



BUNKERING

THE OFFICIAL MAGAZINE OF IBIA

DECARBONISATION TIMELINE AGREED NOW FOR THE HARD BIT



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NEW FUELS AND PATENTS

IBIA Board member Steve Simms, who also serves as Chair of IBIA's Legal Working Group and Legal Advisor to SEA/LNG, considers the implications of the increasing use of patented fuels

A bunker market requirement is that bunkers be as inexpensive as possible to power a ship safely and effectively. Residual petroleum-based fuels – essentially, the residue left after distilling – historically met this requirement well.

1997's MARPOL Annex VI added the requirement that bunkers can't just be affordable – they must be environmentally compliant. That wasn't a great challenge for residuals until January 1, 2020's requirement of worldwide bunker sulphur content (unless scrubbed) 0.5% outside of Emission Control Areas (ECAs, 0.1% required January 1, 2019).

The IMO July 2023 presents the industry with the further compliance challenge for fuel which used with new engine and related technologies leads reduction of overall greenhouse gas (GHG) international shipping admissions by at least 20% by 2030 and 70% by 2040 compared to 2008.

Fuels made by patented processes – first responding to 2020 0.5% sulphur content maximum, now, for lower GHG (principally, CO₂) emissions – have emerged as one answer to the bunkering market's requirement for relatively inexpensive, compliant fuels. There have been an increasing number of patents filed since 2018, when the IMO announced 2020's 0.5% limit, and since, as the market must respond to lower GHG requirements, frequently these are met by some type of biofuel blend with petroleum-based fuels.

With more patents, though, there is the increasing possibility of claims of patent infringement, and damages. Fuel producers also face the challenge when they make a new petroleum-based, compliant fuel, to determine whether their production infringes a patent. If the fuel doesn't infringe, producers must decide whether they should patent the fuel themselves, disclosing their production processes or attempt to protect the processes as a trade secret.

The question of whether a fuel infringes a patent is key considering the relative scarcity of 'green' blending components necessary to make lower GHG-emission fuels. The significantly larger non-maritime market, where price arguably is of less consideration than in the maritime market, will continue demand more green blending components.

The response of bunker traders and suppliers, and their customers thus must be either to move to fuels requiring no green blends (to solely LNG, methanol or ammonia, for example) or to secure contracts with producers offering green blends at a market-acceptable price.

But, if production of that fuel turns out to be infringing a patent, the supply goes away. If the trader, supplier or customer has invested in the infringing production, they could face damages for patent infringement or – more likely – for contributory patent infringement. Under

United States law, for example (35 U.S. Code § 271 – "Infringement of patent"):

- (a) ... Whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent.
- (b) Whoever actively induces infringement of a patent shall be liable as an infringer.
- (c) Whoever offers to sell or sells within the United States or imports into the United States a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practising a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use, shall be liable as a contributory infringer.

Along with this, many countries' legal systems prohibit the importation of patent infringing products. For example, in the U.S., the United States International Trade Commission (19 U.S. Code § 1337 – "Unfair practices in import trade") investigates patent-infringing imports and enters orders prohibiting them:



(a)
Unlawful activities . . .

(1)
. . . the following are unlawful, and when found by the Commission to exist shall be dealt with . . .

(B)
The importation into the United States, the sale for importation, or the sale within the United States after importation by the owner, importer, or consignee, of articles [which would include bunkers] that—

(i)
infringe a valid and enforceable United States patent . . .

(ii)
are made, produced, processed, or mined under, or by means of, a process covered by the claims of a valid and enforceable United States patent.

If there is no intent to load off the bunkers once they arrive in the US or elsewhere, even if they are infringing, there likely is not “importation” of bunkers. Also, under U.S. law (35 US Code § 272 – “Temporary presence in the United States”):

The use of any invention in any vessel . . . of any country which affords similar privileges to vessels . . . of the United States, entering the United States temporarily or accidentally, shall not constitute infringement of any patent if the invention is used exclusively for the needs of the vessel . . . and is not offered for sale or sold in or used for the manufacture of anything to be sold in or exported from the United States.

But there still might be “use” of the infringing bunkers - even if they are simply being held aboard an arriving ship with an entry that is not “temporary.” Of course, too, bunkers are also “used” for things “exported.”

It is not a too remote possibility that, a patent holder might attempt at least to threaten a bunker trader or supplier’s customer using supposedly infringing fuel, with infringement or contributory

infringement claims. A trader buying from a seller of such fuel could be held liable for contributory or direct infringement, as could a bunker seller. Whether the buyer, or seller, knows that the product is infringing isn’t a defence to liability, it only is a defence to the amount of damages (that is, whether the infringement was intentional).

The first (and still, after three years, ongoing) bunker patent infringement case is Magema Technology LLC v. Phillips 66 – No. 4:20-cv-02444 - United States District Court, Southern District of Texas, Houston.

