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Towards a More Circular Economy: Progress Assessment of Belarus

The policy brief summarizes the results of the study on the circular economy development in Belarus. The aim of the work was to measure the circularity of Belarusian economy using the European Commission indicators. The analysis reveals that the circular economy in Belarus is still on the initial stage of its development. In 2016, the employment in circular economy in Belarus accounted for 0.49% of total employment, and the investment amounted to only 0.27% of total gross investment. Belarus is also falling behind many European countries in waste recycling.

Introduction

The circular economy represents an economic system based on a business model of reduction, reuse, recirculation and extraction of materials in production / distribution and consumption of goods and services (Batova et al., 2018).

Transition to it offers great opportunities to transform Belarusian economy and make it more sustainable and environmentally friendly while preserving primary resources, creating new jobs and increasing competitiveness of the enterprises.

In order to encourage the transition to a circular economy, it is important to have a proper monitoring system based on reliable and internationally comparable data. It helps to track progress towards a circular economy, conduct policy impact assessment, and analyze whether measures being taken are sufficient to promote the economy that reduces generation of waste.

To assess the development of a circular economy in Belarus a set of the European Commission (EC) indicators was used in order to capture an evolution of the main elements of closing materials and products loop. The EC monitoring system comprises 10 indicators which are part of 4 pillars: production and consumption; waste management; secondary raw materials; competitiveness and innovation.

The reasons to use this system for Belarus are as follows: first, there is no set of indicators that provide a comprehensive overview of a circular economy in Belarus, while EC monitoring framework allows to capture its main elements, stages, and aspects; second, Eurostat calculates circular economy indicators for the European Union (EU) countries on a regular basis, which proves high level of their practical application, relevance

and robustness; third, the EC is constantly working on their improvement. Thus, the EC set of indicators can be a tool to monitor trends in transition to a circular economy in Belarus.

Tight spots of waste statistics in Belarus

While calculating the circular economy indicators for Belarus the following problems with data affecting the quality of statistics have been identified:

- methodological issues;
- challenges with recording and coverage;
- insufficient degree of international comparability of data, in particular, with the EU countries.

Such methodological problems as the blurred boundaries between the definitions of 'waste' and 'raw materials', the lack of criteria for categorizing substances or objects as waste allow enterprises to classify certain substances or objects not as waste and therefore not to file information on them. As a result, less than half of the enterprises which might generate industrial waste, report on it. Therefore, the question arises whether the statistical data reflect the real level of waste generation, recycling, and disposal in Belarus. Data on municipal solid waste (MSW) have proved to be one of the most serious concern. Absence of direct MSW weighing makes the data on it very sensitive to the conversion factor from volume to mass units. The differences between the Belarusian and European waste classifiers and definitions of key concepts ('waste', 'recycling rate') complicate the data analysis. In addition, since Belarus is the 3rd world potash fertilizers producer, the share of potash waste in the total volume of waste generation is very high (63-68%). Only a small portion of this type of waste stream is recycled in



Belarus (no more than 4%) due to lack of appropriate technologies of potash waste utilization in international practice. As in the EU only Germany is one of the world's largest producers of potash fertilizers, to increase the comparability of data between the EU countries and Belarus, potash waste hasn't been considered when calculating the circular economy indicators. Given all the above mentioned problems some of the EU indicators have been adapted to the existing Belarusian statistical data.

Illustration of waste statistics problems

Waste statistics problems result in overestimation or underestimation of some circular economy indicators. A good example is the recycling rate of all waste excluding major mineral wastes. Belarus, which is a country without a proper legal framework for the circular economy and well-established secondary raw materials market, had one of the best performances in terms of the recycling rate (72-80%) among the EU countries in 2010-2016. This fact reflects the problems with waste statistics rather than success in waste recycling in Belarus.

