



III International Scientific Conference “Sustainable and efficient use
of energy, water and natural resources – SEWAN-2021”

ГАЛАХИМ



Implementation of the low-carbon development trend in the chemical industry

Authors: Dr. Anna Makarova*, Evgeniya Kudryavtseva**

Affiliations: *D. Mendeleev University of Chemical Technology of Russia

**** LLC KOLTECH-EcoChem**

Dr. A. Makarova, E. Kudryavtseva

Affiliations: D. Mendeleev University of Chemical Technology of Russia

Keywords:

Responsible Care; greenhouse gases; carbon footprint; climate change; low-carbon development

Research Objective:

The aim of this study is estimation how Responsible Care Program promotive of sustainable development goals (SDGs).

The contribution of this work is to evaluate the performance of Responsible Care Program as a tool for the chemical industry to fulfil the SDGs regarding environmental issues. The study would provide benchmarking values for the program managers to better improve the program performance. The result would also help the involved industries to seek potential directions in reducing environmental impacts of the chemical industries.

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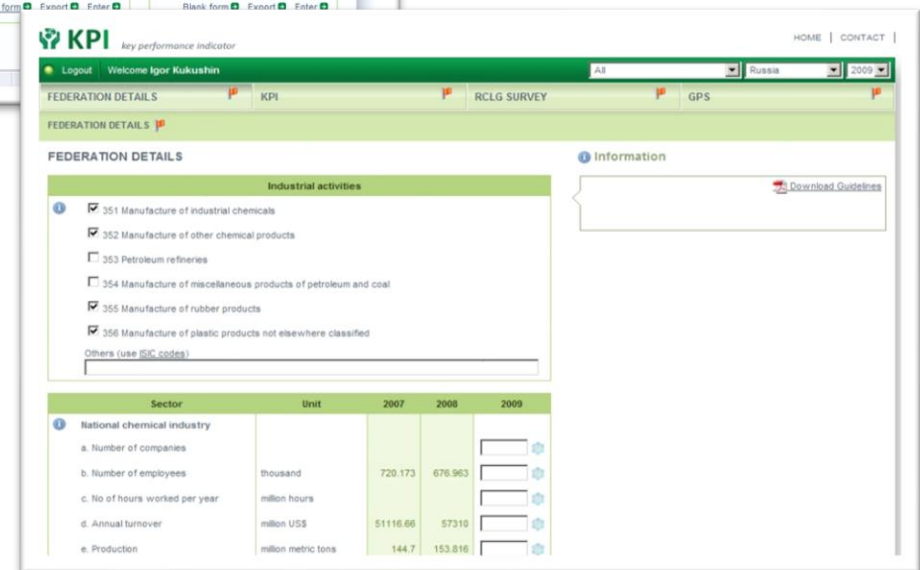
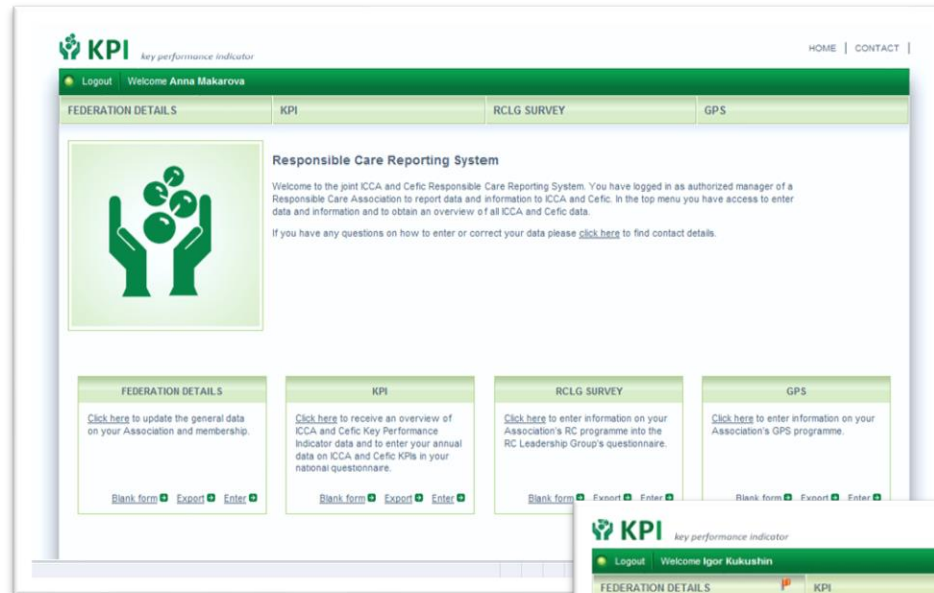
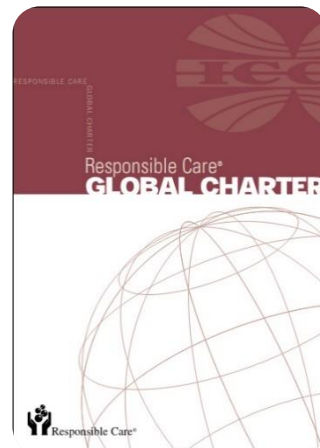
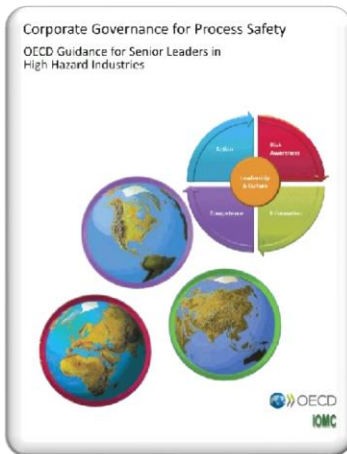
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United Nations Environment Programme



