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Resource efficiency/Circular economy policies and approaches in Russia

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Head of the educational programs "Industrial Ecology and Cleaner Production", "Environmental Engineering"
Author of more than 120 publications
Russian coordinator of the "Capacity Building Erasmus+" project "EduEnvi Enhancing Competences of Sustainable Waste Management in Russian and Kazakh HEIs" (2017-2021)
Research interests – models and tools leading to circular economy such as cleaner production, environmental management systems and certification, resource efficiency analysis, lifecycle assessment and life cycle costing of innovative technologies, especially designed for waste-to-energy and alternative energy sources.

NEW INDUSTRIAL POLICY IN RESOURCE EFFICIENCY

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- Indicative character, oriented to adoption of UNEP Sustainable Development Goals
- Strategic character, supported by strategies in waste management and climate change
- Institutional support through Bureau of Best Available Techniques, National Project "Ecology", Skolkovo Foundation.

Best available techniques implementation

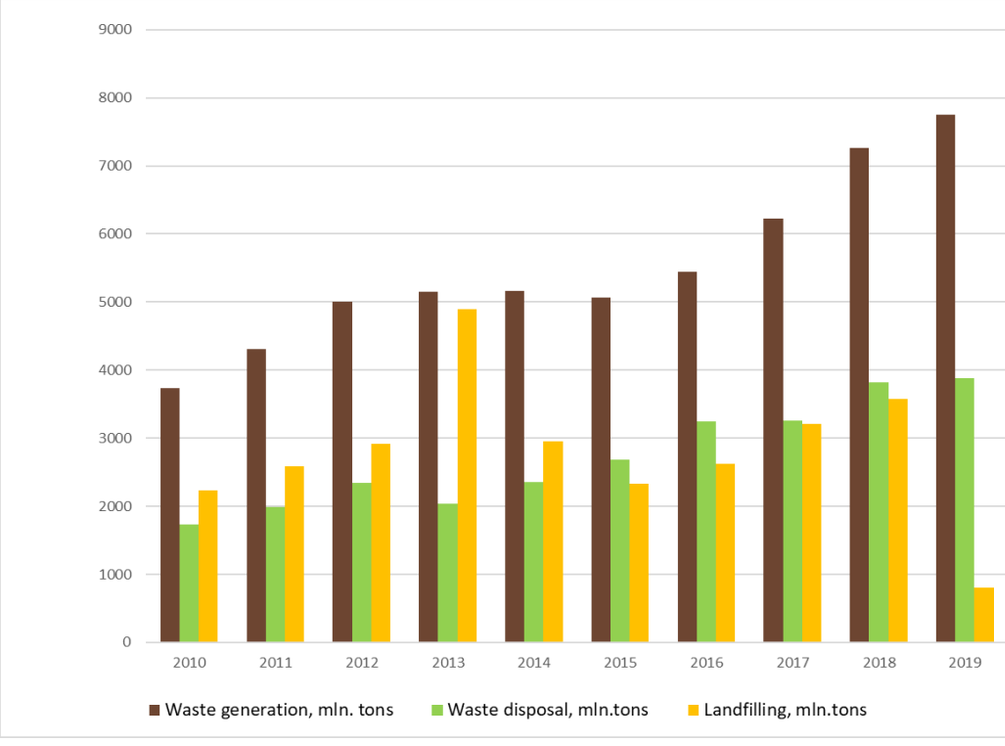
- change in establishing environmental standards aligned with BATs;
- since 01.01.2019 step-by-step transfer to BATs for enterprises of category 1 – dangerous for the environment;
- development of BREFs in open public discussion with interested parties.

Circular economy and recycling promotion

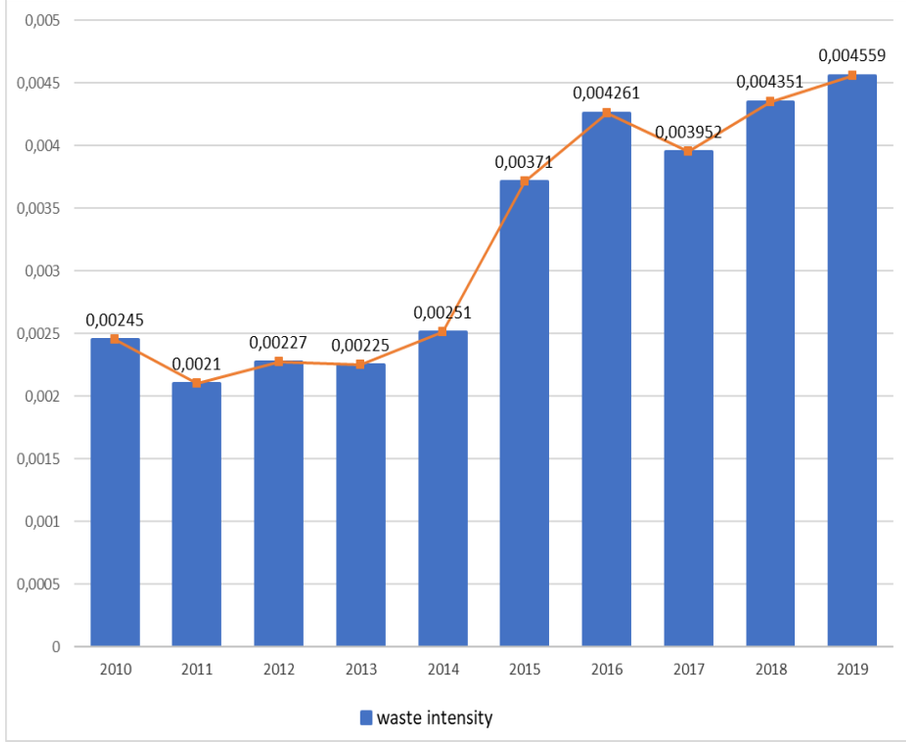
- creating a new industry on waste treatment, reduce-reuse-recycle;
- zero waste;
- creation of eco-techoparks;
- support for development of innovative technologies – IoT, bio-, nano-technologies to improve the scientific basis of waste management.

