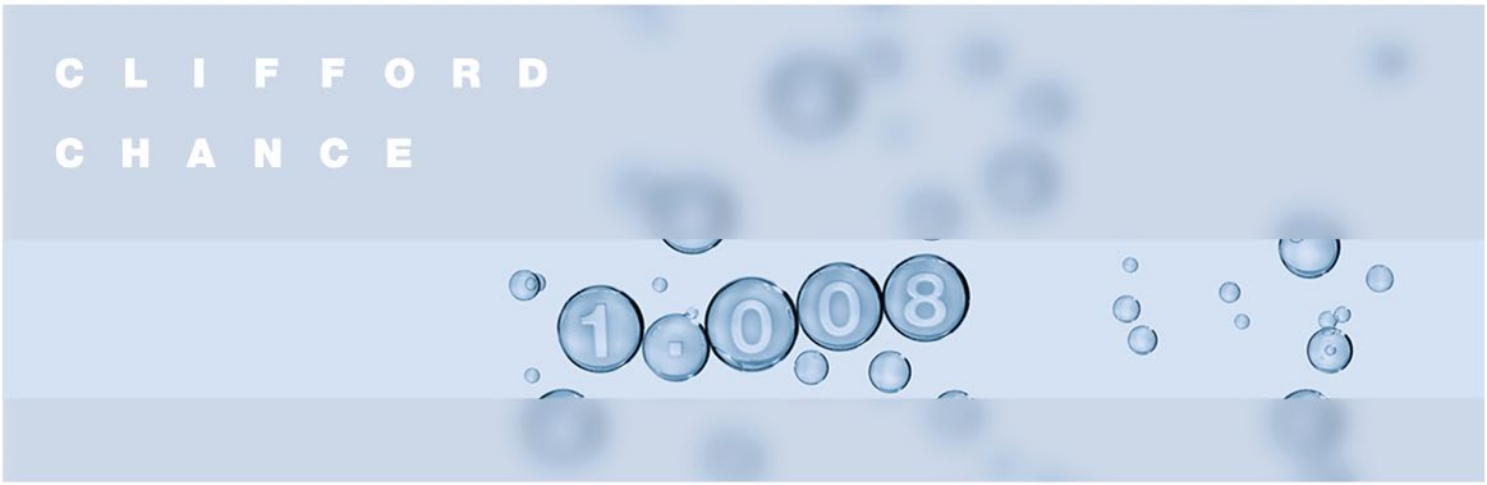

FOCUS ON HYDROGEN: BELGIUM ANNOUNCES HYDROGEN VISION AND STRATEGY AS PART OF ENERGY TRANSITION PLAN

On 29 October 2021, the Belgian Federal Government launched its long-awaited Hydrogen Vision and Strategy, which aims to turn Belgium into an import and transit hub for clean hydrogen in Europe. This briefing provides an outline of the Belgian Strategy and some of its implications.

Key issues:

- Strategy based on four pillars focusing on clean hydrogen import and cooperation
- Preference for renewable hydrogen, low-carbon hydrogen mainly seen as a transitional technology
- By 2026, open-access hydrogen backbone with specific target to create 100 to 160 kilometres of hydrogen pipelines
- Financial support for hydrogen projects in the Energy Transition Plan and the COVID-19 recovery fund
- Support to establish Belgium as global hydrogen technology leader

THE BELGIAN HYDROGEN VISION AND STRATEGY: A GLOBAL VISION BASED ON FOUR PILLARS

The Belgian Hydrogen Vision and Strategy (the "**Belgian Strategy**") was approved by the Council of Ministers on 29 October 2021 in the broader context of government-focused ambitions to promote the development of a hydrogen market in Belgium, as well as its 2030/2050 energy and climate objectives. The Belgian Strategy assumes that the current demand in Belgium for both hydrogen and its derivatives will reach between 125 and 175 TWh/year by 2050 (including bunkering fuels). The Federal Government considers its Strategy as an essential policy tool to improve the security of supply and the cost-effectiveness of the energy system. It is based on four pillars, and it builds further on the ambitions of the European Commission to reduce greenhouse gas emissions by at least 55% by 2030 and to achieve climate neutrality by 2050.

