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# Singapore's National Hydrogen Strategy to Achieve Net Zero by 2050

## Introduction

At the Singapore Energy Lecture on 25 October 2022 for the Singapore International Energy Week, Singapore announced its commitment to achieve: (i) "net zero emissions by 2050" as part of its Long-Term Low-Emissions Development Strategy ("**LEDS**"), and (ii) "reduce emissions to around 60 million tonnes of carbon dioxide equivalent (MtCO<sub>2e</sub>) in 2030 after peaking emissions earlier" as part of the revised 2030 Nationally Determined Contribution ("**NDC**"). Singapore will submit the revised LEDs and 2030 NDC to the United Nations Framework Convention on Climate Change (UNFCCC) at the 2022 United Nations Climate Change Conference (COP-27). This follows numerous engagement exercises by the Government to obtain feedback, such as dialogue sessions with various groups and an online public consultation exercise by the National Climate Change Secretariat ("**NCCS**"). You may read more about the online public consultation in our Legal Update [here](#), and a summary of the feedback from public consultations on Singapore's raised climate ambitions shared by the NCCS [here](#).

A new arrow in our quiver to attain net zero is the National Hydrogen Strategy that was also shared on 25 October 2022. The National Hydrogen Strategy aims to leverage the potential of hydrogen so as to guide and accelerate Singapore's journey towards meeting our climate goals, while preserving and enhancing our energy security.

This Update outlines the key aspects of the National Hydrogen Strategy, and its potential significance to businesses. Singapore adopts a holistic approach to Sustainability with various policies and strategies, and it is important for businesses to do the same and consider the potential impact the policies and strategies have on different aspects of business. To help you better navigate the broader sustainability legal/regulatory landscape, we also broadly outline some key recent developments, namely, changes to the carbon regime and Singapore's efforts to facilitate green finance.

## National Hydrogen Strategy

Various research studies have shown low-carbon hydrogen (including derivatives such as ammonia) to be a forerunner as an important decarbonisation pathway for Singapore. Among other things, hydrogen can be adopted as a low-carbon fuel or feedstock across different sectors. Hydrogen can be employed to complement and diversify our power mix, as well as benefit the maritime and aviation sectors as low-carbon hydrogen and hydrogen-derived fuels are used as potential alternatives to fossil fuels.

The National Hydrogen Strategy comprises five key aspects which the Government will focus its efforts on:



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1. Experimenting with key hydrogen technologies and carrier pathways focussing on those that are commercially viable with numerous applications. This will help Singapore better understand how they can be used on a large scale when they are ready for commercial deployment. As a start, Singapore will launch an Expression of Interest for a small-scale commercial project on using hydrogen to generate power, including developing ammonia supply chains to support marine bunkering needs. This helps Singapore assess the viability of these projects and provide impetus for developing regulations and an ecosystem to support it. More details are expected to be shared in the next few months.
2. Engaging in research and development work to overcome technology bottlenecks, particularly to import, handle and utilise low-carbon hydrogen and its derivatives safely and at scale. Singapore has a Low Carbon Energy Research (LCER) Programme, and \$55 million was awarded for projects under Phase 1 of the programme for research into low-carbon technologies last year. For Phase 2 of the programme, hydrogen will be the key focus area and a further \$129 million will be channelled towards eligible projects.
3. Facilitating the formation and scaling up of supply chains in order to support global trade in low-carbon hydrogen through close collaboration with the industry and international partners. It is particularly important for Singapore to ensure a reliable and diversified supply of hydrogen because we are a net importer of low-carbon hydrogen. Singapore will also direct efforts to develop guidelines and standards for the transportation, storage and supply of low-carbon ammonia and hydrogen, for instance developing frameworks and standards to certify the low-carbon origin of hydrogen imports, such as through Guarantee of Origin certification, that are recognised across different jurisdictions.
4. Developing long-term plans for land and infrastructure for purposes of import, storage and transformation of hydrogen into power. This is an important preparatory step to support the mass deployment of hydrogen. It is likely that new storage and distribution infrastructure will be required as hydrogen has different properties from natural gas, and execution must be properly planned in land-scarce Singapore.
5. Supporting manpower training to build a workforce that is able to support the broader hydrogen economy. We can expect new activities and jobs along the entire value supply chain, including financing, trading, certifying, transporting, storage and deployment.

