How patent pools are powering the smart meter revolution

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The electricity grid is one of mankind's greatest technical achievements. It is ubiqutous across the world and powers so much of what we take for granted everyday. Now, in Europe, the grid is undergoing dramatic change with traditional energy sources being rapidly replaced by much more environementally-friendly ones.

At the heart of this transition are smart meters, which already represent over 50% of the electricty meters in use in Europe. These transformative devices are made possible by standardised wireless connectivity technology and the standards essential patents (SEPs) it incorporates. Without standards (and SEPs), smart meters would not be possible.

However, rather than seeing SEPs as an indispensable facilitator of this brand new tomorrow, there are those who seek to create the impression that SEPs are a hindrance to it. Unfortunately, many of the claims they make are based on false assumptions and poor research. Unfortunately, the spread of such disinformation may slow down progress by sowing confusion and making the manufacture of smart meters less attractive. The damage this would do to the green transition is immense. That's why it is so important to counter anti-SEP narratives when they emerge.

This essay looks at the rapid growth of smart meters and explains why it would not be possible without standards and SEPs. Furthermore, it corrects some of the falsehoods being spread about smart meters and SEPs, and explains the vital role that patent pools play in making sure smart meter technology is shared as efficiently, as rapidly and as cost effectively as possible.

Smart grids and smart meters

Over the past decade, the electrical grid across the European Union has experienced a quiet, but revolutionary transformation. Gradually ending its dependence on coal, oil, and gas powered generating stations as the primary sources of electricity, Europe's electrical grid is now increasingly fed by smaller, decentralized, and diverse sources of energy such as wind and

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solar. The construction of the so-called ”smart” grid has been a fundamental element of the green energy transition. As the European Commission explains:

> ”Smart grids are energy networks that can automatically monitor energy flows and adjust to changes in energy supply and demand accordingly. When paired with smart meters which measure the energy fed into and consumed from the grid, smart grids can provide real-time information on energy-usage to consumers and suppliers. Since smart grids can respond to changes in supply and demand, they are well-suited to cope with variations in supply from renewable energy sources, helping to integrate more wind and solar, as well as new electricity loads, such as heat pumps and electric vehicles.”
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> ”Smart grids open-up the possibility for consumers who produce their own renewable energy, for example from roof-top solar panels, to sell it back to the grid.” [2]

Continuing, the Commission states that key to the construction of smart grids is the smart meter.

> ”Smart meters can provide close to real-time feedback on energy consumption, enabling consumers to manage their use, save energy, and lower their bill, for example, by adapting their energy usage to different energy prices throughout the day. Moreover, smart meters enable consumers to actively participate in energy communities and energy sharing schemes.”
>
> ”Through smart metering, network operators get a better insight into each part of the network, This allows them to better plan their investments and manage their infrastructure in response to requirements from their customers, therefore reducing network operation and maintainence costs which are ultimately borne by consumers through network tariffs.”

EU Directive 2019/944, which established common rules for the internal market for electricity, identified the vital importance of smart meters. To ensure consumers gain most from the competitive market for electricity, the directive states: ”Beneficiaries need to be equipped with smart metering systems and have access to the offers and savings available on the competitive market, in particular relating to dynamic electricity price contracts.” The directive also points out that: ”The regular provision of accurate billing information based on actual electricy consumption, facilitated by smart meters, is important for helping consumers to control their electricity comsumption and costs.”[3]

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[2] https://energy.ec.europa.eu/topics/markets-and-consumers/smart-grids-and-meters_en

[3] Directive (EU) 2019/944 of the European Parliament and of the Council on common rules for the internal market for electricity, 5 June 2019

In June 2023, the Commission adopted the Implementing Regulation (EU) 2023/1162 on interoperability requirements and non-discriminatory and transparent procedures for access to electricity metering and consumption data. This marked the beginning of a broader initiative to safeguard and help engage consumers in the energy transition through digitalisation.[4]

Widespread deployment of smart meters in the EU

A 2022 report from the European Commission's Joint Research Council (JRC) provided information on the successful roll-out of smart meters across the EU. This now three year old paper observed that in 2020 43% of existing electricity meters in the EU, or 123 million, had been upgraded to smart meters. The EU Agency for the Cooperation of Energy Regulators (ACER) reported that this figure had increased to 54% at the end of 2021.[5] The JRC estimated a 92% penetration rate, or 223 million smart meters, would be achieved by 2030.

