# BIOFUEL PROCESS PATENTS

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A patent bestows an exclusive monopoly right for an invention in the country in which it is granted. The Canadian *Patent Act* defines "invention" as "any new and useful art, process, machine, manufacture or composition of matter, or any improvement" thereof. Process patents protect the series of steps for preparing a product or enabling a desired transformation, for example converting animal fats or vegetable oils into alkyl esters or transforming sugar- or cellulose-based feedstocks into alcohol or dimethylfuran.

In the modern economy, manufacturing may occur in many countries. Financial, regulatory and geopolitical pressures may dictate that some products are produced in a given country principally or exclusively for export.

Many different international endeavours and cooperation initiatives are developing in the biofuel industry as the global demand for biofuels continues to grow. International talks and collaborations regarding ethanol have been observed between organisations in Japan and Brazil, as well as in other South American states. The Mexican firm PetroSun reportedly has plans to erect algae-to-biodiesel systems and oil extraction plants in the United States, Mexico and Australia. Biodiesel plants are being constructed or operated from Lima, Peru to Hamilton, Canada, as well as from the soybean-belt of the United States to Novi Sad, Serbia.

Since the basic compounds and compositions of biodiesel and ethanol biofuels are nothing new, the main thrust of biofuels research is geared to improving production processes to boost efficiency and drive down cost. Therefore, process inventions account for a significant slice of the patenting in this field.

But if a process patent gives a monopoly only in the country of the patent, can the owner enforce its patent rights when the process is used abroad?

The answer is twofold. On the one hand, the patent owner cannot prevent its process from being exploited in any country where it does not hold a patent. On the

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other hand, the patent owner can stop importation into the country where it holds a process patent, if the product was produced by the patented process abroad.

For instance, if a process for producing ethanol from cellulose feedstocks is patented in the United States alone, and this process is being utilized in South America, the ethanol produced by this process can be exported to any country except the United States. One must therefore appreciate the importance of evaluating the patent potential of a new technology on a country-by-country basis and with an eye to the import-export possibilities of the consumable product.

The specific application of infringement by importation may vary depending on jurisdiction. Its applicability also depends on the imported item and the end-product of the patented process. For instance, according to the *Saccharin* doctrine, which is in force in some countries like Canada and the United Kingdom, when the imported product is not precisely the same as the one resulting from the patented process, but is rather an intermediate which is then used in the production of the final product, the importation will nevertheless be an infringement if the patented process is important and not merely incidental to the imported product. For biofuels, this may be pertinent if the imported product is a pre-treated or genetically modified feedstock.

In general, Canadian case law defines infringement as “any act that interferes with the full enjoyment of the monopoly granted to the patentee” or any activity that deprives the inventor of full enjoyment of the monopoly conferred by law. Process patents should not be undervalued by R&D-driven entities, nor should they be underestimated by those involved in the manufacture or import-export of biofuels.

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