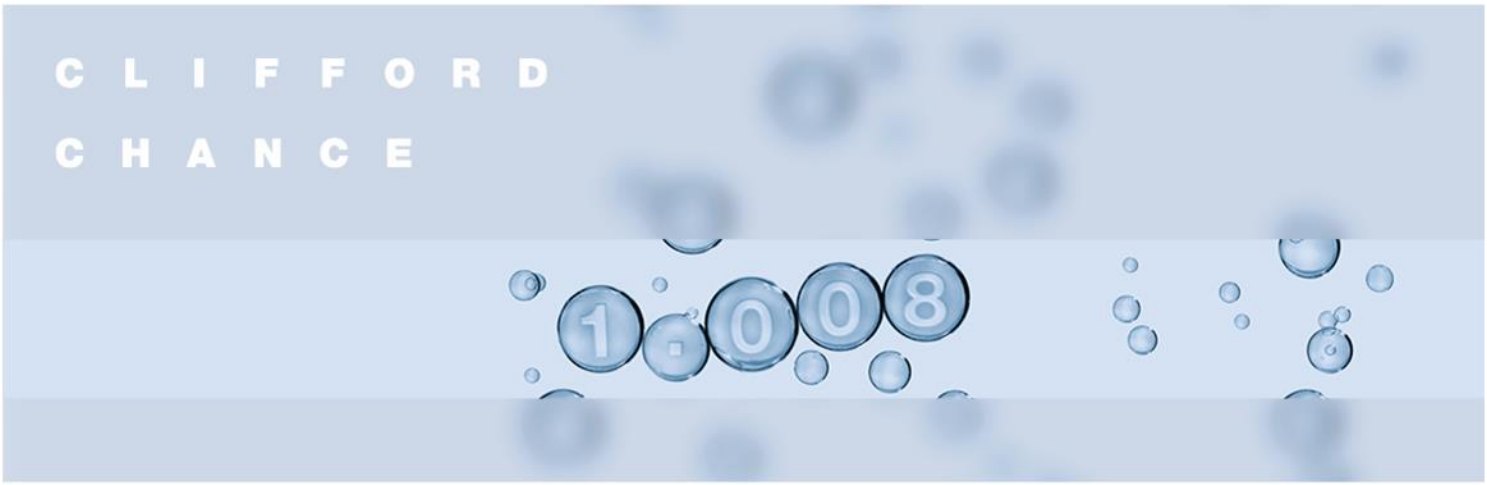


FOCUS ON HYDROGEN: RUSSIA'S ENERGY AND LOW-CARBON STRATEGY UP TO 2050

Two of the fundamental challenges facing us in the 21st century are environmental pollution and climate change, the latter largely due to rising levels of greenhouses gases (GHG) in the atmosphere, mostly generated by the production and burning of fossil fuels. The issues of energy efficiency and the need to switch to 'clean' and renewable fossil fuel substitutes are now at the fore politically. Clean hydrogen is a promising alternative to fossil fuels in several settings, and Russia, an important fossil fuel producer, is interested to be part of the transition.

Key issues

- The Energy and low-carbon Strategy to 2050 envisages a low-carbon economy in which hydrogen will play an important role.
- The Ministry of Energy has produced a short term Road Map for the use of hydrogen, including pilot projects and business incentives.
- The Government's Hydrogen Energy Concept prioritises key areas for the development of the hydrogen economy in a three-stage plan up to 2050.
- A legal framework for limiting greenhouse gas emissions is being developed, including a new Federal law.

The global community's concern that the adverse consequences of human-induced climate impacts would be irreversible prompted the signing in 1992 of the United Nations Framework Convention on Climate Change, or UNFCCC, with the aim of keeping atmospheric GHG concentrations at climate-safe levels. One step toward implementing the Convention's goals was the Kyoto Protocol, which came into force in 2005, and another was the adoption of the Paris Agreement on 12 December 2015, which, among other things, set out a pathway for decarbonising the economy. Russia ratified the Paris Agreement on 21 September 2019.

Russia has taken the following steps to implement the Kyoto Protocol:

- A national regulatory framework for monitoring GHG emissions is under development.
- A framework for investment projects to reduce GHG emissions has been created and a new law to curb GHG emissions has recently been passed.
- Russian officials have reported a 37% reduction in the country's GHG emissions over the past 20 years and a 31% reduction against the 1990 baseline, which is in line with Russia's commitments under the first phase of the Kyoto Protocol.