Table 1. Recycling rate of all waste excluding major mineral wastes, %, in 2010-2016

| Country | 2010 | 2012 | 2014 | 2016 |
|---------------|------|------|------|------|
| Belarus | - | 80 | 76 | 72 |
| EU | 53 | 53 | 55 | - |
| - Sweden | 51 | 53 | 51 | - |
| - Denmark | 56 | 64 | 59 | - |
| - Finland | 33 | 41 | 41 | - |
| - Netherlands | 71 | 71 | 72 | - |
| - Germany | 55 | 54 | 53 | - |
| - Czechia | 50 | 58 | 60 | - |
| - Hungary | 36 | 35 | 40 | - |
| - Poland | 58 | 55 | 60 | - |
| - Lithuania | 50 | 51 | 57 | - |
| Norway | - | - | - | - |

Source: for the EU countries and Norway - Eurostat. For Belarus - own calculations based on the data from the RUE "Bel RC «Ecology».

Actual picture of the circular economy development in Belarus

The indicators with minimum distortions in waste statistics show that some elements of the circular economy in Belarus are still in the initial stage of their development (tables 2, 3, 4, 5). The study reveals that the recycling rate of MSW amounted to 15.4 % in 2014-2016, it was much lower than the EU average in 2014 and 2016. Thus, Belarus has a considerable potential to increase the recycling rate of MSW. The experience of Czechia and Lithuania shows that MSW recycling rate can be increased relatively fast if efforts are made and resources permit.

Table 2. Recycling rate of MSW, %, in 2010-2016

| Country | 2010 | 2012 | 2014 | 2016 |
|---------------|------|------|------|------|
| Belarus | - | - | 15.4 | 15.4 |
| EU | 38.3 | 41.5 | 43.7 | 45.8 |
| - Sweden | 48.1 | 47.2 | 49.9 | 48.9 |
| - Denmark | - | 42.1 | 45.1 | 47.7 |
| - Finland | 32.8 | 33.3 | 32.5 | 42.0 |
| - Netherlands | 49.2 | 49.4 | 50.9 | 53.1 |
| - Germany | 62.5 | 65.2 | 65.6 | 66.1 |
| - Czechia | 15.8 | 23.2 | 25.4 | 33.6 |
| - Hungary | 19.6 | 25.5 | 30.5 | 34.7 |
| - Poland | 21.4 | 19.6 | 32.3 | 44.0 |
| - Lithuania | 4.9 | 23.5 | 30.5 | 48.0 |
| Norway | 42.1 | 39.8 | 42.2 | 38.2 |

Source: for the EU countries and Norway - Eurostat. For Belarus - own calculations based on the data from the SE "Operator of SMRs" and Belstat.

In 2016, the recovery rate of construction and demolition waste in Belarus reached 81% though this indicator fluctuated between 59% and 79% in previous years. However, it can be further improved as in some European countries (Denmark, the Netherlands, Germany, Czechia, Poland and Lithuania) the recovery rate of this type of waste stream exceeds 90%.



Table 3. Recovery rate of construction and demolition waste, %, in 2010-2016

| Country | 2010 | 2012 | 2014 | 2016 |
|---------------|------|------|------|------|
| Belarus | - | 79 | 59 | 81 |
| EU | 78 | - | 88 | - |
| - Sweden | 78 | - | 55 | - |
| - Denmark | 84 | - | 92 | - |
| - Finland | 5 | - | 83 | - |
| - Netherlands | 100 | - | 99 | - |
| - Germany | 95 | - | - | - |
| - Czechia | 91 | - | 90 | - |
| - Hungary | 61 | - | 86 | - |
| - Poland | 93 | - | 96 | - |
| - Lithuania | 73 | - | 92 | - |
| Norway | 44 | - | 78 | - |

Source: for the EU countries and Norway - Eurostat. For Belarus - own calculations based of the data from the RUE "Bel RC «Ecology».

Despite the fact that decoupling of the economic growth from an increase in waste volumes is an important issue on the international agenda, trends in waste generation in many countries follow a development of GDP. In 2010-2012, generation of waste excluding major mineral wastes per GDP unit (42-46 kg/thsd of \$, PPP) in Belarus (table 4) was comparable with such countries as Czechia, Lithuania, Germany, Denmark, Sweden. However, in 2014 due to waste generation growth this indicator in Belarus exceeded above-mentioned EU countries and approached the level of Hungary and the Netherlands. It was far above Norway that was the best performer among the European countries and a good example of how a country could really decrease waste generation.