For more information, please click [here](#) to view the press release, and refer [here](#) for details on the National Hydrogen Strategy.

### **What it means for businesses**

International developments show that the hydrogen economy is gaining momentum, with mounting interest from the public and private sectors in growing the supply value chain. The increasing number

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of production projects and growing investment into research of hydrogen technologies afford many opportunities that businesses can consider.

Various countries have also come up with their own national hydrogen strategies. In line with the government's call for close collaboration with international partners, businesses must look beyond the shores of Singapore, take a broader global view, and keep abreast of the latest technology and legal/regulatory developments and factor these in their commercial and investment decisions.

It bears to note that the foray into new developing technologies has its accompanying risks and challenges, and businesses are well advised to factor these in their consideration and investment decisions. For starters, there is no established global supply chain and hydrogen technologies are still very new and being developed. There are also several other related near-term challenges, for instance, possible increased costs in production and the lack of international regulatory standards. These challenges may be accentuated locally because of Singapore's geographical restraints and limitations on alternative energy sources. In this regard, our Sustainability Practice, which comprises multi-disciplinary specialist teams, can help advise on and navigate these concerns and issues as your business poises itself to take advantage of the potential the green hydrogen economy brings.

## How We Can Help

The transition to net zero is a mammoth task. Apart from the National Hydrogen Strategy, Singapore also adopts other policies and strategies. To help businesses gain a better sense of the broader sustainability ecosystem and keep up to date with the recent general legal/regulatory trends, we outline below some key recent Sustainability-related developments that may be of relevance to businesses.

**Refining the carbon regime** - The main idea is that raising carbon tax will help shape business decisions and consumer behaviour as they are compelled to internalise the cost of consumption. In this regard, the Carbon Pricing (Amendment) Bill was introduced for First Reading in Parliament on 3 October 2022, which among other things, covers revisions to the carbon tax rate and carbon price, allowances for eligible taxable facilities to reduce carbon tax and an option to use eligible international carbon credits in lieu of paying carbon tax. The Bill sets out important and significant developments in relation to the treatment of carbon tax and carbon credits. Businesses are strongly encouraged to follow the developments and assess the practical impact and opportunities they afford to your operations. The Bill is slated to be read a second time in November 2022. You may read more about this in our Legal Update, available [here](#).

**Facilitating green finance** - In his [speech](#) at the Singapore Energy Lecture, Deputy Prime Minister and Minister for Finance Lawrence Wong also highlighted the importance of the 3 "Ds" in building up our sustainable finance ecosystem, namely, Definition (i.e. defining what constitutes green and transition activities), Disclosure (i.e. enhancing the quality and transparency of disclosures to combat greenwashing) and Data (i.e. improving the quality, availability and comparability of data). To help businesses and investors identify with greater certainty projects and investments that promote

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sustainability, the Green Finance Industry Taskforce ("**GFIT**") is developing a proposed Singapore Taxonomy for Singapore-based financial institutions with the key objective of encouraging more capital flows towards sustainable activities ("**GFIT Taxonomy**"). GFIT conducted two earlier consultations on the proposed GFIT Taxonomy which you can read more about in our earlier Legal Updates [here](#) and [here](#). GFIT aims to finalise the full GFIT Taxonomy in 2023.

On improving the transparency and quality of disclosures, MAS has a slew of initiatives and projects that includes developing fintech solutions under [MAS Project GreenPrint](#) that aims to, among others, use technology to facilitate the flow of consistent, clear and reliable environmental, social and governance ("**ESG**") data. MAS has also set out enhanced disclosure and reporting guidelines for ESG Retail Funds, which you may read more about in our Legal Update [here](#). Issuers listed on the SGX-ST Mainboard and Catalist may also find relevant our Legal Update concerning various Sustainability-related initiatives and requirements by the Singapore Exchange Limited ("**SGX**") available [here](#).

The developments spotlighted are not comprehensive but aim to provide a flavour and broad direction of where Singapore is headed in her transition journey. Businesses are well advised to keep abreast of and consider the potential implications and prime themselves to seize the opportunities in the new green economy. If you have any queries regarding any of the above developments, please feel free to contact our team below.

