

Technology Market Scan

INTERNATIONAL

Patent filings hit a record high in 2022

According to the World Intellectual Property Organization (WIPO), Chinese telecoms giant Huawei remained by far the most prolific patent filer in 2022, with well over 7,600 to its name.

South Korea's Samsung came in second, followed by Qualcomm of the US, Mitsubishi of Japan, and Ericsson of Sweden.

Record applications

Globally, patent applications rose slightly to more than 278,000 in 2022 – the highest number ever recorded in a single year – despite the huge economic challenges due to Russia's invasion of Ukraine, the continuing COVID pandemic, rising inflation and supply chain woes.

In India, patent registrations shot up by 25.4 per cent, and South Korea saw sharp growth of just over six per cent. However, the overall picture was of more modest growth, said Carsten Fink, WIPO Chief Economist.

"On the one hand, this represents the 13th year of uninterrupted growth", he said, "which I think is quite noteworthy, on the other hand, of course 0.3 per cent is relatively modest growth rate which we attribute to the challenging global economic conditions that prevailed in 2022."

Asia in the lead

By region, Asia saw the fastest growth in patent filings while also increasing its overall share by half a per cent, to 54.7 per cent in 2022.

Demand for design protection saw double-digit growth with China's accession to become part of the international design registration system, powering a surge in international design applications.

WIPO's Hague System for the International Registration of Industrial Designs saw an 11.2 per cent rise in the number of designs included in international applications – climbing to just over 25,000.

Trademark protection

After what WIPO described as "exceptional growth" in 2021 of 15 per cent, the use of the international trademark system for protecting brands during 2022 fell by –6.1 per cent, which is the biggest drop since 2009, when the world was reeling from the financial crash.

2021's growth was fuelled by the introduction of new goods and services in response to the shock of the COVID-19 pandemic, and although 2022 saw a major fall, WIPO pointed out that the total number of applications filed was still eight per cent higher than in 2020.

<https://news.un.org/>

Hydrogen patents indicate shift towards clean technologies

Technologies motivated by climate change concerns accounted for nearly 80% of all patents related to hydrogen production in 2020. According to a joint study of patents by the European Patent Office (EPO) and the International Energy Agency (IEA), hydrogen technology development is shifting towards low-emissions solutions such as electrolysis.

The report is the first of its kind and uses global patent data to analyze innovation in all hydrogen technologies comprehensively. It covers the full range of technologies, from hydrogen supply to storage, distribution, transformation and end-user applications.

"Hydrogen from low-emissions sources can play an important role in clean energy transitions with potential to replace fossil fuels in industries where few clean alternatives exist, like long-haul transport and fertilizer production," said IEA Executive Director Fatih Birol. "This study shows that innovators are responding to the need for competitive hydrogen supply chains, but also identifies areas – particularly among end-users – where more effort is required. We will continue to help governments spur innovation for secure, resilient and sustainable clean energy technologies."

"Harnessing the potential of hydrogen is a key part of Europe's strategy to achieve climate neutrality by 2050," said EPO President António Campinos. "But if hydrogen is to play a major role in reducing CO₂ emissions, innovation is urgently needed across a range of technologies. This report reveals some encouraging transition patterns across countries and industry sectors, including Europe's major contribution to the emergence of new hydrogen technologies. It also highlights the contribution of start-ups to hydrogen innovation, and their reliance on patents to bring their inventions to market."

The study presents the major trends in hydrogen technologies from 2011 to 2020, measured in terms of international patent families (IPFs), each of which represents a high-value invention for which patent applications have been filed at two or more patent offices worldwide. The report finds that global patenting in hydrogen is led by the European Union and Japan, which account for 28% and 24%, respectively, of all IPFs filed in this period, with significant growth in the past decade. The leading countries in Europe are Germany (11% of the global total), France (6%), and the Netherlands (3%).

The United States, with 20% of all hydrogen-related patents, is the only major innovation centre to see international hydrogen patent applications decline in the past decade. International patenting activity in hydrogen technologies remained modest in South Korea and China but is on the rise. In addition to these five main innovation centres, other countries generating significant volumes of hydrogen patents include the United Kingdom, Switzerland and Canada.

