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# **Sustainable hydrogen: partnership between importing countries is essential**

**Raffaele Piria, 10<sup>th</sup> January 2020**

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## Sustainable hydrogen: partnership between importing countries is essential<sup>1</sup>

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With the German government poised to publish its first National Hydrogen Strategy, Germany should broaden the international dimension of its hydrogen strategy to focus on other countries and regions interested in importing sustainable hydrogen. Germany should work towards a partnership with other importing countries to send a clear message that, in the long term, they will seek to import substantial amounts of hydrogen that meets sufficiently ambitious environmental standards.

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The German federal government's first National Hydrogen Strategy will be published soon. Through its preparation, there has been relatively broad consensus that Germany must import substantial amounts of sustainably produced hydrogen or derived products in the long term. There hardly are plausible alternatives, if Germany wants to achieve its long-term climate targets without overstraining the acceptance and costs for domestic renewable electricity generation.

The international dimension of the German hydrogen debate has so far mainly focussed on potential green hydrogen suppliers, including Norway, Island, Northern Africa, the Middle East, Australia or Chile.

However, Germany should also consider like-minded (potential) green hydrogen importers as key partners. Like Germany, such countries and regions import large amounts of energy and will probably continue to do so after completing the transition towards an energy system based on renewables. Germany will need partners with a similarly ambitious climate agenda and a strong interest in importing sustainably produced hydrogen. Such countries and regions could include among others several EU Member States, California, the US North East and potentially Japan, Korea and other Asian countries.

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### Cooperation rather than competition

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Some may expect potential sustainable hydrogen importer relationships to be competitive because of the scarcity of the resource. However, importing countries and climate mitigation will benefit more from taking a cooperative approach.

Though sustainably produced hydrogen is and will remain scarce, a decline in costs and a substantial expansion of supply are likely to happen thanks to technical progress and economies of scale in green hydrogen production, transportation, storage and applications. In

<sup>1</sup> This is an adapted translation of an article published by the Berlin daily newspaper Tagesspiegel on 10th January 2020

such a dynamic context, all (potential) buyers have a common interest that the market for green hydrogen develops rapidly and efficiently.

What's more, the renewed interest for hydrogen in Germany and at the international level is essentially motivated by the need to reduce climate emissions in hard to abate sectors, such as transportation and industry. Traditionally, in a geopolitical logic of buyer competition, the success of an importing country is defined as its ability to secure a big share of a scarce resource. But will a country that restricts other countries' access to sustainably produced hydrogen create tangible climate benefits?

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### Shared interests of future importers

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Germany shares two main interests with other potential sustainable hydrogen importing countries. First, they should jointly send out a clear message: in the long term, they will import significant amounts of sustainably produced hydrogen or derived products from regions with the potential to produce them more cheaply and at a larger scale. Second, they should agree on shared sustainability criteria for climate friendly hydrogen.

The more importing countries support climate friendly hydrogen, the stronger the incentives for market players to invest, and for potential supplying countries to provide favourable conditions for such investments. All this will facilitate the emergence of economies of scale, technical progress and falling prices.

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### Sustainability standards

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The potential buying countries should try to achieve consensus on sufficiently ambitious yet realistic sustainability standards. Such a consensus would strengthen their position when responding to economic interests and political forces in favour of weak or ineffective standards. This is particularly relevant, as several countries and regions with a high potential for green hydrogen production also have large fossil fuel reserves, including the Gulf Region, Australia, Canada, the USA, Norway and Algeria.

Hydrogen sustainability standards must be sufficiently ambitious to ensure that use of hydrogen as an energy carrier leads to real climate benefits and facilitates a rapid transition towards a climate neutral energy supply system. Weak or ineffective hydrogen standards in conjunction with policies that push hydrogen applications trigger investments in greenhouse gas intensive hydrogen production processes, thus jeopardizing the acceptance for hydrogen applications in countries where climate protection is a main driver.

However, unrealistically ambitious standards could hinder meaningful investments that are necessary to build the technologies and the value chain for sustainably produced hydrogen. For instance, in the long term it would hardly make sense for Germany to import significant amounts of green hydrogen produced by renewables from a country where the domestic electricity demand is met by coal power plants without permanent CO<sub>2</sub> storage. Nevertheless, the infrastructure for green hydrogen exports needs to be built up gradually. Therefore, in the short and medium term it might be reasonable to start importing green hydrogen even if an exporting country's energy consumption still relies on fossil fuels.

Sustainability standards should cover the entire hydrogen life-cycle, including extracting raw materials, producing key components, transportation, storage and disposal. Standards should not only focus on the greenhouse gas emissions, but also take other environmental impacts, such as water consumption, space requirements, biodiversity and economic and social impacts, into account. Overall, applications using hydrogen as an energy carrier should measure their success based on a life-cycle comparison with the impact of the energy sources they replace.

Therefore, after the publication of its National Hydrogen Strategy, Germany should engage in a dialogue with other countries and regions that are or might become interested in importing and exporting sustainable hydrogen. The goal should be to foster global acceptance for sufficiently ambitious yet realistic sustainability standards for hydrogen as an energy carrier.

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