Country	Smartmeter Penetration
Austria	65%
Belgium	57%
Denmark	99%
Estonia	100%
Finland	100%
France	94%
Germany	1%
Ireland	54%
Italy	98%
Latvia	Near 100%
Lithuania	12%
Netherlands	90%
Norway	99%
Poland	80%
Portugal	85%
Spain	100%
Sweden	100%
Switzerland	20%
United Kingdom	57%

(Source: Openvolt[6])

[4] DG for Energy, "Electricity metering and consumption data interoperability, Guidance for the reportinf of national practices in accordance with Commission Implementing Regulation (EU) 2023/1162

[5] https://energy.ec.europa.eu/topics/markets-and-consumers/smart-grids-and-meters_en#deployment-of-smart-meters

[6] https://www.openvolt.com/blog/post/the-state-of-smart-meter-data-access-across-europe
Already by 2022, Estonia, Finland, Italy, Malta, and Sweden had smart meter penetration rates close to 100%.[6] More recent data from from November 2024 reveals very high smart meter rates in all member states of the EU, with one exception. In Germany, barely 1% of consumer electricity use is measured by a smart meter.

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Key to the widespread and successful deployment of smart meters is wireless connectivity. It enables these intelligent monitoring devices installed at the point of use to communicate real-time or near real-time information to the cloud.

Standards to the rescue

The initial deployment of smart meters across the EU relied on the existing availability of 2G and 3G cellular connectivity (GPRS). As these networks struggled to meet the demands of the increasingly large, increasingly dense, and diverse Internet of Things (IoT), companies involved in the development of cellular wireless communication standards invested large sums of R&D into the creation of new wireless standards (low power wide area networks, or LPWANs) specifically geared towards IoT applications.

As a result of the R&D investments in 3GPP standards, when 4G was introduced it included specific solutions for IoT. 4G has since evolved to provide several different options for wireless IoT connectivity, including LTE Cat 1, LTE Cat 1 bis, LTE-M, and NB-IoT. The latter two are specifically designed to address so-called ”massive IoT”.

LTE Cat 1 was available in the original verision of 4G (Release 8 in 2008). LTE Cat 1 bis, which supports a single antenna providing for lower cost and a smaller profile, was included in Release 13 from 2016. Release 13 also introduced LTE-M and NB-IoT.

Even someone familiar with IoT standards can become confused by all of these acronyms. Differences include faster upload and download data rates, latency (from real-time to near real-time to delayed), different ability to penetrate buildings and underground spaces, amount of radio spectrum used, the number and density of connected IoT devices which can be supported, and battery life.

In short, because of investments in R&D made by the developers of 3GPP cellular standards, there are a range of cellular IoT standards for wireless connectivity suitable for different applications and products.

[7] Vitiello, Silvia, Andreadou, Nikoleta, Ardealn, Mircea, Fullim Gianluca, ”Smart Metering Roll-Out in Europe: Where do we stand? Cost Benefit Analysis in the Clean Energy Package and Research Trends in the Green Deal”, Energies, MDPI, Basel, Switzerland, March 2022
https://www.mdpi.com/1996-1073/15/7/2340

Standards offer different wireless LPWAN options for smart meters

In addition to 3GPP cellular standards, other standards development organisations (SDOs), have produced wireless connectivity standards for IoT which operate independently of the cellular networks:

