

A taxonomy of support mechanisms for the low-carbon hydrogen supply chain

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Abstract-

Although the actual scope of the hydrogen sector is still uncertain, many support mechanisms for low-carbon hydrogen have been introduced at the global level in recent years, with billions of dollars of funding soon to be disbursed. This article presents a comprehensive taxonomy of these support schemes, based on a global review of international experience covering more than 20 jurisdictions in different regions of the world. The majority of hydrogen support mechanisms introduced so far target production, consumption and cross-chain projects (either through risk-hedging contracts or direct grants), while there is limited experience with support for hydrogen transport and storage. The article identifies the main design elements of hydrogen support mechanisms, a classification that can be used in future works to critically assess alternative designs. The article also presents some initial trends in international experience, shedding light on a topic that is dramatically underrepresented in the academic literature.

Index Terms- Hydrogen economy; Hydrogen subsidies; Support mechanism; Risk-hedging; Direct grant; Fixed premium; Variable premium

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