In full support of the Singapore Government's efforts to champion green and sustainability practices in Singapore and the region, Rajah & Tann Singapore has a Sustainability Practice which comprises multi-disciplinary specialist teams who are well equipped to guide and advise on business modifications you wish to make, structuring deals and putting together appropriate documentation, relevant environmental laws advisory, and more. The team also has direct experience in advising on projects involving the introduction of hydrogen as an alternative source of energy and will be happy to engage in discussion.

Our Tax Practice is well placed to assist with appeals under the Carbon Pricing Act, including appeals against refusals to deregister business facilities as taxable facilities, refusals to approve emissions reports or monitoring plans, refusals to refund tax, or refusals to revise any assessment. Working closely alongside our Sustainability Practice, we bring a holistic edge and will be able to guide you comprehensively along each step of the appeal process.

## Contacts

### Sustainability



**Lee Weilin**  
Head, Sustainability  
Partner, Banking & Finance

T +65 6232 0707

[weilin.lee@rajahtann.com](mailto:weilin.lee@rajahtann.com)



**Kala Anandarajah, PBM**  
Partner, Sustainability  
Head, Competition & Antitrust and  
Trade

T +65 6232 0111

[kala.anandarajah@rajahtann.com](mailto:kala.anandarajah@rajahtann.com)



**Soh Lip San**  
Partner, Sustainability  
Energy & Resources

T +65 6232 0228

[lip.san.soh@rajahtann.com](mailto:lip.san.soh@rajahtann.com)



**Sandy Foo**  
Partner, Sustainability  
Deputy Head, Corporate and  
Transactional Group  
Head, Mergers & Acquisitions

T +65 6232 0716

[sandy.foo@rajahtann.com](mailto:sandy.foo@rajahtann.com)



**Ng Sey Ming**  
Partner, Sustainability  
Co-Head, Banking & Finance

T +65 6232 0473

[sey.ming.ng@rajahtann.com](mailto:sey.ming.ng@rajahtann.com)



**Disa Sim**  
Partner, Sustainability  
Head, Appeals & Issues

T +65 6232 0415

[disa.sim@rajahtann.com](mailto:disa.sim@rajahtann.com)



**Shemane Chan**  
Partner, Energy & Resources

T +65 6232 0285

[shemane.chan@rajahtann.com](mailto:shemane.chan@rajahtann.com)

## Tax



**Vikna Rajah**  
Head, Tax and Trust  
Co-Head, Private Client; South  
Asia Desk

T +65 6232 0597

[vikna.rajah@rajahtann.com](mailto:vikna.rajah@rajahtann.com)

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Please feel free to also contact Knowledge and Risk Management at [eOASIS@rajahtann.com](mailto:eOASIS@rajahtann.com)

## Our Regional Contacts

RAJAH & TANN | *Singapore*

**Rajah & Tann Singapore LLP**

T +65 6535 3600  
sg.rajahtannasia.com

CHRISTOPHER & LEE ONG | *Malaysia*

**Christopher & Lee Ong**

T +60 3 2273 1919  
F +60 3 2273 8310  
www.christopherleeong.com

R&T SOK & HENG | *Cambodia*

**R&T Sok & Heng Law Office**

T +855 23 963 112 / 113  
F +855 23 963 116  
kh.rajahtannasia.com

RAJAH & TANN | *Myanmar*

**Rajah & Tann Myanmar Company Limited**

T +95 1 9345 343 / +95 1 9345 346  
F +95 1 9345 348  
mm.rajahtannasia.com

RAJAH & TANN 立杰上海

SHANGHAI REPRESENTATIVE OFFICE | *China*

**Rajah & Tann Singapore LLP  
Shanghai Representative Office**

T +86 21 6120 8818  
F +86 21 6120 8820  
cn.rajahtannasia.com

GATMAYTAN YAP PATACSIL

GUTIERREZ & PROTACIO (C&G LAW) | *Philippines*

**Gatmaytan Yap Patacsil Gutierrez & Protacio (C&G Law)**

T +632 8894 0377 to 79 / +632 8894 4931 to 32  
F +632 8552 1977 to 78  
www.cagatlaw.com

