

Hydrogen energy in Russia: a strategic development plan and international potential

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In order to be implemented, European hydrogen initiatives expressly refer to the need for hydrogen imports. These initiatives even list individual countries as potential hydrogen exporters, but none of the lists include Russia, which is currently the largest supplier of conventional carbon energy to Europe.

Russia's place on the international hydrogen energy map

Clearly, Russia has not yet focused on renewable energy resources or the creation of hydrogen energy. Oil, gas and coal remain its predominant energy resources. On the other hand, Russia committed to reducing its carbon dioxide (CO₂) emissions by signing the Paris Climate Agreement. The development of renewable energy is in progress, as we have previously [reported](#). Moreover, for Russia's energy sector, it is becoming clear that Europe, with its goal of decarbonising the economy by 2050, would no longer be the primary consumer of conventional energy sources. If Russia wants to continue playing its role of energy supplier to Europe, it must recognise and adapt to these realities.

In our article on Russia in the [CMS Expert Guide to hydrogen law and regulation](#), we outlined the current situation in the hydrogen energy sector. Its main conclusion was that this sector lacks proper regulation in Russia. However, after the publication of this article, Russia adopted and published the [Plan of Action "Development of Hydrogen Energy in the Russian Federation to 2024"](#)^{*}, which has become the first official document on the development of hydrogen energy in Russia.

Plan for the development of hydrogen energy in Russia to 2024

Covering the period up to 2024, the Plan is short-term with preparation and organisation to be conducted by the Ministry of Energy, the Ministry of Economic Development, the Ministry of Industry and Trade, the St. Petersburg Mining University and other specialised organisations. These bodies should create conditions for the formation of a Russian hydrogen-energy sector within a prescribed timeframe. In particular, the Plan provides for the following activities:

- strategic planning;
- incentives and state-support measures;
- formation of production capabilities;
- implementation of priority pilot projects;
- scientific and technical development;
- improvement of the regulatory framework; and
- development of human resources and international cooperation.

The Plan's main provisions will be specified in more detail later.

Under the Plan, major strategic planning actions are to be implemented during the first quarter of 2021. By that time, the concept of the development of hydrogen energy in Russia should be drafted. A project office to implement this concept and an inter-agency working group at ministerial levels will also be set up. By the end of 2021, Russia should have a hydrogen generation monitoring system in place.

By mid-2021, state support measures should be developed for hydrogen exports and domestic demand for hydrogen.

Pilot projects should be identified on a priority basis by the end of the first quarter of 2021 in order to form production capabilities. The Plan already envisages the involvement of large publicly owned energy companies (Rosatom, Gazprom) in such projects. Other market participants, such as Rosneft and Rusnano, have also expressed interest. Pilot projects are due to be implemented by 2024.

The projects specified in the Plan include:

- setting up capacities for the generation of "green" (using renewables), "blue" (from natural gas with CO₂ capture) and "yellow" (using atomic energy) hydrogen;

- developing and manufacturing gas turbines running on methane-hydrogen fuel;
- creating a prototype model of hydrogen-fuelled railway transport.

Research and technology support will focus on studying hydrogen production, storage and transportation technologies. Studies will cover the prevention of greenhouse-gas emissions in hydrogen production and the use of nuclear energy for hydrogen production.

The regulatory framework in this field will be created by updating and developing statutory acts, national standards and technical regulations.

Interestingly, the Plan has a separate section devoted to the development of international cooperation. Above all, the section provides for long-term bilateral cooperation with hydrogen-producing and hydrogen-consuming countries.

Specific proposals for the development of international cooperation must be prepared by the third quarter of 2021. Russian hydrogen and hydrogen-power technologies will be promoted in international markets.

Assessment and prospects

Taking into account the utmost importance of the energy sector in Russia and the fact that the behaviour of its main power consumers (e.g. European countries) is expected to change considerably, this Plan has arrived at the eleventh hour. However, it is clear from the Plan's orientation that Russia sees itself as a hydrogen producer. Although the Plan considers the Russian domestic market, its main focus is the country's role as a hydrogen exporter. Russia's willingness to produce and supply blue and yellow, and – over the long run – green hydrogen will be an essential prerequisite for access to the European market.

If the Plan is implemented as intended, important decisions could be adopted as early as the first quarter of 2021, such as drafting the concept of hydrogen-energy development in Russia.

For the present, Russia is making it abundantly clear that it plans to continue its role as an energy supplier to Europe in the foreseeable future.

For more information on this eAlert, please contact CMS Russia experts [Dr. Thomas Heidemann](#), [Dmitry Bogdanov](#) or your regular contact at CMS Russia.

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