Around the IMO’s 2018 announcement of the 2020 .5% sulphur limitations, two US inventors applied for, and the U.S. Patent and Trademark Office issued to them, several patents for producing .5% sulphur content petroleum-based bunkers. The main patent was US Patent No. 10,308,884, which describes a process for reducing the sulphur content of ISO 8217-compliant feedstock heavy marine fuel oil. The patented process – to make .5% compliant fuel - involves mixing the feedstock oil with an activating gas mixture, contacting the mixture with a catalyst, and then separating the liquid components from the gaseous and by-product hydrocarbon components.

Once they obtained the patents, the inventors approached Phillips 66. Here the patent infringement suit begins. The inventors claim that Phillips 66 once learning about the patent (patents must be sufficiently detailed, for a reader with capability to duplicate the patented good or process) used the process to make 0.5% fuel. Phillips 66 insisted, among other things, that it never infringed the patents and that there was nothing novel or patentable about the processes it used to make the fuel.

The inventors filed suit in 20201 – and Phillips 66 denied the complaint and counterclaimed to, essentially, cancel the patent and extensive (and expensive) litigation followed – with thousands of detailed exhibits and presentations and several industry experts on both sides.

Three years later, in July 2023, after a seven-day trial, the jury – 12 people, mostly with non-technical backgrounds – entered a verdict that Phillips 66 had not infringed the patents. The inventors, in the first part of August 2023, moved for a new trial arguing that:

At the start of trial, the question of whether the [Phillips 66] Bayway refinery infringed Claims 1 and 5 of the ‘884 Patent rested almost entirely on the resolution of a single disputed claim limitation—the flash point prior to hydro processing. With the merits overwhelmingly stacked against them, Defendants Phillips 66 and Phillips 66 Company (collectively “Defendants” or “Phillips”) deployed a deliberate trial strategy to mislead, confuse, and distract the jury from the actual issue in dispute.

As of this writing, Phillips 66’s opposition, which surely will argue that the trial and decision was sound, is to be filed and the inventors’ reply to follow. Then after the judge’s decision its likely, that much of the case will continue to the appellate court (the United States Court of Appeals for the Federal Circuit, a court, unlike the District Court, which has special jurisdiction to hear patent cases). The infringement case isn’t likely to be finally decided until late 2024, or later.

The case is significant because it is the first case to test the scope of patents for bunker refining, distilling and blending processes. The final case outcome, and those of others like it could have a significant impact on the bunker industry, and its customers, including, restricting the use of arguably patented bunker production, and facing bunker traders, suppliers and customers with infringement claims.

Specifically, one must ask, what if the inventors ultimately succeed? Will they enforce their patent against others buying or selling product arguably within their patent? And, if one is buying from Phillips 66 (or another supplier who might be using a process arguably like the patent in litigation), if the product now – with the jury’s verdict – one to confidently buy? What if the appellate court reverses and there is an infringement finding?



Some Patent Examples

To understand the range of patented bunkers, both for the purpose of meeting sulphur content requirements and the newer “green” GHG requirements, here are a few of the increasing number of current examples:

Korean Patent KR20210148398A (with U.S. and other related international patent applications): Process to cut crude oil feed into multiple pieces to make 0.5% compliant fuel, including so that vessels also can burn the fuel generate or sell electricity to the onshore grid, offsetting fuel costs.

US10443006B1 (assigned to ExxonMobil) - Low sulphur marine fuel compositions. This patent describes a method for producing low sulphur marine fuel by blending a hydro treated heavy atmospheric gas oil with a distillate fuel oil. The resulting fuel has a sulphur content of 0.5 wt% or less.

US20150353851A1 (assigned to Sunoco) - Low sulphur marine fuel. This patent describes a method for producing low sulphur marine fuel by blending a residual fuel oil with a distillate fuel oil.

European Patent EP2947135A1 (assigned to Shell)- Fuel compositions. This patent describes a method for producing low sulphur marine fuel by blending a hydro-processed residual fuel oil with a distillate fuel oil. The resulting fuel has a sulphur content of 0.1 wt% or less.

US9758738B2 (assigned to Permanente Corp.) - Green renewable liquid fuel. This patent describes a method for producing a liquid biofuel from a variety of biomass feedstocks. The method involves converting the biomass feedstock into a liquid fuel using a process called pyrolysis.

US11390819B2 (assigned to ExxonMobil) - Marine diesel fuel/fuel blending component compositions having high naphthenes to aromatics volume; reduced or minimised carbon intensity relative to fuels derived from conventional sources.

Significantly, the assignees of most of these patents, and many others for “green” bunker products, are well known producers and suppliers with significant resources including, to enforce their patents by infringement lawsuits. In the US there are also investors who invest in patent infringement suits where inventors cannot themselves fund the suits.

