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# STANDARDIZATION AS ONE OF THE IMPORTANT TOOLS IN ACHIEVING CARBON NEUTRALITY OF THE REPUBLIC OF KAZAKHSTAN UNTIL 2060

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## Аннотация

This article examines the steps taken by the Republic of Kazakhstan in the global fight against climate change, particularly the country's commitment to achieving carbon neutrality by 2060, in line with the Paris Agreement. The article emphasizes the importance of international standards, such as ISO, in supporting and implementing strategies for reducing greenhouse gas emissions and transitioning to clean energy.

More than 70 countries, including Kazakhstan, are adopting carbon neutrality standards. An important development is Kazakhstan's participation in the creation of new ISO standards that regulate emissions management at the organizational level. Kazakhstan also supports the ISO London Declaration, aimed at achieving climate agenda goals by 2050.

The article highlights the significance of integrating international standards into national policies and strategies for achieving carbon neutrality, including standards developed in Kazakhstan for climate change management, such as ST RK ISO 14068-1 and ST RK IWA 42. The adoption of these standards contributes to the creation of an effective emissions monitoring system and supports low-carbon technologies, thereby strengthening Kazakhstan's position on the international climate stage and accelerating the transition to a sustainable future.

*Keywords: carbon neutrality, climate change, international standards, London Declaration, emissions monitoring, low-carbon technologies.*

## Introduction

By joining the global fight against climate change, the Republic of Kazakhstan, within the framework of the Paris Agreement on Climate change, has committed itself to achieving carbon neutrality by 2060.

International standards around the world are helping to apply the experience gained by the international community, which are powerful strategic tools that help all of us contribute to achieving net zero emissions and creating a sustainable future.

Kazakhstan is a member of the International Organization for Standardization (ISO). To date, ISO has developed 605 standards in the field of carbon neutrality. In particular, a series of ISO standards have been developed for the calculation, monitoring, validation and verification of greenhouse gas emissions. (14064, 14065, 14066, 14067, 17029) which provide requirements and guidelines for organizations to quantify and report greenhouse gas emissions and removals.

International standardization. Kazakhstan has been a full member of the International Organization for Standardization ISO since 1994, participates in 130 technical committees and subcommittees, of which it is a full member of 100 TC/ISO and an observer member of 30 TC/ISO.

11 ISO/TC develop standards in the areas of carbon neutrality:

- 1) ISO/TC 207 "Environmental Management";
- 2) ISO/TC 268 "Sustainable cities and communities".
- 3) ISO/TC 146 "Air quality";
- 4) ISO/TC 163 "Thermal characteristics and energy consumption in a built environment";
- 5) ISO/TC 205 "Building design";
- 6) ISO/TC 197 "Hydrogen technologies";
- 7) ISO/TC 265 "Carbon dioxide capture, transportation and geological storage";
- 8) ISO/TC 59/PC 17 "Sustainability in buildings and construction works";
- 9) ISO/TC 301 "Energy management and energy

conservation";

10) ISO/TC 322 "Sustainable financing".

11) ISO/TC 322 "Circular Economy".

To date, more than 70 countries have implemented international carbon neutrality standards, and are conducting case studies providing examples of how standards and other initiatives, both national and international, address issues related to climate change. The research highlights the importance of applying standards in public policy, which can help accelerate the achievement of desired results and support the world to achieve carbon neutrality as soon as possible.

It should be noted that the current ISO standards on carbon neutrality are periodically updated to take into account new environmental challenges. KazStandart, being a member of the Technical Committee 207 "Environmental Management", is currently actively involved in the development of ISO standards that will regulate the quantification of greenhouse gas emissions at the level of organization and management of greenhouse gases.

New ISO standards are adapted by Kazstandart as needed on an ongoing basis.

The London Declaration. It should be noted that in September 2021, ISO signed the London Declaration aimed at combating climate change through standards, and defined ISO's commitments in order to achieve the climate agenda by 2050. Kazakhstan has joined the London ISO Declaration.

The London Declaration, signed in September 2021, is an impetus from ISO to change its approach to climate protection and advance international efforts to achieve the goals of "clean zero".

Following a recent study that showed that less than a quarter of the world's largest companies are on track to achieve major climate change goals, the Declaration includes key climate considerations in each new standard. Also, following this Declaration, ISO will retrospectively add these requirements to all existing standards as they are revised, which is an unprecedented change in scale.

The London Declaration, "ISO's Climate Commitments," was approved by ISO members representing 165 countries from around the world.

