

# Enabling the hydrogen economy 2020



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### Clean Hydrogen

### The key to successful decarbonization

With a number of countries around the world working to fully decarbonized their economy by 2050, clean hydrogen increasingly stands out as a key constituent to achieving these goals. Growing and incentivizing a clean hydrogen market will be a necessary step to enable decarbonisation across multiple industries. As a result, many governments have started supporting the growth of the green, yellow and blue hydrogen market, just as they did for renewables. Making use of government support and policies, first-movers will be able to reap the benefits of derisked investments and shape the future of the global clean hydrogen market.



### CLEAN HYDROGEN PRODUCTION

Produced from water by electrolysis using renewable electricity (small scale projects only at present).

Nuclear electricity can also be used to produce hydrogen by electrolysis (mostly pilot projects).

Produced by steam methane reforming alongside carbon capture, utilization and storage (CCUS), using natural gas or biomass – very low or no  $CO_2$  emissions. Numerous demonstration size plants exist and are in development. The technology is proven but needs to be scaled to industrial size.



### TRANSPORTATION

Fixed infrastructure and existing distribution networks - TSO/DSO for gas

### **FIRST MOVER ADVANTAGE**

The speed of deployment of hydrogen in coming years is expected to vary between sectors and countries due to the different level of maturity or adoption of the technology required for decarbonized hydrogen development, either globally or in specific regions.

Moreover, different governments' hydrogen strategy will greatly affect what opportunities can effectively be taken advantage of.

By wisely making use of government policies, regulations and sources of funding, smart first-movers will be able to reap the benefits of de-risked investments and establish a stronghold in the clean hydrogen market and the path to full energy transition.

Track the key legal, regulatory and policy developments in relation to clean hydrogen across the globe on our <u>Global Hydrogen Policy Tracker</u>.

Related resources:

Shaping Tomorrow's Global Hydrogen Market	Ĭ.
European Green New Deal	Ĭ.
European Recovery Plan	Ĭ.

FAT	Oil refining		
	Ammonia production		
	Methanol Production	CURI	RENT
50	Steel		
	Transport ————		
	Industry		
	Heating of buildings	FUT	URE
(\$	Power		
$\widehat{\mathbb{C}}$	Blending with natural gas		

USES

### Enabling the hydrogen economy

Delivering relevant expertise



Regulatory framework and government policy

Shaping the legal and regulatory agenda: are laws and policies sufficient and are there changes required to drive the clean hydrogen industry forward? How to make the EU take your hydrogen-related interests into account?

**Tailored regulatory watch**: do incoming regulations improve the 'hydrogen business case' for you?

**Carbon Capture and Storage:** is there an adequate legal and regulatory framework for carbon capture and storage in place that will enable production of blue hydrogen on a large scale?

**De-risking investments:** how to make sure you get available hydrogen/green public funding?



### Technology development and initial market penetration

#### R&D: IP, exclusivity and pricing

Joint ventures and commercial cooperation agreements:

- Scope of the joint venture/cooperation agreement (exclusivity of one)
- Governance of the joint venture and staffing the joint venture (secondees);
- Teatment of jointly developed IP; 3rd party licensing and sourcing of IP; IP Infringement risks

#### International Joint Venture Handbook

practical guidance on business and legal considerations associated withinternational joint venture transactions.



Infrastructure investment, development and financing

#### How to deliver

- the development of clean hydrogen production facilities including the construction of CCS infrastructure and integration into gas networks
- construction of hybrid renewable energy and green hydrogen production facilities
- modification of conventional thermal power plants to enable firing with hydrogen
- developing bankable structures including a combination of public funding with risk capital and conventional debt financing



### Foreign investment regimes

How will increasing foreign investment restrictions affect your investment decisions?

#### COVID-19 Government Intervention Schemes

summary of key government interventions around the globe in relation to: foreign investment restrictions, debt, equity and taxation, as well as EU State Aid Approvals in the EMEA region,

Foreign Investment Review Evaluation "FIRE" Tool



Baker McKenzie's proprietary analysis platform answering 49 detailed questions on foreign investment regimes across 24 jurisdictions.



Tax, environmental and disputes issues

How should your 'hydrogen project' be structured to maximize regulatory and tax efficiency?

### **Clean hydrogen expertise**

Selected highlights

### ADVANCED CLEAN ENERGY STORAGE (ACES) GREEN HYDROGEN PROJECT

Advised Mitsubishi Hitachi Power Systems on the replacement of coal-fired generation with natural gas and zero-carbon hydrogen in the US. The project will produce, store and transmit renewable hydrogen to a new power plant via an existing HVDC transmission line.

### REGULATORY OUTREACH

Advising global oil & gas company to design its regulatory EU hydrogen outreach strategy, including (i) analysing the EU's objectives and policy options, (ii) arguing in favour of a particular approach to regulating and supporting the future European hydrogen market and (iii) raising the awareness of policymakers regarding the need for support relating to research & development for specific hydrogen production technologies.

#### **EU REGULATORY WATCH**

Assisted a major investor in renewable electricity in the EU in monitoring developments, analysing regulatory incentive schemes and identifying opportunities on the European hydrogen market, with in-depth reports covering more than 10 Member States.