- **MIoTy**, orginally developed by Germany's Fraunhofer IIS and Nürnberg's Diehl and later by the MIoTy Alliance, is optimised for so-called Massive IoT. MIoTY is also an approved ETSI Standard (TS 103 357). Designed for long range and long battery life - and supporting up to one million devices per km^2 - MIoTY is suitable for a wide range of IoT applications beyond smart meters. However, it does not support roaming.
- **DECT-NR+** was developed by the DECT Forum. NR+ operates independently of the cellular network on unlicensed bands. NR+ is a self-arranging mesh network which has been approved by ETSI (as ETSI Standards TS 103 636 -1 to -5). NR+ chipsets are manufactured by the Norwegian firm Nordic Semiconductor.
- **WiFi** was developed by the IEEE (as various versions of IEEE 802.11) and is ubiqutous across the member states of the EU.
- **Zigbee**, developed by the Zigbee Alliance (now the Connectivity Standards Alliance, or CSA), has also been standardised by the IEEE as IEEE 802.15.4.
- **LoRaWAN**, based on an invention by the French company Cycleo (later acquired by the American chip manufacturer Semtech Corp), was developed by the LoRaWAN Alliance and is standardised as ITU-T Y.4480.
- **Sigfox** was one of the first wireless connectivity solutions for IoT developed in France. It is now owned by UnaBiz.

Unlike standards for cellular communications, where there is often only one or a few options available to manufacturers and consumers, IoT is characterised by a dynamic and highly competitive landscape of different connectivity options, both cellular and non-cellular.

Wireless connectivity standards and SEPs

Private R&D investment often results in patents covering technolgies which become incorporated into standards. The issue of wireless standards and SEPs has been a topic of discussion since before GSM (2G) first appeared in the nascent European Union.

Academics, industry analysts, lobbyists, and the European Commission identified many of the challenges associated with the licensing of cellular SEPs in the late 1980s. The European Commission first outlined its approach towards the inclusion of patented technology into European standards in 1990, explaining:

> "Whenever a contribution to a European standardization body is covered by IPR or patents, sufficient information should be provided to allow the experts at the working group level to base their opinion as to whether to include specifications covered by IPR or patent rights on the actual situation, including, when appropriate, the applicable licensing conditions. Public inquiry should be

> envisaged only if fair and reasonable conditions have been achieved and duly noted."[8]

This was followed almost precisely two years later, in 1992, with another communication from the Commission on Intellectual Property Rights and Standardization which introduced FRAND into the lexicon of European standards development:

> "If agreement is reached between the rightholder and the standard-making body, the terms for licences must be fair, reasonable and nondiscriminatory."[9]

SEP monsters under the bed

It's now 33 years since the European Commission's even-handed guidance that led to the creation of the benchmark ETSI IPR Policy and its FRAND commitment in 1994, but there remains a divide between implementers of standards and SEP holders. Briefly stated, some of the former do not want to pay for the use of SEPs; while the latter rely on receiving fair and reasonable compensation for a license to use their SEPs to justify past investments in R&D and to support continued investments. The history of this conflict was recently documented in an article written by this author and published by the Journal of the Licensing Executives Society International (LESI), *Les Nouvelles*, in a Special Issue on Standard Essential Patents.[10]

The basic narrative pushed by the implementers' lobby is that a lack of transparency around the existence of SEPs and associated licensing costs, refusals to license component suppliers in the value chain, discriminatory licensing, and other "abuse" by SEP holders creates unpredictable and "excesssive" license fees that threaten the widespread adoption of standards. Lobbyists have also spread the fear that SEP holders abuse their dominant market position and use the threat of lawsuits and injunctions to "hold-up" companies that implement standards to demand exorbitant royalties.

However, real world experience does not support such across-the-board claims. Instead, there is no doubt that 2G, 3G, 4G, and 5G have all been a massive commercial successes. The speed at which new generations of mobile connectivity have been introduced to the market and the mind-blowing advances in network capability have been accompanied by decreasing prices, as well as robust competition in the number and type of devices and services available to consumers.

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[8] COM(90) 456 final, 8 October 1990

[9] COM(92) 445 final, 27 October 1992

[10] Stasik, Eric "An Empirical View of SEP Royalty Rates: The Brief History of Trying to Separate Fact from FUD (Fear, Uncertainty, and Doubt)", les Novelles, March 2025, p. 7-13

Despite these extraordinary achievements, though, lobbyists working on behalf of implementers continue to spread fear and disinformation about SEP licensing. This campaign of disinformation is now appearing in the context of IoT and smart meters.