Although Russia has opted out of the second phase of the Kyoto Protocol, it is party to the Paris Agreement[1].

[1] Ratified by Government Decree No. 1228 of 21 September 2019

As part of the measures to reduce GHG emissions and implement the Paris Agreement, Russia has begun to develop and regulate clean hydrogen , one of the most important potential sources of clean energy.

The following instruments, cornerstones of an extensive legal framework, have now been adopted:

- the Energy Strategy to 2035;
- the Strategy for Low-carbon Development up to 2050;
- the Hydrogen Energy Development Plan and Development Concept; and
- the Law on Limiting GHG Emissions.

Energy Strategy to 2035

The Government has approved an energy strategy for the period up to 2035. This strategy provides a sustainable development model for Russia, featuring a low-carbon economy in which hydrogen energy technologies are to play special roles ("**Energy Strategy to 2035**")[2].

One goal of the Energy Strategy to 2035 is to use renewable energy to improve energy supplies in remote and isolated areas through the use of renewable energy sources, by:

- improving national standards relating to renewable energy sources;
- supporting Russian exports of equipment and services for the design, construction, operation and maintenance of renewable-energy generating facilities;
- improving incentives for renewable energy development;
- stimulating voluntary demand for electricity generated from renewable energy sources;
- diversifying energy sources, i.e. promoting and developing low-carbon energy sources; and
- mitigating the adverse environmental impact of the fuel and energy sectors and adapting them to climate change.

Hydrogen energy technologies are to play a particular role in the development of a low-carbon economy in Russia. The plan is for hydrogen, which is chiefly used today in the chemical and petrochemical industries, to become a new major energy carrier, partially replacing hydrocarbon energy and shaping a new hydrogen economy.

Hydrogen Energy

To promote hydrogen energy, the Ministry of Energy has produced a short-term action plan for hydrogen energy development in Russia up to 2024 (the "**Road Map**"). The Road Map lays the legal, scientific, technological and human-resource foundations for the use of hydrogen as a clean energy source. It envisages various hydrogen-based pilot projects to increase energy

[2] Approved by Government Decree No. 1523-p of 9 June 2020

efficiency and reduce emissions, plus incentives for businesses to engage with these projects.

On 5 August 2021, the Government approved the Hydrogen Energy Development Concept for Russia (the "**Concept**"), which declares the development of a low-carbon economy to be a national priority.

The Concept places an initial, very precise focus on certain key areas that will be suitable for developing the hydrogen economy. At this stage, the systems and priorities will be narrowly focussed. These are: carbon capture technologies as used in nuclear power plants (where carbon dioxide gas is captured); water electrolysis systems powered by nuclear plants, hydroelectric plants, and electricity grids to achieve the appropriate carbon footprint; and tapping renewable energy sources in regions where it is cost competitive to generate hydrogen using renewable sources.

The Concept states that using hydrogen wherever it is economically feasible to do so in Russia's domestic market will help to attract investment, mitigate foreign-economic risks and meet the country's climate change obligations. However, the Concept's main emphasis is on the development of hydrogen-based export products. Russia's hydrogen exports could amount to as much as 200,000 tonnes in 2024, 2–12 million tonnes in 2035 and 15–50 million tonnes in 2050, depending on the pace of development of the world's low-carbon economy and growth in global clean hydrogen demand.

The Concept outlines practical steps in a three-stage plan for hydrogen energy development:

- Stage 1 (to be implemented in 2021–2024): the creation in Russia of research and production hubs to develop hydrogen generation, with a target hydrogen export level for hydrogen pilot projects of up to 200,000 tonnes in 2024. These hubs will be set up in the North West (for hydrogen exports to the EU), the East (for exports to Asia), the Arctic (low-carbon energy development in that region) and the South (developing the use of renewable energy sources and other low-carbon energy sources in Russia's southern regions).
- Stage 2 (2025-2035): launch of the first commercial hydrogen production facilities with target export volumes of up to two million tonnes in 2035 (best-case target – 12 million tonnes). This stage involves the creation of major export-oriented hydrogen production facilities and the implementation of pilot projects to utilise hydrogen in Russia's domestic market based on Russian technologies.
- Stage 3 (2036-2050): wide-scale development of a global hydrogen energy market. By 2050, hydrogen supplies to the world market could reach 15 million tonnes (best-case – 50 million tonnes). The aim here is for cost of producing hydrogen using renewable energy sources to come closer to the cost of producing it from raw fossil fuel, enabling major projects for producing and exporting low-carbon hydrogen derived from renewable energy sources.