The Declaration states that ISO is committed to working with its members, stakeholders and partners to ensure that ISO's international standards and publications accelerate the successful achievement of the Paris Agreement and the Sustainable Development Goals.

National programs and standards. In 2023, the "Strategy for achieving Carbon neutrality of the Republic of Kazakhstan until 2060" was approved. Standardization was included in the Strategy as one of the approaches to achieve the set goal of the Strategy.

Standardization considers the large-scale implementation of international approaches and standards (ISO) in all sectors of the economy to achieve carbon neutrality.

Kazstandart also prepared and sent proposals to the draft Roadmap for the implementation of the Strategy for achieving Carbon Neutrality in the Republic of Kazakhstan until 2060.

At the same time, it should be noted that KazStandart is doing a lot of work on the development of standards in the areas of carbon neutrality. Currently, there are 7 Technical Committees for standardization in the field of ecology and carbon neutrality in the Republic of Kazakhstan:

1. TC 60 on standardization "Ecology. Environmentally friendly products, technology and services" on the basis of the International Academy of Ecology.

2. TC 102 on standardization of "Production and consumption waste" on the basis of the European-Asian Association Greeneconomy.

3. TC 103 on standardization of "Greenhouse gas management" on the basis of "GREENORDAPROJECT" LLP.

4. TC 112 on Standardization "Environmental Protection and Rational use of Natural resources at the Association of Environmental Organizations of Kazakhstan".

5. TC 117 "Renewable energy sources and alternative energy" on the basis of the NGO "Kazakhstan Association of Regional Environmental Initiatives "ECOJER".

6. TC 122 "Circular economy. Sustainable production and consumption" on the basis of the Kazakh Association for Waste Management "KazWaste".

7. TC 124 "Hydrogen Technologies" on the basis of the NGO "Kazakhstan Association of Regional Environmental Initiatives "ECOJER".

And also, 78 national standards of the Republic of Kazakhstan and 34 GOST standards on carbon neutrality are in force in the Republic of Kazakhstan.

Kazakhstan has taken an important step towards sustainable development by introducing new standards this year that will help the country achieve carbon neutrality by 2060. These standards, developed by Kazstandart under the Ministry of Trade and Integration of the Republic of Kazakhstan, are aimed at managing climate change and comply with international requirements.

The adopted documents include ST RK ISO 14068-1 "Climate Change Management. The transition to net zero. Part 1. Carbon Neutrality" and ST RK IWA 42 "Guidelines on Carbon Neutrality". They comply with the international standards ISO 14068-1:2023 and

IWA 42:2022 and become an important stage in the implementation of Kazakhstan's carbon neutrality strategy.

The adoption of these standards strengthens Kazakhstan's position in global climate policy and creates the basis for effective emissions management. The established standards offer uniform approaches for all participants, including environmental organizations and monitoring centers, which contributes to more effective control of greenhouse gas emissions.

The introduction of new standards will ensure greater transparency of climate data, increase confidence in them and support Kazakhstani companies in the international arena. It will also create opportunities for low-carbon technologies and industrial innovation, which is an important step towards an environmentally sustainable economy.

The development of these standards was carried out with the active participation of scientific organizations, experts and stakeholders. Various associations and organizations participated in the work, which underlines the importance of joint efforts to achieve carbon neutrality and Kazakhstan's integration into the international climate system.

### **Conclusions:**

Kazakhstan is actively involved in the global fight against climate change, having committed itself to achieving carbon neutrality by 2060. To achieve this goal, the country relies on international ISO standards, which serve as a powerful tool in the field of environmental management and sustainable development.

International standards such as ISO 14064 and others provide clear requirements for the calculation, monitoring and verification of greenhouse gas emissions. Kazakhstan is actively involved in the development and implementation of these standards, which contributes to effective climate risk management and ensures compliance with international environmental requirements.

Kazakhstan became a full member of ISO in 1994 and continues to develop cooperation with

international organizations, including within the framework of the London Declaration of 2021. This cooperation helps Kazakhstan to integrate the best international practices and standards into national legislation and economy.

An important step towards carbon neutrality was the approval of Kazakhstan's strategy until 2060, in which standardization played a key role. KazStandart is actively developing new standards and actively participates in the creation of a regulatory framework to ensure the achievement of carbon neutrality.

In 2023, Kazakhstan introduced new national standards, such as ST RK ISO 14068-1 and ST RK IWA 42, which will help to manage climate change more effectively and achieve carbon neutrality. These documents comply with international requirements and will contribute to increasing the transparency of climate data, strengthening control over greenhouse gas emissions and the introduction of low-carbon technologies.

