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V. Standard essential patents: licensing challenges for energy companies

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As companies in the energy industry make use of the Internet of Things (IoT) and communication technology in products and services, some telecommunications (telecoms) companies have decided that they want a share of the resulting revenue and are seeking patent licences from energy companies that are selling connected devices and services.

A few patent holders are seeking to create a revenue stream from the licensing of end devices on the basis of the device price, and they do this by refusing to grant patent licences to certain suppliers of telecoms equipment further down the supply chain or by extracting excessive royalties. The refusal to grant licences means that some equipment suppliers cannot pass the necessary intellectual property (IP) rights up the supply chain to their customers, and this means that end devices are not licensed when they are sold or used, and so the patent holders can threaten energy companies with injunctions unless they pay the excessive royalty fees demanded.

In this chapter, we will explore some of the patent licensing issues that the energy industry needs to consider in the era of climate change and sustainability, as well as the use of wireless functionality and other common standards. IP practitioners in the energy industry should make themselves aware of these issues – both in the context of supply

contracts and their risk management, as well as managing the risk of claims under warranties and indemnities in mergers and acquisitions – given the potential for historical claims.

1. Standards in the energy industry

Standards are everywhere in the energy industry. Gas, oil and electricity standards are ubiquitous and critical for public and consumer safety and to ensure continuous supplies. Standards in the energy industry have been developed over the years by the British Standards Institution (BSI), the German Institute for Standardisation (DIN) and many other national standards organisations. As we have moved into a connected world, a raft of new standards have been, and are being, developed and used that will need to be understood by the energy industry. Here are just a few examples:

1.1 Smart meters

Smart meter systems use Wide Area Networks (WAN) and Home Areas Networks (HAN). A WAN is a network which allows smart meters to connect to servers of energy supply companies. A HAN is a secure network that links smart devices within homes.

On 14 May 2021, the Data Communications Company (DCC), which was set up by the UK government to manage smart meter

“As we have moved into a connected world, a raft of new standards have been, and are being, developed and used that will need to be understood by the energy industry.”

communications through a secure network to energy suppliers, reported that the amount of 'live' smart meters was 11,811,493.

The global smart meter market size was valued at US\$21.13 billion in 2019 and is projected to reach US\$39.20 billion by 2027, registering a compound annual growth rate (CAGR) of 8.80% during the forecast period.¹

1.2 Autonomous driving

Standards in autonomous driving include BSI Guidance PAS 1880,² which provides a set of initial guidelines focused on developing safe control systems for automated vehicles (AVs). V2X is a vehicle communication system that incorporates other more specific types of communication such as V2I (vehicle-to-infrastructure), V2N (vehicle-to-network), V2V (vehicle to vehicle), V2P (vehicle-to-pedestrian), V2D (vehicle-to-device) and V2G (vehicle-to-grid).

The full economic value of the connected and autonomous vehicle (CAV) market could be worth £41.7 billion by 2035.³ In January 2021, the UK Transport Minister, Rachel Maclean, said:

The investment in and development of CAVs could truly transform the way people and goods are transported, with innovation like this at the heart of our ambition to build back better. We're on the cusp of a driving revolution. Not only could this tech unlock vast opportunities for the UK economy and jobs market, it could significantly improve the safety and efficiency of how we travel over the coming decades.⁴

1.3 Electric vehicle charging

Electric vehicle (EV) charge points are used to provide charging to EV's with a battery and the electrical source that helps to charge the battery. Different standards in EV charging have been developed, including CHADeMO (an IEEE standard), CCS (Combined Charging System) and Tesla proprietary standards.

There are a number of companies that are looking to charge licence fees for companies using the standard.⁵

The EV charger market size was valued at US\$3.8 billion in 2019 and is projected to reach US\$25.5 billion by 2027, registering a CAGR of 26.8% from 2020 to 2027.⁶

2. What is the standards-setting process?

Standards are usually developed by standards setting organisations (SSOs). SSOs include international organisations such as the European Telecommunications Standards Institute (ETSI) and the Institute of

Electrical and Electronics Engineers (IEEE), but also national organisations such as the BSI and DIN. Typically, industry representatives and other interested parties meet in SSO working groups to discuss the technological solutions to incorporate in a particular standard. During that process, representatives may make proposals to include technology in the standard; the proposed technology may be covered by a patent or pending patent application held by the representative's company. If the proposed technology is adopted into the standard and it is covered by a patent, that patent is said to be 'essential to using the standard'. A patent that must be infringed when a product uses the standard is generally called a 'standard essential patent' (SEP).

In the normal course of things, if a patent is infringed by someone using the standard and is otherwise valid and enforceable, the patent owner can require the sellers and users of products infringing the patent to stop making and using the products. To avoid a SEP owner unfairly exploiting this leverage to demand supra-competitive royalties or to exclude standards-compliant products from the market, many SSOs require the owner of a SEP to voluntarily commit to license SEPs on fair, reasonable and non-discriminatory (FRAND) terms to third parties (this might also be royalty-free licensing, such as, Bluetooth, for example). This FRAND commitment is intended to be the cure for what would otherwise be an unlawful agreement among horizontal competitors to agree on a single standardised set of technical solutions, rather than compete with one another on different technical solutions.

Despite that commitment, the meaning of FRAND is not defined, and this dynamic gives a SEP owner significant leverage over a potential licensee as it can threaten to obtain an injunction to prevent the sale of any product that uses the standard if the licensee will not agree to its licensing terms.

