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S. M. Zaliznytskyi
S. S. Nykyporets

ZERO EMISSION — REALITY OR FICTION?

Vinnytsia National Technical University

Анотація.

Лише сім галузей промисловості та транспорту становитимуть 38% усіх викидів CO_2 у світі у 2050 році, якщо не відбудуться суттєвих змін у нинішніх підходах. Послідовні дії, що виходять за рамки запланованої політики, можуть перевернути сторінку протягом решти 40 років та досягти нульових викидів у важкій промисловості та у транспортному секторі приблизно до 2060 року. Це є ключовою вимогою для обмеження глобального підвищення температури до 1,5 °C. Використання відновлюваних джерел енергії стане центральним, прискориться через стрімке падіння технологій та витрат на електроенергію.

Рішення щодо відновлюваної енергії для кожного з цих секторів доступні і можуть зіграти набагато більшу роль, ніж передбачалося раніше, свідчать попередні висновки нового майбутнього звіту IRENA (Міжнародне агентство з відновлюваних джерел енергії) «Досягнення нуля з відновлюваними джерелами». Тим не менш, для енергоємних промислових секторів, таких як залізо та сталь, хімікати, цемент та алюміній, а також для авіації на далеких відстанях, судноплавства та автомобільного вантажного транспорту, ці варіанти поки що не є готовими до широкого впровадження.

Ключові слова: викиди CO2, глобальне підвищення температури, відновлювальні джерела енергії, IRENA, досягнення нуля, промислові сектори, глобальний прогноз, досягнення, транспорт,

Abstract.

Just seven industries and transport will account for 38% of all global CO_2 emissions in 2050 unless there are significant changes in current approaches. Consistent action beyond the planned policy could turn the page over the remaining 40 years and achieve zero emissions in heavy industry and the transport sector by around 2060. This is a key requirement for limiting global temperature increase to 1.5 °C. The use of renewable energy sources will become central, accelerated by the rapid decline in technology and electricity costs.

Renewable energy solutions for each of these sectors are available and could play a much bigger role than previously thought, according to the preliminary findings of a new forthcoming IRENA (International Renewable Energy Agency) report, Getting to Zero with Renewables. However, for energy-intensive industrial sectors such as iron and steel, chemicals, cement and aluminium, as well as long-haul aviation, shipping and road freight transport, these options are not yet ready for widespread adoption.

Keywords: CO_2 emissions, global warming, renewable energy sources, IRENA, reaching zero, industrial sectors, global forecast, achievements, transport.

Introduction

By analyzing the challenges and options for reducing emissions for these hard-to-decarbonize sectors, the forthcoming report sends a strong signal to policymakers and industry investors to avoid the distraction of piecemeal measures and unerringly follow a path that expands multiple options in line with achieving the zero-emissions goal.

IRENA's first global renewables forecast showed how to transform the global energy system in line with the Paris Agreement, keeping temperature increases well below 2°C. A forthcoming report explores in detail how additional 'deeper decarbonisation' measures can go beyond to achieve zero emissions in key sectors by 2060 at the latest – in line with holding the 1.5°C line.

Achieving this ultimate global climate goal of zero emissions requires eliminating direct CO_2 emissions from both energy consumption and industrial processes. A key component will be the production of increasingly cost-effective renewable energy carriers, including electricity, biofuels, hydrogen and synthetic fuels to provide both energy and feedstock.

Industry

Industry accounts for almost a third of total global CO2 emissions, and four industrial sectors produce more than 21% of all current energy and process emissions. However, getting to zero can be achieved through a combination of measures — most of which use renewable energy sources for feedstock.

Key recommendations for governments and industry:

- Create demonstration projects to show what can be done and disseminate this information
- Create demand for "green" materials, for example through public procurement, corporate sourcing and minimum interest; creating a market to avoid "carbon leakage".
- Increase public and private funding and cross-border cooperation in technological R&D, including hydrogen-based iron production, bio- or synthetic chemicals, clinker alternatives, alternative construction technologies and materials, and the use of carbon removal technologies.
- Transfer production to areas with the potential of inexpensive renewable energy sources; it can create new supply chains as well as reduce emissions.
- Ensure the possibility of using production technologies compatible with zero emissions for countries with large production; developing economies will account for a high proportion of future production.

Transport

Transport accounts for just under a quarter of total CO_2 emissions globally, with the 3 long-haul transport sectors producing over 11% of all current energy and process emissions. Emissions can be reduced to zero through a combination of measures — including biofuels, hydrogen and synthetic fuels, and in some cases electrification.

Recommendations for governments and industry:

- Building on existing industry-wide international agreements to create a shared zero emissions vision and strategy for international shipping and aviation and jointly develop national and international roadmaps that have broad stakeholder support.
- Develop demonstration projects involving the use of low-carbon fuels and new propulsion designs to show what can be done and disseminate this information.
- Create early demand for low-carbon transport and use, for example, through gradually tightening standards, through corporate commitments and through public support to encourage and incentivize cost reductions.
- Increase public and private support and cross-border cooperation in R&D in sustainable biomass supply, biofuel production, synthetic fuel production and alternative engine designs.

Conclusion

In conclusion, the findings of the forthcoming IRENA report highlight a stark reality: seven industries and transportation are set to constitute a significant chunk of global CO_2 emissions by 2050, presenting a formidable hurdle to meeting climate goals. However, it also provides hope that adopting a holistic approach, where renewable energy is pivotal, can facilitate a drastic reduction in emissions. Though the energy-intensive sectors and long-haul transport methods currently face barriers to adopting these solutions, continuous innovation and technology development may unlock their potential to contribute to the climate solution. The race to zero emissions is indeed steep, but with relentless pursuit of renewables and stringent policy action, the world could keep its hope alive of limiting global temperature increase to 1.5 °C.

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Серафим Михайлович Залізницький – студент групи ECE-22M, факультет електроенергетики та електромеханіки, Вінницький національний технічний університет, м. Вінниця, e-mail: serafimbro27@gmail.com.

Науковий керівник: Никипорець Світлана Степанівна – викладач англійської мови кафедри іноземних мов Вінницького національного технічного університету, м. Вінниця, e-mail: fotinia606@gmail.com

Seraphim M. Zaliznytskyi – Student of group ESE-22M, Faculty of Power Engineering and Electromechanics, Vinnytsia National Technical University, Vinnytsia, e-mail: serafimbro27@gmail.com.

Scientific supervisor: Svitlana S. Nykyporets – teacher of English, Foreign Languages Department, Vinnytsia National Technical University, Vinnytsia, e-mail: fotinia606@gmail.com