Hydrogen production technologies accounted for the largest number of hydrogen patents over the 2011–2020 period. While global hydrogen production is almost entirely fossil-based, the patenting data shows that low-emissions innovations generated more than twice the number of international patents across all segments of the hydrogen value chain than established technologies.

Technologies motivated by climate concerns accounted for nearly 80% of all patents related to hydrogen production in 2020. Growth was driven chiefly by a sharp increase in innovation in electrolysis.

Among hydrogen's many potential end-use applications, the automotive sector has long been the focus of innovation, and patenting in this sector continues to grow, led mainly by Japan. Despite concerted policy and media attention in recent years on hydrogen's potential to decarbonise long-distance transport, aviation, power generation and heating, similar momentum is not yet visible in other end-use applications.

The study finds that over half of the USD 10 billion of venture capital investment into hydrogen firms in 2011–2020 went to start-ups with patents, despite making up less than a third of the start-ups in the report's data set. Holding a patent is a good indicator of whether a start-up will keep attracting finance: more than 80% of late-stage investment in hydrogen start-ups in 2011–2020 went to companies that had already filed a patent application in areas such as electrolysis, fuel cells, or low-emissions methods for producing hydrogen from gas.

<https://www.iea.org/>

International IP SME Helpdesks

The new edition of the Intellectual Property ('IP') SME Helpdesks for China, South-East Asia, Latin America, and India was just launched by the European Commission.

The new edition, launched by the Directorate General Internal Market, Industry, Entrepreneurship and SMEs and the European Innovation Council and SMEs Executive Agency (EISMEA) of the European Commission, complements the European IP Helpdesk and the African IP Helpdesk.

The new edition of the Intellectual Property Helpdesks intends to provide free-of-charge assistance relating to intellectual property issues to SMEs doing business with or in the target markets based

in the EU and Single Market Programme (SMP) countries.

This service provides 'first-line' assistance, which does not extend, for instance, to drafting patent applications or contracts so as not to compete with existing law firms or other operators.

How to reach out to potentially interested SMEs?

The main targets of the new edition of the Helpdesk are SMEs doing business with or the target markets established in EU Member States and in SMP countries.

Relevant communication channels, therefore, include, amongst others:

- chambers of commerce and industry federations of these countries,
- Member States' embassies,
- the EU Delegations to the relevant countries,
- relevant European Commission websites and newsletters,
- Enterprise Europe Network

The India Helpdesk, launched only in November 2020, was able to reach comparable results to the existing China, South-East Asia, and Latin America Helpdesks.

<https://eisma.ec.europa.eu/>

ASIA-PACIFIC

New center of excellence on climate-smart agriculture

In efforts to enhance agricultural productivity, improve farmers' profits, and reduce greenhouse gas (GHG) emissions in the sector regionwide, the Asian Productivity Organization (APO) announced the designation of the National Agriculture and Food Research Organization (NARO) of Japan as its new Center of Excellence on Climate-smart Agriculture (COE on CSA). This results from the long-term partnership between the two institutions in disseminating know-how in the focus area of the new COE.

The APO COE Program showcases excellence in specific productivity fields to

promote the adoption of the know-how and best practices of one member by others while adapting them to suit local contexts. The COE on CSA will focus on deploying climate change mitigation and adaptation technologies, know-how, and frameworks for low-carbon rice, wheat, and soybean production as staple foods in the Asia-Pacific. Specific focus areas will be sharing technical knowledge and methods to reduce methane emissions from paddy fields, adoption of agricultural weather data systems for rice, wheat, and soybean production, web-based soil carbon sequestration visualization tools for GHG reductions in various crops such as rice, wheat and soybean, application of biochar and development of carbon credit methodologies, and water management practices in rice cultivation and treatment of livestock waste.