ENVIRONMENTAL STATISTICS ON WASTE

Waste generation, disposal & landfilling, mln t



Waste intensity, t/per a unit of GDP, USD



- https://rosstat.gov.ru/folder/11194
  https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locale=ru&locations=RU&most_recent_value_desc=false

BEST AVAILABLE TECHNIQUES REFERENCE DOCUMENTS

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From the first adopted horizontal EU BREF on energy efficiency in 2009 to 50 BREFs of the Russian Federation in 2017 Updating of BREFs since 2019.

BREF 9-2015 Thermal Waste Processing (Waste incineration)

BREF 15-2016 Waste utilization and neutralization (except thermal neutralization (waste incineration)

BREF 17-2016 Disposal of production and consumption waste

BREF 10-2019 Wastewater treatment using centralized drainage systems of settlements, urban districts

БЮРО НДТ

- http://burondt.ru/

WASTE REFORM

New approach to Waste Management of Federal Law No. 89-FZ "On production and consumption waste", which included:

- new terminology (the concept of "waste" has been clarified, the term "disposal" of waste and the concept of recycling, regeneration and recovery, etc. have been introduced);
- new principles of waste management – priority of utilization over waste incineration and disposal;
- new regulatory mechanisms:
  - a ban on the disposal of waste containing useful components;
  - extended producer responsibility and utilization fee;
  - institute of regional operators and territorial schemes development;
- correction of the powers of the authorities, etc.

TERRITORIAL WASTE MANAGEMENT SCHEMES

Stage 1	analysis of the current situation; field measurements, if necessary analysis of the secondary raw materials market
Stage 2	MSW formation forecast; GIS-analysis of the territory; selection of technology for processing and disposal of waste
Stage 3	development and selection of a logistics structure; development of a basic technology option
Stage 4	MSW and hazardous waste collection system; selection of objects of waste recycling; calculation of the required capacities; determining the need for landfills
Stage 5	calculation of economic indicators; development of an action plan; development of recommendations for changing legislation

BAN ON WASTE DISPOSAL CONTAINING USEFUL COMPONENTS

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Since 2017

- scrap and waste of ferrous and non-ferrous metals
- equipment and products with mercury

Since 2018

- paper and cardboard
- car tires
- packaging from thermoplastic and glass

Since 2020

- computer, electronic, optical equipment
- electrical equipment
- unsorted MSW since 2024

- Governmental Ordinance of the RF dated of 25.07.2017 №1589-p http://www.consultant.ru/document/cons_doc_LAW_221683/

