumption and emissions;</li> <li>• Reuse and Remanufacture: Indicators and description related to reused and remanufactured products (i.e. multimedia devices and phones);</li> <li>• Recycle: Indicators and description related to waste recycling, information about all components of products collected for recycling at the end of the product use phase;</li> <li>• Other: Information about eco-innovative solutions; information about introduction of E-documents and teleconferences.</li> </ul>
POLPHARMA	<ul style="list-style-type: none"> <li>• Reduce: Indicators and description of actions that contributed to packaging minimization, reduction in the consumption of raw materials, water and energy;</li> <li>• Reuse and Remanufacture: None;</li> <li>• Recycle: Indicators and description related to packaging from recycling; indicators and description related to the percentage of recycled input materials used in manufacturing processes and waste recycling.</li> </ul>
RABEN Polska	<ul style="list-style-type: none"> <li>• Reduce: Indicators and description of actions that contributed to a reduction in fuel and energy consumption and in emissions;</li> <li>• Reuse and Remanufacture: None;</li> <li>• Recycle: Indicators related to selective collection of waste;</li> <li>• Other: Information about introduction of E-documents.</li> </ul>

It should be emphasized that the transition to superior design and development of materials, products, systems and new business models to be consistent with the circular economy assumptions is a very complex and time-consuming process. Comprehensive and reliable implementation of relevant actions in this area requires, inter alia, the search for and implementation of diverse innovative initiatives [12] and suitable forms of cooperation within the whole supply chains [13], in particular - reverse logistics. This will also necessitate appropriate utilization of tools supporting innovation and eco-innovation [1,14] to achieve environmentally friendly processes and circular products [15], which usually will need the support of dedicated IT tools [16,17].

## 5. CONCLUSIONS

The change from the linear approach to consumption and production, where raw materials are extracted, then made into products which are used and then disposed of, to the circular loop, where resources are recovered at their highest quality and kept in circulation for as long as possible, seems to be inevitable. Therefore, the circular economy concept has become increasingly popular in recent years in seeking an alternative to the current 'Take - Make - Dispose' economic model.

Moreover, the move to the circular economy might constitute a significant opportunity for business. To address this challenge, the British Standards Institution established the BS 8001 framework that is intended to help to understand and implement the circular economy issues at an organizational level and to continually improve the transition from a linear to a more sustainable and circular mode of operation. This is to be achieved by the use of the guiding principles (i.e. Systems thinking, Innovation, Stewardship, Collaboration, Value optimization and Transparency) and the framework for relevant actions within the 8-stage process (i.e. Framing, Scoping, Idea generation, Feasibility, Business case, Piloting, Implementation, and Reviewing) [18].

The empirical research results show that companies in Poland are at the beginning of the tough way to the circular economy. The achievements, until now, concern mainly the activities related to a reduction in raw materials consumption and in the amount of generated waste, and to recycling of waste streams. However, disclosures of complex actions related to the circularity issues are extremely rare. In addition, the reported disclosures provide very limited connection between the 4R model practices and eco-innovation activities. It should also be emphasized that the practices related to the 4R model analyzed in this paper are only a small part of the circular economy concept.

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