Thus, Kazakhstan is taking important steps towards carbon neutrality by actively developing standards and cooperating with international organizations. The introduction of new standards and support for the international climate agenda contributes not only to improving the domestic environmental situation, but also to strengthening the country's position in the global market in the context of sustainable development and climate security.

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## СТАНДАРТТАУ – 2060 ЖЫЛҒА ДЕЙІН ҚАЗАҚСТАННЫҢ ҚАРБОННЫ НЕЙТРАЛДЫЛЫҒЫНА ЖЕТУДЕ МАҢЫЗДЫ ҚҰРАЛДАРДЫҢ БІРІ

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### **Аңдатпа**

Мақалада Қазақстан Республикасының ғаламдық климаттың өзгеруімен күрестегі қадамдары қарастырылады, атап айтқанда, Париж келісіміне сәйкес 2060 жылға дейін көміртегі бейтараптылығына қол жеткізу жөніндегі елдің міндеттемелері талқыланады. Мақалада парник газдарының шығарындыларын азайту және таза энергияға көшу стратегияларын қолдау және жүзеге асырудағы халықаралық стандарттардың, мысалы, ISO, маңызына ерекше назар аударылады.

Қазіргі уақытта көміртегі бейтараптығы стандарттарын енгізетін 70-тан астам ел бар, олардың қатарында Қазақстан да бар. Маңызды қадамдардың бірі — КазСтандарттың ұйымдар деңгейінде шығарындыларды басқаруды реттейтін жаңа ISO стандарттарын әзірлеуге қатысуы. Қазақстан сондай-ақ 2050 жылға дейін климаттық күн тәртібіне қол жеткізуге бағытталған ISO Лондон декларациясын қолдайды.

Мақала халықаралық стандарттарды ұлттық саясатқа және көміртегі бейтараптылығына қол жеткізу стратегиясына біріктірудің маңыздылығын, соның ішінде климаттың өзгеруін басқаруға арналған Қазақстанда әзірленген стандарттарды, мысалы, СТ РК ISO 14068-1 және СТ РК IWA 42 стандарттарын атап өтеді. Осы стандарттарды қабылдау шығарындыларды бақылау жүйесін тиімді құруға және төмен көміртекті технологияларды қолдауға ықпал етеді, бұл өз кезегінде Қазақстанның халықаралық климаттық аренадағы позицияларын нығайтады және тұрақты болашаққа өтуді жеделдетеді.

*Кілт сөздер: көміртегі бейтараптылығы, климаттың өзгеруі, халықаралық стандарттар, Лондон декларациясы, шығарындыларды бақылау, төмен көміртекті технологиялар.*

## СТАНДАРТИЗАЦИЯ КАК ОДИН ИЗ ВАЖНЫХ ИНСТРУМЕНТОВ ДОСТИЖЕНИЯ УГЛЕРОДНОЙ НЕЙТРАЛЬНОСТИ РЕСПУБЛИКИ КАЗАХСТАН ДО 2060 ГОДА

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### **Аннотация**

Статья рассматривает шаги Республики Казахстан в рамках глобальной борьбы с изменением климата, в частности, обязательства страны по достижению углеродной нейтральности до 2060 года в соответствии с Парижским соглашением. В статье акцентируется внимание на важности международных стандартов, таких как ISO, в поддержке и реализации стратегий по снижению выбросов парниковых газов и переходу к чистой энергетике.

Существует более 70 стран, внедряющих стандарты углеродной нейтральности, среди которых и Казахстан. Важным шагом является участие КазСтандарта в разработке новых стандартов ISO, которые регулируют вопросы управления выбросами на уровне организаций. Казахстан также поддерживает Лондонскую декларацию ISO, направленную на достижение целей климатической повестки до 2050 года.

Статья подчеркивает значимость интеграции международных стандартов в национальную политику и стратегию достижения углеродной нейтральности, включая стандарты, разработанные в Казахстане для управления изменением климата, такие как СТ РК ISO 14068-1 и СТ РК IWA 42. Принятие этих стандартов способствует созданию эффективной системы мониторинга выбросов и поддержке низкоуглеродных технологий, что в свою очередь, укрепляет позиции Казахстана на международной климатической арене и ускоряет переход к устойчивому будущему.

*Ключевые слова: углеродная нейтральность, изменение климата, международные стандарты, Лондонская декларация, мониторинг выбросов, низкоуглеродные технологии*