FOOD WASTE GENERATION IN THE PRODUCTION CHAIN

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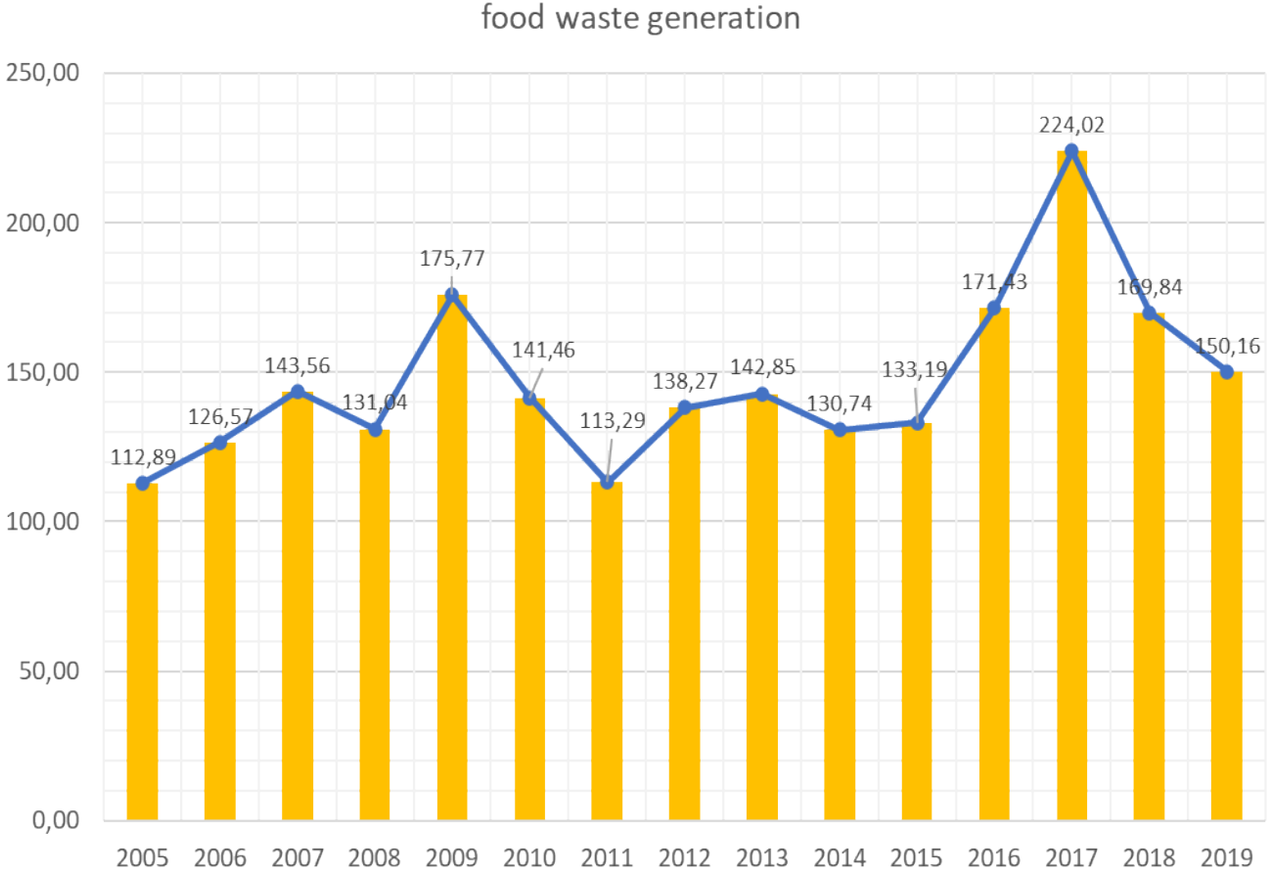

Farming – 8,22%

Transportation – 3,41%

Processing – 8,72%

Storing – 4,33%

Realization – 4,85%

Consumption – 11.8% discarded by consumers

– 41.3% total losses

- https://rosstat.gov.ru/folder/11194
  TIAR-center calculations based on data from the Ministry of Agriculture of the Russian Federation, 2017

FOOD LOSSES AND WASTE

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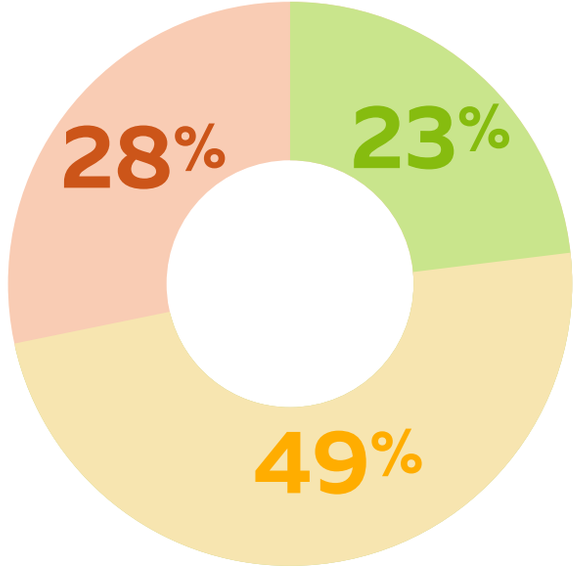
1,3 billion tons annually worldwide – almost a third of all products*

82 million tons annually in Russia – 6,3%**

Food and beverage industry



Share of food waste in MSW

Agricultural production

* FAO. 2011. Global food losses and food waste – Extent, causes and prevention. Rome

** TiarCenter, 2019. Food Sharing in Russia: a way to save up to 1 million tons of food annually. Moscow; Scolcovo Analitica, 2019. Food losses and organic waste in the Russian Federation consumer market. Moscow

FOOD LOSSES IN PRODUCTION CHAIN IN DIFFERENT AGRICULTURE AND FOOD INDUSTRIES*

	Growing and harvesting	Processing	Transportation, storing	Realization
Plants farming	10–30%	10–25%	≈15%	30–45%
Dairy farming	10–50%	10–25%	10–35%	5–10%
Meat farming	20–30%	1–5%	10–15%	≈5%
Fishery	20–30%	5–20%	≈10%	5–10%

* Scolcovo Analitica, 2019. Food and organic waste in the Russian Federation consumer market. Moscow

CONCLUSION

Next steps for shaping the environmental agenda and sustainable development in Russia:

- solving social and demographic problems;
- reducing food losses and waste from farm to consumer based on multi-sectoral approach – improvement of infrastructure, awareness of all participants in the chain, best available and perspective technologies;
- information collection and processing system on waste and other environmental impacts;
- measures to reduce the climate change aligned with the resource and energy efficiency politics;
- international partnership for sustainable development, resource efficiency and circular economy.

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Thank you for attention!

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