Renewable or low-carbon hydrogen?

The Belgian Strategy addresses both "renewable" and "low-carbon" hydrogen, akin to the distinction made by the European Commission in its Hydrogen Strategy, without relying on the typical taxonomy of "green" or "blue" hydrogen (see our client briefing of 18 June 2020).

The dichotomy between renewable and low-carbon hydrogen is perhaps more pronounced in the hydrogen strategies of other EU member states, and notably of Germany and France. While France commits itself to invest in renewable and low-carbon hydrogen with the emphasis on renewable hydrogen in particular, the German strategy takes the view that "only hydrogen produced on the basis of renewable energies is sustainable in the long term".

The Belgian Strategy seems closer to the German model of only using low-carbon hydrogen on a "transitional basis". For example, it emphasises that to achieve climate neutrality, the large-scale deployment of hydrogen in the long term only makes sense if it is produced from renewable energy sources. In fact, the Belgian Strategy contemplates that only renewable hydrogen will form a part of Belgium's energy mix by 2050. As a transitional measure, however, it

takes the view that low-carbon hydrogen will still play a role in accelerating the reduction of CO2 emissions and kick-starting the market. As such, the Belgian Strategy aims at a phased approach to achieve the lowest possible carbon emissions, whilst at the same time establishing a level playing field for hydrogen in the current economic context. One of the low-carbon alternatives that could be explored during this transition phase is hydrogen produced by pyrolysis from fossil methane.

Target sectors

The Federal Government identifies three main sectors in which renewable hydrogen can help achieve carbon neutrality by 2050:

- **Industry**. Hydrogen could serve as a sustainable alternative to fossil fuels in the production of steel, cement, ceramics or glass – but also in the recycling of plastics, etc.
- **Transport**. The transport sector today still relies heavily on fossil fuels, making electrification a top priority. The benefits of renewable molecules in terms of recharging time, autonomy or weight and volume for energy storage in the vehicle should nevertheless justify the energy losses and higher costs of renewable molecules such as hydrogen. Potential uses of hydrogen in the transport sector include cars and trains, the road freight transport, inland navigation shipping as well as the aviation sector.
- **Flexibility of the power grid**. Hydrogen and its derivatives have physical properties that make them suitable for storage of large amounts of energy in the medium to long term. Hydrogen can be used as a complement to batteries to store excess production from intermittent renewable energy sources (e.g. wind or solar) and make such energy available at times of shortage. Although the Belgian Strategy acknowledges that Belgium has relatively limited potential for underground hydrogen storage, the authorities wish to develop at least some storage capacity for security of supply purposes.

The Belgian's Strategy's four pillars

The Belgian Strategy intends to position Belgium as (1) an import and transit hub in Europe for clean hydrogen, (2) a global leader in hydrogen technologies, (3) a robust hydrogen market, via the implementation of an open access hydrogen transportation backbone and (4) a convener for the various stakeholders (industries, regions, neighbouring countries and third-party exporting countries) to join forces and share expertise.

FIRST PILLAR: BELGIUM AS AN IMPORT HUB FOR RENEWABLE HYDROGEN IN EUROPE

The Belgian Strategy aims to turn Belgium into an import and transit hub for clean hydrogen in Europe. As such the Belgian Strategy follows a pragmatic approach since it acknowledges that (1) hydrogen cannot be used in all segments of the economy, and (2) Belgium has limited excess renewable energy for renewable hydrogen production.

The focus should therefore be on transport over long distances and end-use business models requiring the specific physical characteristics of hydrogen (such as the petrochemical industry). The Belgian Strategy also outlines that Belgium should only focus on its own production capacity to the extent that local production is more efficient and cheaper than the import of renewable energy. Nevertheless, the development of electrolysis technology remains an essential part of the Belgian Strategy, both to gain expertise in the operation of

these units and to support the technological development of Belgian companies wanting to become industry leaders. Belgium has set a target of having at least 150 MW of electrolysis capacity in operation by 2026.

It is worth noting that the Netherlands, Germany and Northern France face similar issues. They also have limited renewable energy sources and consequently will need to import hydrogen.

