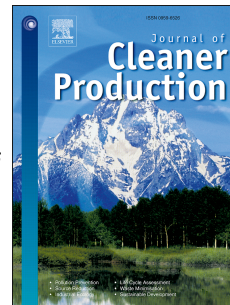


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Terminology used for renewable liquid and gaseous fuels based on the conversion of electricity: a review

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Terminology used for renewable liquid and gaseous fuels based on the conversion of electricity: a review

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Abstract

As the transport sector transitions away from fossil fuels and renewable fuels shift into focus, it is important that the terminology around renewable fuels is clarified. A number of terms such as *synthetic fuel* and *electrofuel* are used to describe both renewable and alternative fuels. The aim of this article is to identify and review these terms to avoid any potential misuse. An integrative review of terminology has been made. This review did not differentiate the articles in terms of the methodologies applied, but had the main objective to identify the terminology used and its definition. The results confirm that the term *synthetic fuel* is used generically in the majority of articles, without providing information about the production process of the fuel or differentiating between fossil-based and renewable-based synthetic fuels. The majority of the articles use the term *synthetic fuel* to describe fuels produced with coal-, gas- and biomass-to-liquid (xTL) technologies. However, a number of articles use the term beyond this definition. Results for the term *electrofuel* gave a similar outcome, as it was not clear which processes were used for the fuel production. In some cases, both *synthetic* and *electrofuel* referred to fuels produced through the same process, even though in reality the two processes are distinctly different. This could lead to a misinterpretation, especially if the terminology is utilized by policymakers. To prevent this, the article ends with a preliminary proposal for how to differentiate synthetic fuels from electrofuels based on the production process.

Keywords: electrofuel, synthetic fuel, renewable fuels

1. Introduction

Transport is the backbone of our society and a true indicator of a country's economy, development and sustainability [1]. In a transport sector with growing demand, renewable fuels are increasingly becoming vital for a sustainable future. The transport system is very complex with different needs and modes; hence, the conversion to a renewable, low-carbon fuel system is very slow. The existing transport infrastructure is well developed for petroleum derived liquid fuels, supplying more than 90% of the transport demand [2].

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