Strategy for Low-carbon Development up to 2050

The Strategy for Low-carbon Development up to 2050[3] contemplates two economic development scenarios: (a) a business as usual scenario and (b) an intensive scenario.

The intensive scenario is the targeted scenario according to the Strategy. It involves measures to reduce total emissions by 910 million tonnes of carbon gas equivalent against the business as usual scenario by 2050. Putting in place absorption enhancements will provide further reductions of up to 665 million tonnes of carbon gas equivalent by 2050.

The intensive scenario aims to reduce net greenhouse gas emissions by 60 percent against their 2019 level and 80 percent against their 1990 level by the Strategy's 2050 end date.

The Government intends to systematically roll out a package of finance, customs and tax policy measures that will act as a stimulus for low-carbon projects. These include:

- the introduction of carbon pricing;
- the introduction of a quota system for GHG;
- statutory requirements mandating the use of and incentives for introducing low greenhouse gas emission technologies;
- the roll-out, duplication and scaling of zero-carbon technologies and technologies with low greenhouse gas emissions;
- adjustments of taxes, subsoil use fees etc. for mineral extraction and other activities;
- fundraising for 'green projects' through targeted bond and loan schemes;
- standards for climate project validation and verification systems and carbon-accounting verification systems;
- certificates of origin for energy – electricity produced by zero-carbon generating facilities and generating facilities with low greenhouse gas emissions, which will confer rights on the basis of positive environmental and social effects: reductions in greenhouse gas emissions, waste volumes and harm to the environment and human health;
- the development of public non-financial reporting that includes key parameters for evaluating companies' sustainability in the context of climate, social and management risks;
- stimulus for the use of secondary energy resources and the integration of waste into production cycles and goods manufacturing, including as recyclables or in fuel production;
- accounting of impacts that state-funded expenditure and investments have on the greenhouse gas balance; and
- support for greenhouse-gas capture, storage and recycling technologies and the widespread adoption of them.

[3] Government Executive Order No. 3052-r of 29 October 2021

Limiting GHG emissions

As mentioned above, under its general emission-abatement policy, the government is developing a comprehensive legal framework for limiting GHG emissions.

In November 2020, the Russian President signed the Decree on the Reduction of GHG Emissions, which requires the Russian government to reduce GHG emissions to 70% of 1990 levels by 2030.

The Ministry of Natural Resources and Ecology has adopted two directives, one in 2015 covering direct GHG emissions and another in 2017 covering indirect GHG emissions. Each directive sets out a methodology for calculating GHG emissions, whereby data on GHS emissions is to be collected over one-year reporting periods by companies whose commercial operations generate them. Companies are required to keep their GHG emissions data in hard copy and electronically for five years following the reporting period, as part of their official internal records.

On 2 July 2021, Federal Law No. 296-FZ On Limiting Greenhouse Gas Emissions was adopted; it will come into force on 30 December 2021 (the "**GHG Emissions Law**"). This law forms the legal basis for gathering complete GHG emissions data and creating a system for the public accounting of GHG emissions and the implementation of emission reduction projects. It marks a major milestone in the development of GHG abatement legislation that Russia has been lacking up to now.

Under the GHG Emissions Law, companies will be subject to mandatory carbon reporting requirements if:

- starting in 2023, their direct GHG emissions exceed 150,000 tonnes of carbon dioxide equivalent per year; and
- after 2024, their direct GHG emissions exceed 50,000 tonnes of carbon dioxide equivalent per year.

The government will specify which industrial sectors must meet these requirements; companies in other sectors will be able to report on a voluntary basis. The state will use the mandatory carbon reports to monitor GHG emission rates. Failing to submit a report or concealing or wilfully falsifying information may lead to administrative charges and administrative fines.