Table 4. Generation of waste excluding major mineral wastes per GDP unit (kg per thsd constant 2011 international \$) in 2010-2016

| Country | 2010 | 2012 | 2014 | 2016 |
|---------------|------|------|------|------|
| Belarus | 46 | 42 | 52 | 47 |
| EU | 50 | 49 | 49 | - |
| - Sweden | 46 | 44 | 43 | - |
| - Denmark | 44 | 39 | 39 | - |
| - Finland | 113 | 98 | 64 | - |
| - Netherlands | 58 | 56 | 57 | - |
| - Germany | 42 | 42 | 44 | - |

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|-------------|----|----|----|---|
| - Czechia | 42 | 42 | 38 | - |
| - Hungary | 52 | 50 | 50 | - |
| - Poland | 81 | 80 | 81 | - |
| - Lithuania | 47 | 41 | 43 | - |
| Norway | 27 | 31 | 30 | - |

Source: for the EU countries and Norway the data on generation of waste excl. major mineral wastes - Eurostat. For Belarus - own calculations based on the data from the RUE "Bel RC «Ecology»". For the EU countries, Norway and Belarus the data on GDP, PPP in constant 2011 international \$ - The World Bank.

In 2012, the share of gross investment in the circular economy sectors in Belarus (table 5) decreased in comparison with 2010, however, since 2014 it have shown an upward trend. For the EU countries and Norway this indicator also includes investment in the repair and reuse sector. For Belarus this sector has not been taken into account in calculation due to lack of data. In addition, the gross investment in tangible goods is a bit different from the gross investment in fixed assets used for Belarus as the latter doesn't include non-produced tangible goods such as land. Yet, even bearing in mind these differences in calculation, the circular economy appeared to be underinvested in Belarus comparing to the EU countries and Norway.

Table 5. Gross investment in tangible goods (% of total gross investment) in circular economy sectors in 2010-2016

| Country | 2010 | 2012 | 2014 | 2016 |
|---------------|------|------|------|------|
| Belarus | 0.25 | 0.21 | 0.23 | 0.27 |
| EU | - | - | 1.32 | - |
| - Sweden | 1.22 | 1.15 | 1.10 | - |
| - Denmark | 0.89 | 1.09 | 1.03 | - |
| - Finland | 1.45 | - | 1.31 | - |
| - Netherlands | 2.32 | 1.62 | 1.37 | - |
| - Germany | 1.28 | 1.47 | 1.22 | - |
| - Czechia | - | - | - | - |
| - Hungary | 0.99 | 0.93 | 1.16 | - |
| - Poland | 1.80 | 1.77 | 1.68 | - |
| - Lithuania | 1.08 | 1.54 | 1.09 | - |
| Norway | 1.45 | 0.92 | 1.02 | - |

Source: for the EU countries and Norway - Eurostat. For Belarus - Belstat.



The employment in the circular economy in Belarus accounted for only 0.49% of total employment in 2016, while in the EU countries and Norway this indicator was approaching 3%. This again proves the fact that Belarus has a long way to go towards the creation of a circular economy.

Conclusion

The analysis revealed contradictory results of the circular economy development in Belarus. While the country scores highly across some indicators compared to the EU countries and Norway, this to a large extent reflect the problems with waste statistics rather than success in waste management. The indicators with minimum distortions in waste statistics show that Belarus is falling behind the leading countries in circular economy development. However, in transition to a circular economy the monitoring framework is an important component of this process, which permits to track a progress using the system of indicators. In order to ensure that these indicators accurately capture the key trends in the circular economy in Belarus it would seem useful to:

- ✓ align the definition of 'waste', 'recycling rate' with the international one, identify clear criteria for classifying substances or products as waste and secondary raw materials;

- ✓ strengthen the accountability of entities for filing reports on waste;

- ✓ improve the system of MSW and SMRs reporting and recording, and introduce MSW recording based on weighing wherever possible;

- ✓ consider the option of improving the comparability of Belarus' waste classifier with the European waste statistical nomenclature.

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