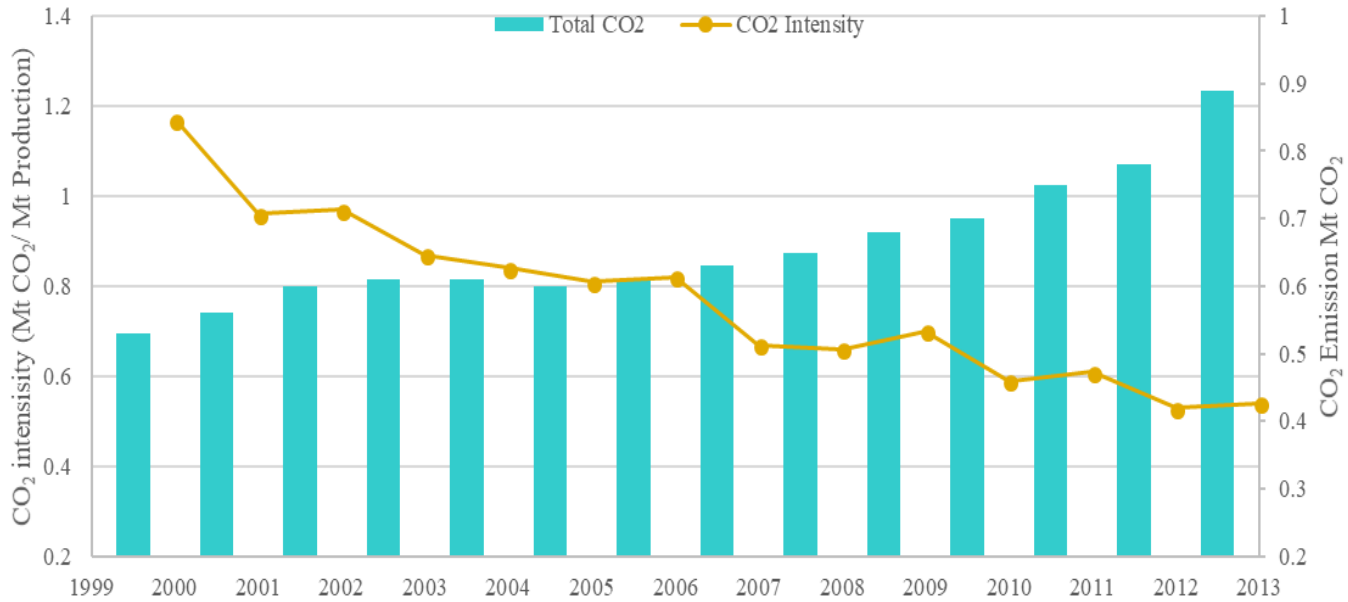
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CO₂ emission and CO₂ intensity reported by companies involved in the Responsible Care Program

