International Trade Rules for Hydrogen and its Carriers:
Information and Issues for Consideration

Executive Summary of the Discussion Paper for the
IPHE Hydrogen Trade Rules Task Force

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International Partnership for Hydrogen and Fuel Cells in the Economy

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Executive Summary

Decarbonization of the global energy system will not be simple. As countries and regions around the world outline ambitious net zero strategies and targets, energy carriers such as hydrogen (and its derivatives) will play an essential role in reducing future carbon emissions. Hydrogen is well suited for use in hard-to-abate sectors where other decarbonization options are limited. For hydrogen to be a practical solution in the energy transition, it must be available in sufficient volumes, at an acceptable cost, and with low or zero carbon emissions associated with its production and distribution. Achieving this will require hydrogen to be transported and traded internationally.

This discussion paper *International Trade Rules for Hydrogen and its Carriers: Information and Issues for Consideration*, was prepared for and in close collaboration with the International Partnership for Hydrogen and Fuel Cells (IPHE). It examines the potential for future international hydrogen trade and identifies potential barriers, hurdles, and considerations to explore now to ensure appropriate future trading conditions. The discussion paper does not seek to make recommendations, set policy, or design trading frameworks. Instead, it identifies areas for further analysis and questioning, outlining potential opportunities to support market transparency and future large-scale international trade in hydrogen.

Hydrogen energy trade will grow, requiring rules

There is already widespread global hydrogen production, distribution, and use as a *chemical feedstock*, with no significant market barriers or impediments to supply-chain growth. However, the global hydrogen *energy* market is nascent. As demand for conventional and low carbon hydrogen energy increases, long-distance and large-scale international transport and trading of hydrogen will be needed to link areas of surplus and deficit.

Competition will intensify with the growth of hydrogen trade, as seen in more mature commodity markets. It is crucial that the global hydrogen market develops in an efficient, inclusive, and transparent manner. Technical, legal and commercial challenges may arise, for which a rules-based approach is logical, governing aspects such as the carbon intensity of hydrogen, customs procedures, market frameworks and many other features.

WTO rules need to be more specific for hydrogen energy

The World Trade Organization (WTO) provides the global trade framework and its rules. How this framework will affect hydrogen energy trade is not yet clear as there is currently no well-established international market.

In considering how current WTO rules apply to hydrogen, it is important to remember that hydrogen energy, unlike fossil fuels, has many different pathways to produce and transport it, with varying carbon intensities. As a result of this and other features it will be challenging to apply the same trade rules and regulations fairly or easily under the current framework. In particular:

- If different hydrogen carriers were subject to **different import tariffs**, impacting the cost per unit of hydrogen energy, this could distort market behaviour.
- There are different trade rules for goods and services. Hydrogen production and distribution **contains elements of both goods** (e.g., a molecule) **and services** (e.g., operating a production facility) potentially leading to confusion into how to apply rules
- It is difficult to encourage and support **environmental policies** and mandates driving low carbon energy solutions within the context of a rigid trade system.
- Existing trade rules do not address **export restrictions** and **investment protection** well.

- More clarity is needed around **access to fixed infrastructure** or fixed energy grids, since the WTO does not regulate the use of infrastructure or provide anti-trust rules.

Overall, although the WTO framework poses no roadblocks to hydrogen trade, it will require greater precision to enable hydrogen energy to be traded efficiently and fairly.

Hydrogen will face other trading challenges

This paper also looks beyond the legal frameworks for international trade to other trading challenges for hydrogen and its derivatives, drawing the following conclusions:

- **Future trade patterns are hard to predict:** developments in technology, manufacturing capacity and experience are needed before widespread deployment is financed**.** These will influence which regions have comparative advantage in production and use, meaning that the areas of greatest surplus and deficit are currently unclear.
- **Infrastructure is a bottleneck**: reliable and accessible infrastructure connecting supply and demand is critical for the widespread use and trade in hydrogen. The current lack of large-scale infrastructure hinders trade and the markets that develop will be influenced by where and when infrastructure becomes available.
- **Policy uncertainty hinders international trade:** hydrogen is a new area of energy policy, with fast-evolving regulations, legislation, and incentive instruments across jurisdictions. The complexity and current uncertainty around these changing regulatory and market frameworks directly impact investment, which in turn affects international trade.
- **Policy support should not conflict with trade rules:** today's low carbon hydrogen market requires supportive policy frameworks and financing mechanisms. Countries and institutions should ensure that these frameworks and mechanisms are managed within the context of trade arrangements, do not violate trade rules, and do not prejudice future investment and roll-out.
- **There is a strong role for global collaboration:** developing a future global market for the trade of low carbon hydrogen will require international dialogue and cooperation, across borders, regions, and the public and private sectors.

The IPHE and member countries can help to address trade issues

Addressing multilateral trade framework issues is beyond the scope of the IPHE. However, many of the most pressing challenges facing the future hydrogen market lie outside the broad trade framework and need to be approached by stakeholders across the wider hydrogen trade community.

Collaboration between IPHE member countries can support the development of appropriate future trading conditions for hydrogen and its derivatives. For example, cross-border collaboration to ensure alignment and consistency in definitions, certification schemes, and import tariffs for hydrogen and its potential carriers will help to address potential hydrogen related trade policy issues.

Naturally, nation states will need to address national and regional issues within their own jurisdictions. However, sharing these approaches with other IPHE members will further support international market development. Non-trade policy issues, such as sharing information on technology and infrastructure development, are already a focus of IPHE work and will continue to be important as the market develops.

Finally, the IPHE and its members can play a significant role by taking this discussion paper to governments, trade experts, and industrial stakeholders such as ports, infrastructure operators, producers, and industrial consumers, to solicit input and perspectives on the challenges raised and potential solutions to address them.