The COE on CSA will start its activities from April 2023, including a need and readiness assessment of APO members for implementing climate-change mitigation and adaptation technologies, two international conferences on CSA and other COE focus areas, and pilot projects to apply technologies developed by the COE on CSA starting from 2024 as well as seminars, study missions, workshops, and on-site training for customizing the know-how to meet local needs in APO members.

The COE on CSA may provide technical knowledge and skills such as technologies to reduce methane emissions from paddy fields, agricultural weather data systems for rice, wheat and soybean production, web-based soil carbon sequestration visualization tool for greenhouse gas reduction in various crops such as rice, wheat, and soybean.

<https://www.valdostadailytimes.com/>

BANGLADESH

Circular on intellectual property right protection

Against the backdrop of Intellectual Property Right (IPR) protection and enforcement in the garments industry to prevent

the manufacturing of counterfeit goods, the Bangladesh Garment Manufacturers and Exporters Association (BGMEA) has issued a circular to the BGMEA member factories for their awareness and stand against manufacturing counterfeit goods.

The circular, signed by BGMEA President Faruque Hassan, refers to the USTR's Special 301 Review on Intellectual Property Rights (IPR) Protection and Enforcement in Bangladesh in media reports.

The American Apparel and Footwear Association (AAFA) and the Paris-based Union des Fabricants (UNIFAB) submitted to the United States Trade Representative (USTR) to include Bangladesh, China, and the European Union in the priority watch list of USTR's Special 301 Review for alleged involvement in exporting counterfeit goods, including clothing.

In its submission, AAFA mentioned that "while being an important legitimate sourcing country for the industry, counterfeits from Bangladesh are being seized at an increasing rate globally as counterfeit production is growing." AAFA also said that "well-organised Bangladeshi-run counterfeiting networks effectively exported counterfeits for sales to consumers in the United Kingdom, the Philippines, Malaysia and other countries".

BGMEA will take up awareness and capacity-building programmes around this issue, including raising awareness, disseminating relevant knowledge and information, and so on.

"We should commit ourselves to say no to any business that involve violation of IPR. If we can do so, it will give us an extra edge as we are transitioning to a middle income country. On the other hand, we will be able to retain the trust and confidence of our valued customers which we have built over more than 40 years," the BGMEA president urged.

<https://www.tbsnews.net/>

CHINA

Spending on R&D

China spent a record 3.09 trillion yuan (\$443 billion) on research and development in

2022, a 10.4 percent year-on-year increase from the nation's accelerated efforts to enhance its innovation capability for more breakthroughs.

The National Bureau of Statistics said that China's R&D expenditures accounted for 2.55 percent of the GDP last year, which is 0.12 percentage points higher than the previous year.

That percentage of R&D spending is close to the average of 2.67 percent among OECD (Organization for Economic Cooperation and Development) economies. It moved China to 12th place globally, ahead of France's 2.35 percent and the Netherlands' 2.32 percent.

"Despite multiple unfavorable factors, China's R&D expenditure continued to soar and injected strong vitality into the nation's innovative development. Notably, the investment in basic research continued to grow rapidly," said Li Yin, the chief NBS statistician.

Last year, the country spent some 195.1 billion yuan on basic research, a year-on-year increase of 7.4 percent. "Accelerated efforts will be made this year to again beef up R&D expenditure, especially in some self-developed innovations, and meanwhile to improve the quality of the overall R&D, so as to offer stronger support for tech breakthroughs," Li said.

According to China's 14th Five-Year Plan (2021-25), the country will scale up spending on R&D by more than 7 percent annually during the period to drive more technological breakthroughs.

Consultancy McKinsey and Co said in a report that such a growth target would set the country on the path to becoming the world's largest spender on R&D.

In the first three quarters of last year, Contemporary Amperex Technology Co Ltd, China's largest electric vehicle battery maker, spent 10.58 billion yuan on R&D, representing a 130 percent increase.

It was also the first time that the battery maker spent 10 billion yuan on R&D - in 2021, it had spent 7.69 billion yuan.

