EXECUTIVE SUMMARY

Renewable hydrogen and hydrogen-derived commodities – such as ammonia, methanol and e-kerosene – are expected to play important roles in the energy transition. While most energy consumption can be met using renewable electricity or biofuels by 2050 (IRENA, 2023a), the use of renewable hydrogen and its derived commodities will be required in hard-to-abate sectors, including in industry as feedstocks (*e.g.* chemical manufacturing, fertiliser production, refining, steel manufacture) and heavy-duty transport as e-fuels (*e.g.* in maritime transport and aviation). Their use may account for around 14% of final energy consumption in 2050 (IRENA, 2023a).

Differences in climate conditions and economic circumstances are expected to drive cost variations for the production of renewable hydrogen, hydrogen-derived feedstocks and e-fuels in different geographies. Many countries and regions are considering potential roles in these emerging markets. For those with access to abundant renewable energy resources, exporting opportunities emerge. For those with developed industrial sectors and more limited renewable resources, imports can allow access to a decarbonised feedstocks or fuels. A global market for these commodities is expected to enhance competitiveness and lower total costs by facilitating the development of production facilities where renewable resources are most abundant.

The development of an international market for renewable hydrogen and its derivative commodities will require significantly scaled-up sustainable value chains. Further physical infrastructure is needed; for example, pipelines and shipping facilities are necessary to transport commodities from producers to consumers. Robust market development will be supported by establishing and elaborating plans and strategies for the development of supply chains around technologies and vital inputs (such as water and carbon sources for the production of methanol and e-kerosene). Moreover, the development of sound and coherent policy frameworks will foster market growth, support sustainable production, and facilitate international trade flows. It is also clear that engaging communities and building social acceptance helps to facilitate successful projects.

All of these priorities require action, from various stakeholders, and this report sets out a series of considerations for policy makers enabling international market development and trade in renewable hydrogen and its derivative commodities. These considerations cover areas of energy and trade policy, and the intersections between them. Policy makers are encouraged to consider the resources and tools available to them in their economies, and their specific objectives in terms of international trade in renewable hydrogen and its derivatives. Trade policies such as standardisation and certification mechanisms, government support and procurement, rebalancing tariffs, and carbon pricing mechanisms, can be used to bolster international market development. The evolution of these markets is expected to support green industrial development and job creation, and foster an efficient energy transition.

International collaboration and co-operation is also recognised as being essential to driving these international markets, especially when mechanisms for standardisation and certification are considered. Further work across borders is required in these areas.