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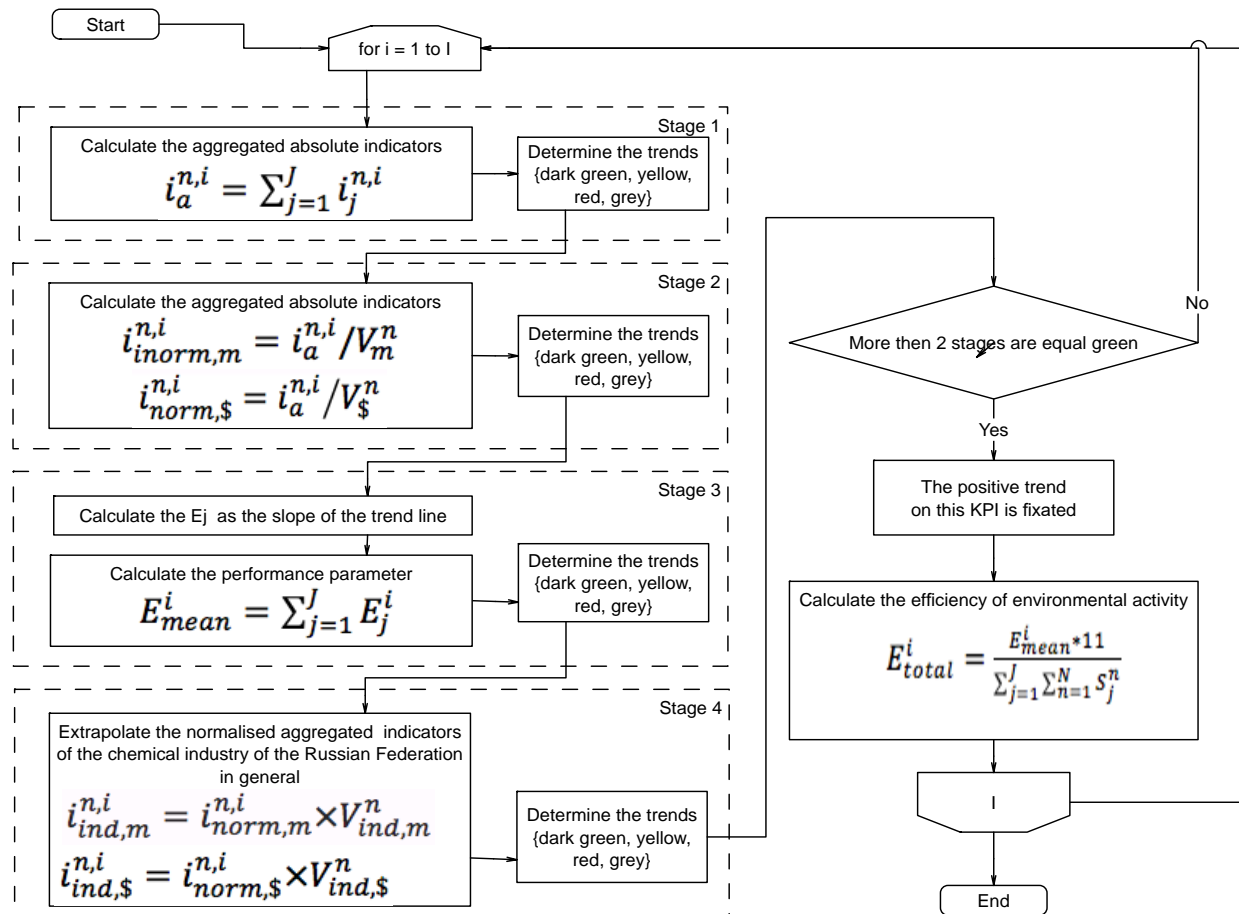
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Method for assessing the impact of chemical and petrochemical industries on climate change



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The assessment of the impact of chemical and petrochemical industries on climate change was carried out according to the following indicators of the Responsible Care program:

- emissions into the atmosphere of gases leading to global warming: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs) in tons;
- consumption of energy resources: natural gas as a fuel and as a raw material for manufactured products in thousand cubic meters, liquid and solid fuels in tons;
- consumption of heat energy in Gcal and electricity in thousand kWh.