Fear, uncertainty and doubt

In an article released on LinkedIn in May 2025 entitled ”Smart meters, smart metering, and standard essential patents”, co-authors Robert Pocknell[11] and Graham Bell repeat the familiar litany of lobbyist talking points.[12] In doing so, they continue the campaign of fear, uncertainty and doubt about SEPs that began in 1998 with a white paper issued by the International Telecommunications Standards User Group (ITSUG) entitled ”The GSM Standards, IPR and Licensing (An Example of the Restrictive Effects of Standardization”).[13]

Assertions made by ITSUG, including ”when GSM mobile handsets first appeared on the market cumulative royalties amounted to as much as 35 percent to 40 percent of ex-works selling price” were subsequently disproved by empirical analysis which this author detailed in the previously cited essay published by *Les Novelles*.

Put simply, dire predictions about SEP licensing being a hindrance to the success of GSM failed to materialise. Instead, GSM was one of the biggest industrial successes to come out of the European Union. The same appliues to 3G, 4G, and 5G.

The May 2025 Pocknell/Bell paper claims that the smart meter industry in Europe is being held back by uncertainty and doubts surrounding the licensing of SEPs. This assertion is contradicted by facts obtainable with little effort.

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[11] Mr Pocknell acted as the secretariat of ITSUG ”whose then members included amongst others Marconi PLC, Interdigital, Sony, Sendo, Mitsubishi, Panasonic and Blackberry.” According to Mr Pocknell’s biography included in the May 2025 paper, ”ITSUG was established to represent the interests of standards users.” Mr Pocknell was also chair of the Fair Standards Alliance which has engaged in lobbying in support of the European Commission’s Proposal for a Regulation on SEPs, endorsed by SEP implementers.

In 2019, LobbyFacts listed Mr. Robert Pocknell as Chair, Person in charge of EU relations, and Person with legal responsibility for the Fair Standards Alliance. https://www.lobbyfacts.eu/datacard/fair-standards-alliance?rid=354710219654-02&sid=106002

The European Commission’s Work Programme 2025 – COM(2025) 45 final announced its intention to withdraw its Proposal for a Regulation on Standard Essential Patents – COM(2023) 232 final

[12] The authors published their article on the social media site Linked-In on May 13, 2025.

https://www.linkedin.com/posts/robertpocknell_smart-meters-smart-metering-and-seps-13-activity-7328125020210147328-2Qpv?utm_source=share&utm_medium=member_desktop&rcm=ACoAAAA4wucBa905QjB02MmLu8N31aGQhwviJR4

[13] The GSM Standards, IPR and Licensing (An Example of the Restrictive Effects of Standardization), International Telecommunications Standards User Group, December 1998 (from the author’s paper files.)

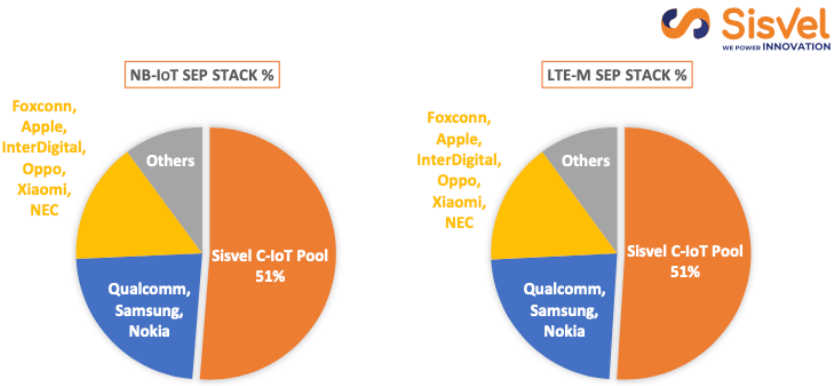
As previously stated, according to ACER, fully 54% of electric meters (more than 123 million devices) across the EU have already been upgraded to smart meters. That does not indicate doubt or uncertainty about licensing SEPs having been an impediment. Instead, the march towards the European Commission's goal of an EU-wide smart grid with a 100% penetration rate of smart meters seems to be progressing at an impressive pace.