The GHG Emissions Law provides a framework for climate projects. The government is going to develop a state-support system for climate projects and project outcomes will be subject to verification, although the verification mechanism has yet to be created. Climate project information will be entered in a register of carbon units. Carbon units produced by a climate project will be credited to the party implementing the project in the carbon units register and used to assess whether the target for reducing greenhouse gas emissions has been reached. The government will develop a system of state support for climate project developers..

The carbon units put into circulation by implementing these projects will be recorded in a special carbon units register. The rules for keeping the register will be laid down by the government, which will also appoint a registrar operator.

It is thought that these carbon units might become tradeable, so the GHG Emissions Law is laying the foundation for the creation of a carbon units market.

Conclusion

Russia appears slowly but surely moving towards having a legal framework that aims to enable it to meet its commitments under the UNFCCC, the Kyoto Protocol and the Paris Agreement. Although the concepts, plans, and laws have not yet been elaborated in detail and contain numerous references to other regulatory acts (presidential, governmental and ministerial) that have yet to be passed or even drafted, the legislative and regulatory developments of 2020 and 2021 in this area have far outpaced previous periods, generating the hope that a transition is taking place from concepts and plans to concrete steps and action.

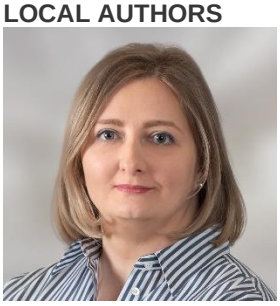
ABOUT

Focus on Hydrogen is a Clifford Chance briefing series covering hydrogen-related developments globally. 1.008 is the standard atomic weight of hydrogen.

For more hydrogen publications, please see our webpage here.

CONTACTS

LOCAL AUTHORS



Ella Omelchenko
Counsel, Moscow

T +7 495258 5054
E ella.omelchenko
@cliffordchance.com

HYDROGEN LEADS

Anthony Giustini
Partner, Paris

T +33 1 44 05 59 26
E anthony.giustini
@cliffordchance.com

Eleanor Hooper
Knowledge Development
Lawyer, London

T +44 20 7006 2464
E eleanor.hooper
@cliffordchance.com

Naz Khan
CMD Executive
Manager, London

T +44 20 7006 2588
E naz.khan
@cliffordchance.com

GLOBAL CONTACTS

Liesbeth Buiter
Partner, Amsterdam

T +31 20 711 9326
E liesbeth.buiter
@cliffordchance.com

Patrice Viaene
Senior Associate,
Brussels

T +32 2 533 5925
E patrice.viaene
@cliffordchance.com

Ouns Lemseffer
Partner, Casablanca

T +212 5 2000 8615
E ouns.lemseffer
@cliffordchance.com

Mohamed Hamra-Krouha
Partner, Dubai

T +971 2 613 2370
E mohamed.hamra-krouha
@cliffordchance.com

CONTACTS

GLOBAL (CONTINUED)

Björn Heinlein
Partner, Düsseldorf

T +49 211 4355 5099
E bjoern.heinlein
@cliffordchance.com

Vicky Ma
Partner, Hong Kong

T +852 2825 8955
E vicky.ma
@cliffordchance.com

Clare Burgess
Partner, London

T +44 20 7006 1727
E clare.burgess
@cliffordchance.com

Clara Alcaraz
Senior Associate, Madrid

T +34 91 590 9498
E clara.alcaraz
@cliffordchance.com

Umberto Penco Salvi
Partner, Milan

T +39 02 8063 4241
E umberto.pencosalvi
@cliffordchance.com

Gauthier Martin
Partner, Paris

T +33 1 4405 5181
E gauthier.martin
@cliffordchance.com

Phil Sealey
Partner, Perth

T +61 8 9262 5542
E philip.sealey
@cliffordchance.com

Mel Chan
Senior Associate, Singapore

T +65 6506 2771
E mel.chan
@cliffordchance.com

Nadia Kalic
Partner, Sydney

T +61 2 8922 8095
E nadia.kalic
@cliffordchance.com

Hans Menski
Partner, Tokyo

T +81 3 6632 6669
E hans.menski
@cliffordchance.com

Peter Hughes
Counsel, Washington, D.C. *(US coverage)*

T +1 202 912 5135
E peterc.hughes
@cliffordchance.com

Jessica Springsteen
Partner, Washington, D.C. *(LatAm coverage)*

T +1 202 912 5008
E jessica.springsteen
@cliffordchance.com