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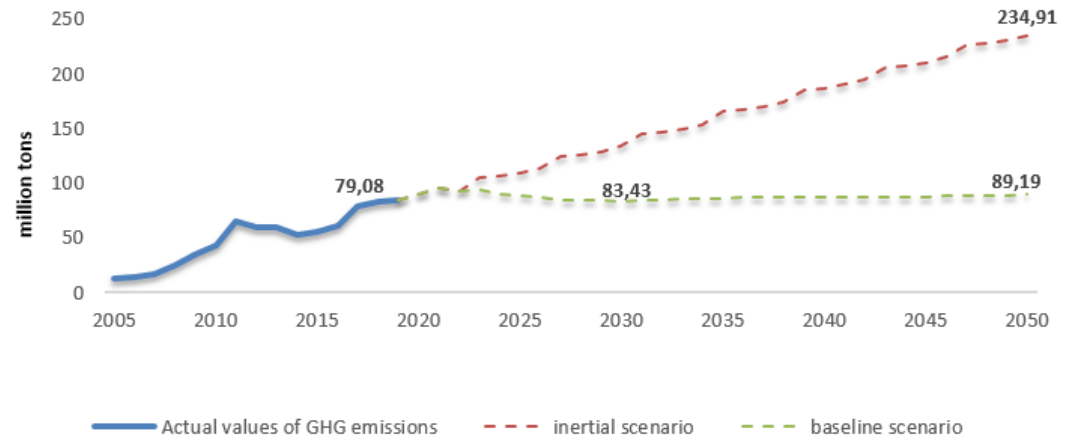
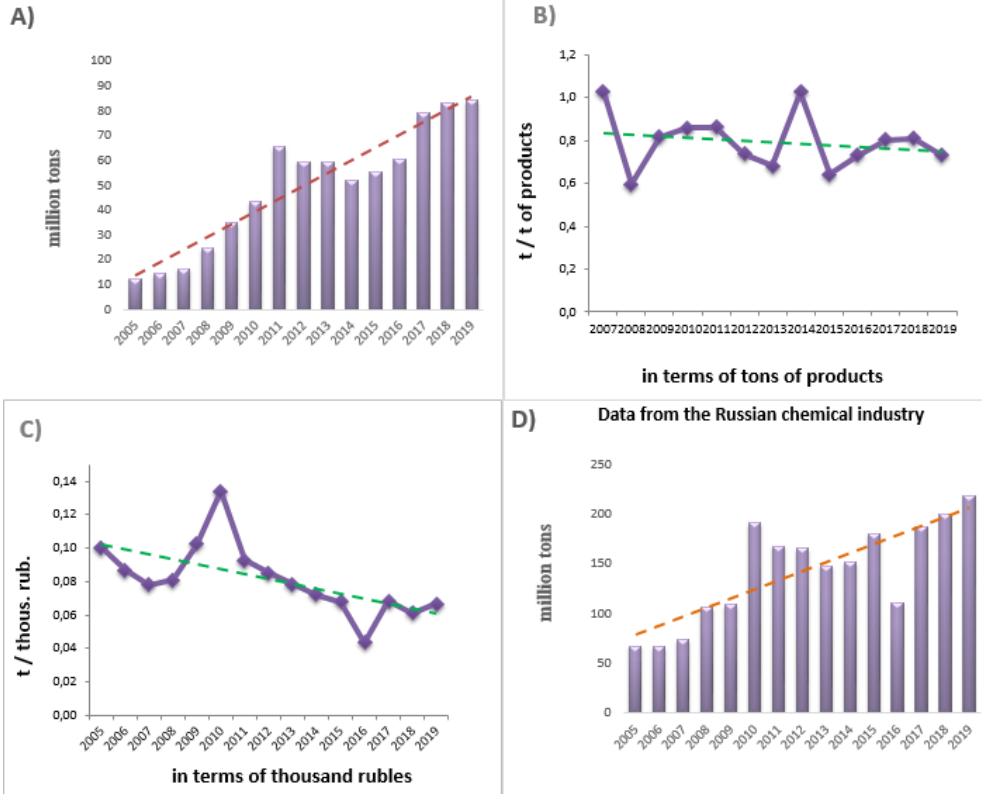
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Results



Forecast of changes in the amount of GHG emissions by enterprises of the chemical and petrochemical industries participating in the Responsible Care program by 2050

Impact assessment Chemical and Petrochemical Enterprises on Climate Change

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Reasons for the increase in GHG emissions:

1. Lack of strict carbon regulation in the Russian Federation, in particular, the federal law "On state regulation of greenhouse gas emissions and on amending certain legislative acts of the Russian Federation" has not yet been approved.
2. Lack of industry-specific methods for calculating the carbon footprint of products.
3. Lack of economic mechanisms of regulation in the field of GHG emissions.

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Suggestions for creating motivating tools for the transition to a low-carbon path of development

establishment of an award mechanism special (state) awards and premiums for contributions to reducing GHG emissions

introduction of a system of "green" public Procurement and environmentally friendly government orders

development of a system of tax incentives for enterprises that contribute to the reduction of the carbon footprint

Formation of a national register of enterprises carrying out activities to reduce the carbon footprint

Development of the green bond market

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Conclusions

The implementation of the low-carbon development trend will allow chemical industry enterprises to limit the content of greenhouse gases in the atmosphere, as well as

- demonstrating environmental responsibility;
- gain a competitive advantage in the market through the creation of low-carbon products that can be integrated into green supply chains;
- minimizing the reputational and financial risks associated with the regulation of greenhouse gas emissions, changing the behavior of buyers, lenders and investors.

References

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Thank you for your attention!

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** LLC KOLTECH-EcoChem

Contact details: * Annmakarova@mail.ru

** evg73057932@yandex.ru