Misinformation about the coverage provided by patent pools

In their paper, Mr Pocknell and Mr Bell present a table (the source of which is not identified) which they say represents the landscape of SEPs for LTE. Using this table and adding up the proported shares of the LTE landscape owned by the members of two different patent pools - ones operated by Avanci and Sisvel - the authors conclude that "Avanci claim $3.00 for approximately 52.49% of the [LTE] landscape" and that Sisvel's pool covers "approximately 23.35% of the 4G SEP landscape".

As well as using the adverb "approximately" followed by very precise percentages, the authors fail to point out that Avanci's smart meter licensing programme covers LTE-Cat 1, while Sisvel's "cellular IoT" progamme covers two completely different standards: LTE-M and NB-IoT. That is a very telling omission.

Data available from Sisvel indicates that the Sisvel pool for NB-IoT covers 51% of the potential stack of NB-IoT SEPs and 51% of the potential stack for LTE-M SEPs. Mr Pocknell and Mr. Bell could have asked for this information from Sisvel but apparently chose not to.



(Source: Sisvel)

LTE-Cat 1, LTE-M, and NB-IoT are different standards

As mentioned above, LTE-Cat 1 was included in Release 8 of LTE, whereas LTE-M and NB-IoT were not introduced until Release 13 of LTE. This matters. LTE-Cat 1 is supported by any network that supports LTE (4G), whereas LTE-M and NB-IoT are only viable on networks which specifically support them.[14]

[14] According to information supplied by the GSMA, LTE-M and NB-IoT are supported in every member state of the EU.

So, while LTE-Cat 1 might fairly be viewed as an LTE mode of operation involving the full-stack of SEPs declared as essential for LTE, LTE-M and NB-IoT are separate standards included as part of LTE (from Release 13 onwards). This means that although it may be possible to assess the share of the total stack for LTE-Cat 1 covered by Avanci's pool members by comparing it to the total number of SEPs declared as essential for LTE, it is incorrect to assess the share of the stack for LTE-M and NB-IoT owned by Sisvel's pool members in the same way. To do so creates the false impression that Avanci's pool offers over twice the coverage Sisvel's does.

The authors caution: "Great care must be therfore be taken by smart meter companies seeking to take a license to SEPs to ensure that they are getting the license rights they expect to be getting, from all SEP holders and licensors, to sell their products." Perhaps Messrs Pocknell and Bell should have exercised a little more care in providing accurate information to smartmeter manufacturers.

Misinformation about cumulative license fees

Double dipping

The authors also assert that: "Approximately 19.5% of the LTE landscape is licensed under both the Avanci pool and the Sisvel C-IoT pool, so great care must be taken to ensure there is no 'double-dipping' (i.e. SEP holders being paid twice for the same patent in different pools.) A question arises as to whether the 'double-dipping' element is taken off for the Sisvel fee or the Avanci fee."

While it is unclear (and unknown) whether there are any SEPs owned by a member of both the Avanci and Sisvel pools which are essential to both LTE Cat-1 and LTE-M and NB-IoT, what is clear is that Avanci and Sisvel are licensing DIFFERENT STANDARDS. A license to LTE Cat-1 does not provide a license to LTE-M or NB-IoT and vice versa.

The warning about "double dipping" is another clear example of a narrative which atempts to mislead smart meter manufacturers about the true cost of licensing and the risks of implementing LTE Cat-1, LTE-M, and NB-IoT.

Two license fees?

The authors, using a hypothetical smart meter which costs $100, combine the price of a license under Avanci's smart meter program with the cost of one under Sisvel's C-IoT program "making the combined fee claimed of $5.00 per unit (subject to double-dipping deductions)."