Spotting, or Predicting, Infringement Claims

Consequently, bunker traders, sellers and buyers should take a few basic steps to avoid infringement claims for bunkers that are blended or processed, which again, are almost always going to be petroleum products undergoing additional distilling processes and/or blended with “green” or other feedstock.

First, sales terms or requests for quote should insist that there are warranties of non-infringement.

Second, it's not enough to stop at confirmation that the bunkers are some versions of ISO 8217 and MARPOL Annex VI Regulations 14 and 18 compliant, and that, the bunkers are capable of being used to achieve the required GHG emissions. Traders, buyers and suppliers should inquire about the bunkers' source and how they were produced.

The bunkers might be marketed as a patented product – for example, sourced from a ‘major’ like the patent assignees ExxonMobil, Shell or Sunoco with the patents, above. That is assurance that the product is not going to be infringing (and draw a contributory infringement claim) and is some assurance of quality and compatibility; the producer likely with its product will have guidelines about use and characteristics.

The very recent problems – June 2023 – with bunkers apparently blended, sourced in Houston, further underline the importance of knowing the provenance of blended bunkers, and particularly so for bunkers where the sellers claim that their product is a green one that will enable GHG emission compliance.

It may be that the producer claims that the production process is proprietary. If so, there can be a non-disclosure agreement, but, if the producer refuses to (or claims it can't) disclose how the product was made, then, the buyer should consider whether to refuse the product even if the producer has warranted non-infringement. A further reason for this is compatibility of the product with previously loaded product: even if conscious efforts are made not to co-mingle, there still may be a meeting of products in ships' fuel systems, and a meeting of incompatible bunkers can cause problems.

Then, knowing something about the product, a buyer, or seller, can do a quick patent search to see if there's possible infringement. The key concept to apply is something called 'claim construction'.

Claim construction is the process by which a court or other tribunal determines the scope and meaning of a patent's claims. In the US, claim construction is a matter of law that a court, not the jury decides.

The claims of a patent are the numbered paragraphs that define the invention that is being patented. The claims are the most important part of a patent because they define the scope of the patentee's exclusive rights.

The process of claim construction begins with a court reviewing the patent's intrinsic evidence. The intrinsic evidence includes the patent claims, specification, and prosecution history. The specification is the part of the patent that describes the invention in detail. The prosecution history is the record of the patent application process, including the communications between the patent applicant and the patent-issuing authority (in the US, the US Patent and Trademark Office (USPTO)).

In a patent infringement suit, after reviewing the intrinsic evidence, the court will then consider any extrinsic evidence that is relevant to the meaning of the claims. Extrinsic evidence is any evidence external to the patent, such as expert testimony or dictionary definitions.

The court's goal in claim construction is to determine the meaning of the claims that would be understood by a person of ordinary skill in the art at the time the patent was filed. This is known as the "intrinsic meaning" of the claims.

The court's interpretation of the claims will then be used to determine whether the accused infringer's product or process infringes the patent. If the accused infringer's product or process falls within the scope of the claims, then it will be found to infringe the patent.

Claim construction is an important part of patent infringement litigation because it determines the scope of the patentee's exclusive rights – and – the likelihood of whether a patent holder successfully may sue for infringement.

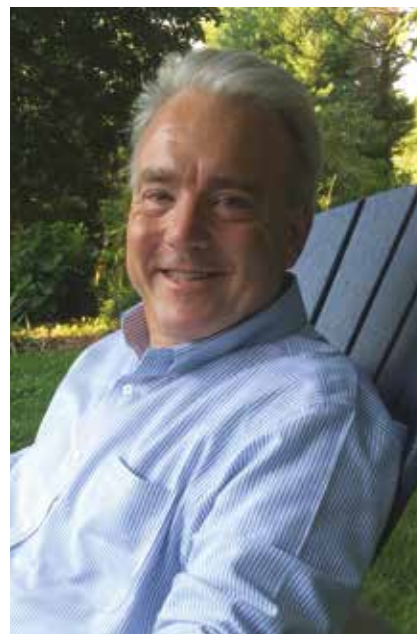
Knowing the basics of claim construction, a bunker buyer or seller can have a basic idea of whether a product – which usually will

be a blend or similar product not subject to a patent, is potentially infringing. Google Patents, online, is a quick way to search for patents which might cover the product.

Getting to Zero Is Getting More Complicated

As the marine industry moves towards 2050, bunker sellers, traders and buyers face growing requirements. The requirement of using and trading in non-infringing bunker product, could be said to be an 'emission' of the push to 'get to zero'.

Bunker traders and suppliers can be certain, though, that the requirement of selling the least expensive bunkers that will safely and effectively power a ship will continue to be a central consideration of an effective sale, rather than being close to net zero. Understanding the patent implications of selling and buying those bunkers, however, may help to stay at zero liability for any patent infringement claim.



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