A company that has chosen to develop a product and use a standard in that product will have made significant investments in product design and production, all of which would be put at risk if it cannot use the standard.

While SSOs require participants to declare their SEPs to the SSO and voluntarily commit that they will license their SEPs on FRAND terms, SSOs do not have the resources to check whether companies comply with their commitments, or whether patents that are declared to be essential to a standard are actually essential (and also whether they are valid and otherwise enforceable, on which points only a court could make an authoritative determination).

“A company that has chosen to develop a product and use a standard in that product will have made significant investments in product design and production, all of which would be put at risk if it cannot use the standard.”

Many SSO policies require disclosure of patents or patent applications before a standard is set. Moreover, the requirements and policies are not uniform, and in many SSOs the system is opaque and confusing, particularly to those not familiar with the technology in the standard.

3. What SEP issues arise in the standards-setting process?

Over the years the telecoms industry has seen many examples of different issues that make the licensing environment complex and difficult for new entrants, stakeholders and courts to understand and grapple with.

In addition, participants in the standards-setting process have many different strategies, including:

- inflating the size of their portfolios by filing multiple patents relating to optional or minor incremental features;
- where there may be a choice between several options of equal use to the standard, pushing for features that read on a participant's patent;
- holding back the disclosure of patents until after the standard has been set;
- filing patent applications for inventions that, in fact, are neither novel nor inventive; and

- filing patent applications while the standard is being discussed and based on the ideas of other participants.

SSOs and participants come up with new versions of standards, which are often small increments in the standardisation process, and which reuse a lot of technology and ideas from earlier versions of the standards. The strategy of many companies is to always push for a new standard which needs to be licensed, and for which SEP holders can seek to charge higher fees.

As it transpires, in practice most SEPs that have been declared 'essential' are more than likely not actually essential. According to a number of studies, 70% to 90% of alleged SEPs, when tested in court, are found either non-essential, invalid or not infringed. Indeed, only a tiny fraction (about 6%) of SEP-related court cases brought by non-practising entities (companies that do not actually sell products implementing standards, but merely hold SEPs) are successful in establishing essentiality, validity and/or infringement.

Because there are tens of thousands of patents that are declared essential to, for example, the 5G standard (in part due to over-declaration of SEPs), it is prohibitively costly – particularly for small and medium-sized enterprises (SMEs) and new entrants to the field – to navigate the thicket of declared SEPs.

The standards-setting process is, therefore, fraught with issues, and then finally, when the standard has been adopted, there will be a number of companies that own SEPs, and some will seek to license them. Under the IP rights policy of many SSOs, the SEPs must be licensed on FRAND terms, and that is when a new set of issues emerges.

4. What does FRAND (fair, reasonable and non-discriminatory) mean?

We know what the acronym stands for, and it is easy for companies to say they will license SEPs on FRAND terms. However, in practice, billions of pounds have been, and are being, spent on litigation between companies that cannot agree on what FRAND means and how much should be paid to whom, and by whom, in the supply chain.

Some of the arguments that come up in the FRAND debate in the telecoms industry include:

- What is a fair licensing rate? (ie, what does the 'F' in FRAND mean?)
- What is a reasonable licensing rate? (ie, what does the 'R' in FRAND mean?)

- What does non-discriminatory mean? (ie, what does the 'ND' in FRAND mean?)
- Can SEP holders charge different SEP rates to SMEs compared to multinationals?
- Should there be a public price list?
- Should there be one price for SEPs for all implementers of the standard?
- Should the licensing fees and rates that SEP owners charge be publicly available, given that the standard is public?
- Should the SEP be valued on the component that uses the standard and infringes the patent?
- Should the SEP be valued on the price of the end device or the component that uses the standard and infringes the patent?
- Should the value of the SEP be based on the value of the patent to the standard?
- What is a reasonable royalty rate for all SEPs for each standard?
- Should there be a cumulative royalty cap, or fixed price, for all royalties for all SEPs in a standard?
- Should the royalty (and/or royalty cap) be fixed and published before the standard is set (*ex ante*)?
- What is a reasonable per patent rate?
- Is the use of the SEP optional or mandatory?
- How many SEPs are there for the whole of the standard?
- What share of all SEPs does each SEP holder have?
- Should every company in the supply chain be able to get a SEP licence on FRAND terms?
- Can SEP holders selectively refuse to license some companies in the supply chain?
- Can SEP owners 'turn a blind eye' to infringement by some companies, and yet sue others?
- Is there any agreement among SEP owners about the pricing of SEPs?
- Does the FRAND encumbrance travel with the patent, for example, if it is assigned to another company?
- How does a transfer of a patent (or group of patents) affect the value of the remaining portfolio?
- Does a single patent transferred from a portfolio of patents to another company mean that a single patent is worth more outside of the portfolio?
- Should there be injunctions for SEPs?
- Should there be injunctions for critical sectors (eg, eCall for cars or safety-critical industries like gas or electricity installations)?
- Should a court in one country be able to set a global rate for a SEP or a portfolio of SEPs?

As you might imagine, there are many divergent views between: (1) companies claiming to own SEPs; (2) those companies from whom

they demand licensing fees; and (3) those companies that are refused licences by SEP holders.

This is an extract from the chapter 'Standard essential patents: licensing challenges for energy companies' by Robert Pocknell in the Special Report '*Intellectual Property in the Energy Sector: Challenges and Opportunities for an Industry in Transition*', published by Globe Law and Business.