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https://www.gsma.com/solutions-and-impact/technologies/internet-of-things/mobile-iot-commercial-launches/

But, to be very clear, Avanci and Sisvel are not licensing smart meters as such, they are licensing completely different wireless connectivity standards which may be implemented in smart meters.

The only scenario where a smart meter manufacturer would have to pay a license fee to both Sisvel and Avanci would be in the unlikely case of a smart meter implementing both LTE Cat-1 and LTE-M. As LTE Cat-1 provides greater capability than LTE-M and LTE Cat-1 is supported in every network that supports LTE, adding LTE-M as a connectivity option along with LTE Cat-1 makes no technical or business sense.

It is difficult to understand why Mssrs. Pocknell and Bell would present such an unlikely scenario - unless the reason is to be able to claim that SEP license fees could be at least $5 per smartmeter and potentially even higher as neither pool covers 100% of the SEPs declared to their respective standards. A fuller picture of publicly available licensing costs for smartmeter manufacturers (shown below) suggests another reality.

Public royalty rates in other bilateral LPWAN IoT licensing programs (per device)				
	NB-IoT		LTE-M	
	Royalty rate	***% SEP Stack***	***Royalty rate***	***% SEP Stack***
Sisvel Cellular IoT	US$0.08-$0.66 (~<6% of ASP)	51%	US$0.08-$2 (~<6% of ASP)	51%
Qualcomm[9]	US$0.15-US$0.30	10%	US$0.485	10%
Huawei (IoT-centric devices)	1% of ASP <US$0.75	13%[10]	1% of ASP <US$0.75	13%[11]
Huawei (IoT-enhanced devices)	US$0.3		US$0.5	

Source (Sisvel)

Misinformation about 5G

5G and 5G RedCap

The authors state that ”5G and 5G Redcap licensing proposals have not yet been announced by Avanci or Sisvel for smart meters or EV chargers”. This too is not entirely accurate. RedCap is a replacement for LTE Cat-1 which is licensed by Avanci for smart meters and EV chargers. Avanci, which has separate licensing programmes for smart meters and EV chargers, has indeed not yet announced licensing programmes for smart meters or EV charger.

Sisvel’s licensing programme for ”Cellular IoT” for LTE-M and NB-IoT is not specific to smart meters or EV chargers, but is available at the rates posted on Sisvel’s website for any IoT device. Sisvel’s C-IoT programme is already available for 5G devices insofar as LTE-M and NB-IoT are part of 5G.[15]

[15] GSMA, Mobile IoT in the 5G Future, NB-IoT and LTE-M in the context of 5G. ”This future is now assured, as 3GPP has agreed that the LPWA use cases will continue to be addressed by evolving NB-IoT and LTE-M as part of the 5G specifications, so confirming the long term status of both NB-IoT and LTE-M as 5G standards” NB-IoT and LTE-M are included in 3GPP Standards from Release 13 (LTE-Advanced) to Release 17 (5G Advanced.)

So, although Sisvel has not formally announced specific licensing programs for 5G, its licenses for NB-IoT and LTE-M cover 5G for smart meters and EV chargers (or any other IoT device) at the same prices available for 4G.

In addition to being ”5G Ready”, Sisvel’s C-IoT licensing program is aggressively priced to grow the market for NB-IoT and LTE-M. Avanci’s price for a smart meter license to (3G and 4G) is $3 per device. Given that the per vehicle price of Avanci’s 5G automotive programme ($32/vehicle) is 60% higher than its price for its combined 3G and 4G vehicle programme ($20/vehicle), it is not hard to imagine that if and when Avanci announces a smart meter programme for RedCap it will be similarly more expensive.