Belgium sees its central and strategic location in the region as an important asset to becoming an import hub. Belgium has important ports in the North Sea and is primed for investment in infrastructure for the import and transportation of hydrogen and other renewable molecules.

The creation and strengthening of the interconnections with neighbouring countries and regions should also contribute to a liquid and competitive market across Central Western Europe, strengthening the negotiating position vis-à-vis producers and ensuring the competitiveness of Belgium's industrial players.

The Belgian Strategy lays down two preconditions for the realisation of a Belgian import and transit hub for clean hydrogen in Europe:

- A cross-jurisdictional certification system for renewable fuels, covering hydrogen and its derivatives produced from renewable electricity;
- Conclusion of Memoranda of Understanding (MoUs) with potential partners both inside and outside Europe to set the guidelines for possible cooperation in the import of renewable molecules to and via Belgium. One step towards this international cooperation was taken last week during the COP26 in Glasgow, where Belgium signed a MoU with Namibia concerning hydrogen.

SECOND PILLAR: BELGIUM AS GLOBAL LEADER IN HYDROGEN TECHNOLOGIES

The Federal Government intends to turn Belgium into a global leader in hydrogen technologies in light of the numerous Belgian companies and research centres already active in the hydrogen value chain. The Belgian Strategy aims to maintain and strengthen this leading position which Belgium enjoys in hydrogen and related technologies by reorganising research and development in this field.

Two financial support mechanisms for hydrogen projects also aim to foster these objectives:

- The Energy Transition Fund, which will remain operational until 2025 and support, among other things, research and development in the field of production, transport and storage of hydrogen and hydrogen-derived products; and
- The COVID-19 recovery fund for Belgium, from which the Federal Government plans to allocate EUR 50 million in support to various projects for the further development of technologies for the production and use of hydrogen and its derivatives.

The Federal Government will explore further ways to support producers of electrolysers through certain tax incentives (e.g. by temporarily reducing certain tariffs or contributions for electricity levied at the federal level).

At the same time, we still await wider support mechanisms for hydrogen projects, such as Carbon Contracts for Differences (CCFD). These types of

market-conform support schemes could help the further decarbonisation of energy-intensive industries willing to use renewable hydrogen and as such also indirectly support Belgian companies developing their electrolysis capacities. A CCFD will of course need to pass State aid tests, but it might be an efficient tool to bridge the cost-gap between renewable and low-carbon hydrogen, on the one hand, and fossil-based hydrogen, on the other hand.

THIRD PILLAR: A ROBUST HYDROGEN MARKET AND THE CREATION OF A HYDROGEN BACKBONE

The most important pillar is likely to be the third, whereby the Federal Government plans to bolster a robust hydrogen market via the implementation of an open access-hydrogen transportation backbone, to be completed by 2030.

As mentioned above, Belgium's strategic location makes it a promising transit hub for hydrogen. The development of such a transit hub requires massive investment in the transformation of the existing natural gas grid. With this in mind, the Federal Government aims to create an open-access hydrogen backbone. In essence, the rationale behind the creation of an open-access backbone is to support the emergence of a hydrogen economy in Belgium and more broadly in Central West Europe. By connecting industrial clusters initially distant from the existing privately owned hydrogen transport infrastructure in Belgium, these clusters can gain access to renewable molecules and make their activities more sustainable.

This backbone is likely to be operated by the gas transmission system operator Fluxys, which will, as a first step, create between 100 and 160 kilometres of hydrogen pipelines by 2026. This should make large scale renewable hydrogen import possible and is in line with the Belgian Strategy's first pillar to make Belgium a hub for hydrogen import into Europe.

The Strategy envisages repurposing existing gas grids as far as possible, and where necessary establishing dedicated hydrogen grids.

In a second phase, additional investments will be required to meet Belgium's ambition to connect its hydrogen network with its neighbouring countries by 2030. This ambition builds further on the Belgian Strategy's first pillar to turn Belgium into an import and transit hub for renewable energy in Europe.

These various plans will need to be implemented in detailed legislation. The Belgian energy minister aims to present a preliminary framework for such legislative implementation in 2022. This legislative workstream will be essential to guarantee third party access to infrastructure and to ensure fair treatment of all its users. The draft proposals will be followed by a public consultation of the potential market participants before the final draft is presented to Parliament.