#### HYDROGEN FUELLING INVESTMENTS

Advised on an equity investment transaction in which Japan Bank for International Cooperation (JBIC) invest into a California start-up company operating hydrogen stations in 20 locations across the State of California.

#### **AUSTRALIA HESC PILOT PROJECT**

Advised on and drafted project contracts for the Hydrogen Energy Supply Chain Pilot Project in Victoria, Australia, which is a commercial hydrogen energy supply chain project to convert brown coal into hydrogen and export it to Japan. The project also involved the use of carbon capture and storage.

### Spotlight on our unparalleled expertise with the Global CCS Institute:

- Completing the Foundation Reports (on global CCS law and policy) for the Global CCS Institute, reviewing and analysing developments in public international law and across major economies including the European Union, the United States, Canada, South Korea, Russia, Japan, China, Norway, South Africa, the United Arab Emirates and Australia.
- Advising on the legal and regulatory aspects for each of the 30+ projects seeking support under first round of funding by the Institute.
- Preparing a report on contracting approaches for CCS project development.
- Preparing an analysis of CCS legal and regulatory frameworks in Malaysia and participating in capacity building workshops with local government and industry stakeholders.
- Researching domestic legal frameworks that regulate all aspects of the CCS project cycle across a number of jurisdictions in Australia and overseas for the latest update to the Institute's Global Status Report.

### **Carbon Capture and Storage (CCS)**

The key to blue hydrogen development

Carbon capture, transport, storage and long-term management raise unique challenges for policymakers, legislatorsand project proponents alike.

- making CCS cost-effective as a greenhouse gas emission reduction and avoidance technology by designing and implementing policies to ensure that greenhouse gas emissions are priced in an economically efficient way;
- regulating cross-border aspects of carbon dioxide transport and storage;
- providing robust frameworks for property rights in both underground storage formations and stored carbon dioxide; and
- managing not only monitoring and verification, but also potential environmental and financial liabilities, arising from long-term storage of carbon dioxide.



Band 1 Climate Change Law for 13 consecutive years Chambers Global 2008-2020

"Recognised as a global leader in the climate change sphere, with formidable expertise spread across offices in the Americas, Australia, UK, well as Africa and Asia."

**Quote from Chambers Global 2020** 

Baker McKenzie has world leading expertise in climate change policy, which in most jurisdictions forms the policy context for efforts to regulate CCS. We also have extensive experience in advising governments on project legislative and policy development and project developers on project structuring, project finance and contracting approaches, making us uniquely placed to provide you with cutting edge advice on CCS.

Our global group has advised governments, including those of Algeria, Australia, Illinois, New Zealand, Norway and South Africa, on their CCS and climate change law and policy. We have been involved in numerous capacity building initiatives, including: the RELaw Assist project and the CDM CAPSSA project sponsored by the European Commission, directed at capacity building in the private sector in southern Africa.

In undertaking these and other projects, we have worked closely with funders including the Asian Development Bank, the British Foreign and Commonwealth Office, Danida, the United Nations Environment Program and the World Bank. We also act for leading energy and climate change sector clients including energy and resources companies and preeminent financial institutions and have advised, among others:

- a European power company on its bid for funding under the UK Government's £1 billion CCS Commercialisation Competition;
- a number of Australian and foreign resources companies on legal issues associated with carbon capture and storage and coal mine waste gas (methane) capture, including the ability to generate carbon credits under Australian voluntary or mandatory emissions trading frameworks;
- on regulatory issues relating to the GHG storage aspects of Australia's Offshore Petroleum and Greenhouse Gas Storage Act 2006 (Cth), in particular in relation to how the new GHG storage regime would impact on existing petroleum interests and assisting clients to make submissions to the Senate Committee;
- GE Energy as a proponent of the proposed Wandoan power project on long-term liability and permitting regimes for the underground storage of carbon dioxide under the Greenhouse Gas Storage Act 2009 (QLD); and
- a confidential client on all contractual documentation and CCS regulatory issues for the Peterhead CCS project (Scotland).

### **Key contacts**

Our dedicated Hydrogen team is led by:



### Christopher Jones, Partner christopher.jones@bakermckenzie.com

Before joining us, Christopher was Deputy Head of the Cabinet for the Energy Commissioner, where he spent 18 years designing and implementing Europe's energy policy. Christopher brings a strong insight into the European Commission's thinking on energy policy, and the measures the EU will be introducing via the European Recovery Plan, to propel the hydrogen economy and how these may be replicated across the globe.



#### Ilona Millar, Partner ilona.millar@bakermckenzie.com

Head of our leading Global Climate Change Group, Ilona has a wealth of experience. She has worked for the last 20 years on climate law and finance, including the development of law and policy and its implementation by both governments and the private sector.

Our energy team is focused on helping our clients to navigate the energy transition. We are here to work with you in anticipating the legal requirements of the associated regulatory, technological and social change. Within this broad remit, our team looks holistically at the different aspects of the energy transition throughout its life cycle.

We can navigate the spectrum of ESG and reporting obligations and sustainable governance critical under many of the government packages.



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## Baker McKenzie helps clients overcome the challenges of competing in the global economy.

We solve complex legal problems across borders and practice areas. Our unique culture, developed over 70 years, enables our 13,000 people to understand local markets and navigate multiple jurisdictions, working together as trusted colleagues and friends to instill confidence in our clients.



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