When it comes to EV chargers, Avanci’s prices range from $5 per device those with a capacity of less than 25kW and ”without a user interface to receive and present informtion received over a cellular network to the EV Charger User”, up to $13 per device for EV chargers with 150kW or more output power and ”capable of performing infotainment functions”.[16]

In contrast, Sisvel’s license for LTE-M and NB-IoT for smart meters is $2/unit (and if NB-IoT only $0.66 per unit).[17] For other cellular IoT devices, the price of a combined license for LTE-M and NB-IoT ranges from $0.08 per device to $1.33 per device (for selling prices up to $130). When it comes to EV chargers, any and every EV charger implementing NB-IoT only and costing more than $20 per device costs a mere $0.66 per charger, irrespective of the power output or additional features.

The value of a license

”Price is what you pay, value is what you get” is a phrase made popular by the investor Warren Buffet. This pithy expression explains a core principle in economics: the distinction between the cost of a good or service and its actual worth or utility.

The discussion of royalty rates as a price per unit or percentage of net sales price for a license to use SEPs takes the focus away from the value that wireless connectivity brings to the electricity market.

In addition to being a vital component in the green transition, smart meters equipped with wireless connectivity provide energy companies with what economist Yannis Varoufakis calls ”cloud capital”. Referring to Tesla, Elon Musk’s electric vehicle company, the former Greek finance minister provides an example:

> ”One reason financiers value it so much higher than Ford or Toyota is that its cars’ every circuit is wired onto cloud capital. Besides giving Tesla the power to switch off one of its cars remotely, if for instance the driver fails to service it as the company wishes, merely by driving around Tesla owners are uploading in real

[16] https://www.avanci.com/iot/evcharger/

[17] https://www.sisvel.com/licensing-programmes/iot/cellular-iot/#tab-licence-terms

> time information (including what music they are listening to!) that enriches the company's cloud capital."[18]

Tesla's cloud capital is enabled by the same wireless connectivity that is part of the smart grid. With the abiliy to measure the consumption (and production) of electricity on a granular, per consumer basis, power companies can amass a vast amount of precise, detailed knowledge of electricity consumers' habits. This cloud capital will enable them to more accurately plan for future energy needs, to identify areas where efficiency can be improved, and to optimise the grid for peak power generation.

It is the connectivity made possible by wireless standards that enables all this and more. So, when considering the price of a license, it is important to keep in mind that the value provided extends far beyond the smart meter itself.

Value provided by patent pools

Of course, there are challenges to licensing SEPs for wireless connectivity standards. The large number and fragmented ownership of SEPs, the difficulties of engaging in bilateral negotiations with dozens of SEP owners, and the duplication of effort amongst implementers who lack a sophisticated understanding of wireless technologies are issues which should not to be underestimated. But these challenges are exactly the reason why patent pools exist.

Take the Sisvel cellular IoT pool, for example. Sisvel does the hard work of verifiying the essentiality (and necessity) of the SEPs it offers for license, Sisvel's programme managers have done the hard work of negotiating with 35 individual pool members to come up with an agreement on a price which works for SEP holders and implementers alike. Sisvel makes licenses available to all of the individual pool members' relevant patents through a single agreement and turns the administration of dozens of individual royalty payments into one.

What's more, Sisvel provides transparency to the market by identifying the SEP holders included in the pool, providing a 52 page list of the SEPs being offered for license, and publishing its rate chart. Of course, these are rates which are the same for everyone, so creating a level playing field for smart meter manufacturers.

Put all of the above together and it is very clear that patent pools such as Sisvel's provide transparency, efficiency, and ease of licensing that are vital to the success of the green transition.

Sisvel's pool does not solve all of the challenges of licensing SEPs for the standards implemented in smart meters, but it solves a large slice of them. When approached by SEP holders outside of the pool, smart meter manufacturers should insist that these SEP holders voluntarily make licenses available through the pool. Over time, a successful pool will attract

[18] Varoufakis, Yanis, "Technofeudalism", Penguin Random House UK, 2023, p.88

even more SEP holders to it, increasing the value provided and making SEP licensing easy, fast, and efficient for everyone.

Instead of distributing misinformation which make it appear that SEP licensing represents an insurrountable hurdle to the roll out of smart meters across the EU, and that patent pools are part of the problem, everyone truly committed to the green energy transition should work together to ensure patent pools are a vital part of delivering it.