ASSEGAF HAMZAH & PARTNERS | *Indonesia*

**Assegaf Hamzah & Partners**

**Jakarta Office**

T +62 21 2555 7800  
F +62 21 2555 7899

**Surabaya Office**

T +62 31 5116 4550  
F +62 31 5116 4560  
www.ahp.co.id

RAJAH & TANN | *Thailand*

**R&T Asia (Thailand) Limited**

T +66 2 656 1991  
F +66 2 656 0833  
th.rajahtannasia.com

RAJAH & TANN LCT LAWYERS | *Vietnam*

**Rajah & Tann LCT Lawyers**

**Ho Chi Minh City Office**

T +84 28 3821 2382 / +84 28 3821 2673  
F +84 28 3520 8206

RAJAH & TANN | *Lao PDR*

**Rajah & Tann (Laos) Co., Ltd.**

T +856 21 454 239  
F +856 21 285 261  
la.rajahtannasia.com

**Hanoi Office**

T +84 24 3267 6127  
F +84 24 3267 6128  
www.rajahtannlct.com

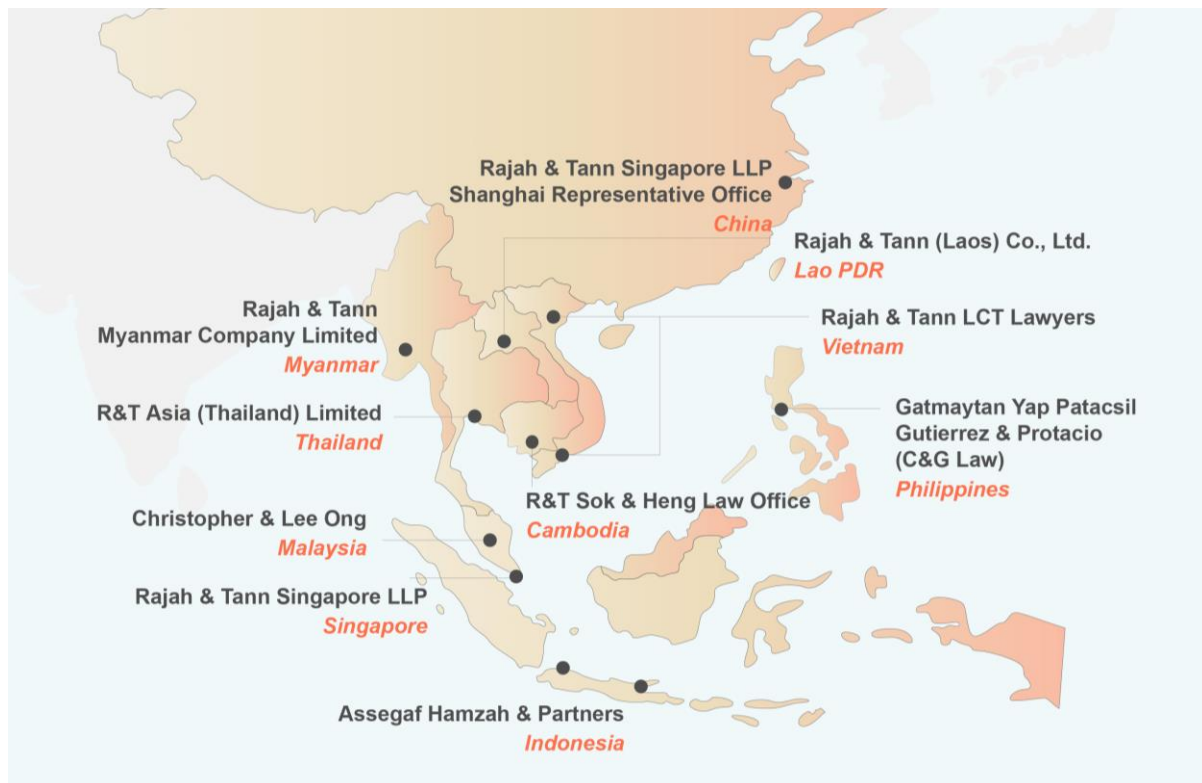
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