It will be interesting to see to what extent the Belgian Federal Government's legislative proposal will anticipate the upcoming revision of the 3rd Gas Directive and Gas Regulation (together, the "**Gas Package**"). After having organised stakeholder consultations earlier this year, the European Commission is currently preparing an impact assessment with a view to adapting the current European legal framework for the internal gas market and to achieve decarbonization of gaseous fuels. The European Commission's proposals are already expected by the end of this year. In this respect, one of the key legislative challenges will be to find the right balance between the gradual creation of an open access grid backbone and the impact thereof on

incumbent players such as Air Liquide, who already operate the current private hydrogen network in Belgium. The outcome of the current Impact Assessment of the Gas Package by the European Commission will have a clear influence on how this model will be established and regulated.

FOURTH PILLAR: COOPERATION AS A KEY SUCCESS FACTOR

In Belgium, the regulatory framework for clean hydrogen is scattered across the federal and regional levels (i.e. the Flemish, Walloon and Brussels Metropolitan Region)[1]. Due to the complex division of powers in the field of energy and transportation, a working group was set up between the Federal Government and the regional governments to foster regional collaboration.

The Belgian Strategy acknowledges this division of competences regarding hydrogen in Belgium, and it reiterates the importance of a strong cooperation with the Regions and that the abovementioned working group will continue its mission.

In addition to intragovernmental cooperation, it is interesting to note that the Belgian Strategy is also pragmatic in the sense that it intends to establish broader cooperation agreements with European and international partners as a means to achieve the objectives of the first three pillars. Examples of international cooperation in this field are, namely, standardisation of the regulatory framework to ensure a single liquid market for hydrogen in Central West Europe and for which Belgium will adopt a proactive attitude at the level of the Benelux, the Pentalateral Energy Forum and the European Union. Another recent and concrete example of international cooperation in the field of renewable hydrogen is the abovementioned MoU concluded between Belgium and Namibia, which stresses the benefits both countries could obtain in cooperating closely.

OUTLOOK

The publication of the Belgian Strategy is a significant step for Belgium in its ambition to reach carbon neutrality by 2050 and to position itself as an import and transit hub for clean hydrogen in Europe. The Belgian Strategy is based on four pillars, all of which are backed by specific targets and policy actions. At the same time, the devil is in the detail. These general policy ambitions will need to be translated into a legislative framework that is consistent both on a federal and regional level. This will require close cooperation between the different political actors. Furthermore, the Belgian Strategy is currently rather silent on wider aid mechanisms supporting the business segments where renewable hydrogen can be deployed most efficiently, such as the energy-intensive industries situated in the most important ports of Belgium. In this respect, it will be interesting to see whether Carbon Contracts for Differences will be deployed in the short and medium term to bridge the existing cost-gap between renewable and low-carbon hydrogen, on the one hand, and fossil-based hydrogen, on the other hand.

The Belgian Federal Government has demonstrated a willingness to deliver on its hydrogen ambitions. All eyes in the coming months will be on the legislative steps that must now follow, including the public consultation on the legislative framework for the hydrogen transportation backbone. As always, the proof of the pudding will be in the eating.

[1] See our client briefing of 18 June 2020.

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

Xavier Remy
Partner,
Brussels

T +32 2 533 5902
E xavier.remy
@cliffordchance.com

Patrice Viaene
Senior Associate,
Brussels

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

Philippe Baert
Associate,
Brussels

T +32 2 533 5936
E philippe.baert
@cliffordchance.com

Sonia Belhassen
Associate,
Brussels

T +32 2 533 5041
E sonia.belhassen
@cliffordchance.com

Global Contacts

Anthony Giustini
Partner,
Paris

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

Mohamed Hamra-Krouha
Partner, Abu Dhabi

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

Liesbeth Buiter
Partner,
Amsterdam

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

Ouns Lemseffer
Partner,
Casablanca

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

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

Epistimi Oikonomopoulou
Associate, Brussels

T 32 2 533 5019
E epistimi.oikonomopoulou@cliffordchance.com

GLOBAL (CONTINUED)

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
Director,
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

Clara Alcaraz
Senior Associate,
Madrid

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