"R&D investment will remain a priority for CATL. We will continue to invest heavily in

the R&D of power batteries for more innovations to help drive the electric vehicle sector," said Meng Xiangfeng, an assistant to the company's chairman.

<https://www.chinadaily.com.cn/>

Oil giants to invest over \$14bn in renewables by 2025

China's three state-owned energy majors plan to invest a combined 100 billion yuan (\$14.5 billion) or more in renewable energy through 2025, diversifying their business as Beijing pushes to achieve net-zero carbon dioxide emissions by 2060.

Sinopec, as the company is commonly known, is China's largest oil refiner, with over 30,000 gas stations nationwide. It plans to tap its existing infrastructure to set up more hydrogen stations for fuel cell vehicles.

The Chinese government wants at least 50,000 fuel-cell vehicles on the road by 2025, up from around 12,000 at the end of 2022. Sinopec plans to expand its network of hydrogen stations to 1,000 locations by the end of 2025 from 98 at the end of 2022, including through partnerships with automakers.

Sinopec has also begun constructing a 5.7 billion yuan green hydrogen facility in Inner Mongolia to fuel a nearby coal-processing plant. The project is seen reducing the coal plant's carbon dioxide emissions by around 1.4 million tonnes a year.

"With the rise of electric vehicles, we will convert petroleum refineries into facilities for producing chemicals," Ma said.

The investment rush comes as China aims to peak CO₂ emissions by 2030 and achieve net-zero emissions by 2060. Crude oil consumption in the country is expected to peak at nearly 800 million tonnes in 2030 before falling to around 200 million tonnes in 2060.

Meanwhile, wind and solar are expected to account for 28% of China's electricity production by 2030 and 81% by 2060, up from 13% in 2022, according to a state-backed research institution. China's oil giants are under pressure to reshape their businesses to continue growing.

China National Offshore Oil Co. (CNOOC) focuses on offshore wind, using its expertise to drill oil under the ocean floor. It finished building the Haiyou Guanlan deep-sea floating wind power platform last month. It is slated to start operations in June over 100 kilometers from the shore of Hainan province, where the water is deeper than 100 meters.

The project, which CNOOC Chairman Wang Dongjin called the first of its kind in China as well as the world, is expected to generate 22 million kilowatt-hours a year on average.

CNOOC plans to make around 100 billion yuan in investments annually through 2025. CEO Zhou Xinhuai said around 5% to 10% -- the equivalent of 15 billion yuan to 30 billion yuan over three years -- would go toward new energy sources.

PetroChina invested 7.6 billion yuan in 2022 in solar power and other renewable energy sources, including in the Xinjiang region. The company said it added six times as much capacity that year than its total capacity as of 2021.

The refiner also established a research hub for new energy sources in Shenzhen. It is expected to invest over 10 billion yuan a year in the field through 2025.

China's National Energy Administration issued an action plan to promote the integration of oil and gas with new energy sources. It said it would prioritise permits for new energy projects by the three state oil companies. Still, such efforts could face headwinds as China grapples with an electricity shortage and surging inflation.

<https://asia.nikkei.com/>

INDIA

Revised position in trademark filing

India is now at the fifth position in trademark filing and seventh in patents filed annually on a global level, Department of Promotion of Industry and Internal Trade Special Secretary Sumita Dawra said.

CSIR's former Director General Mashelkar highlighted the importance of recognising

the IPR-driven industry, which leads to growth in GDP. He mentioned that the European study suggests that the IPR-driven industry in Europe generated around 30 per cent of jobs during 2014-16 and contributed around 44.8 per cent to GDP.

Masanori Katsura, Deputy Commissioner, Japan Patent Office, mentioned that the 8th International Conference on IPR is an opportunity for the participants to strengthen the global partnerships further.

He also highlighted that India and Japan have deepened their cooperation in IP through Indian – Japan Patent Prosecution Highway (PPH). Further, he shared that the WIPO has been extending & implementing IP financing support to SMEs and working towards green technology and AI-related technologies with a focus on global IP partnerships addressing emerging issues.

<https://theprint.in/>

250GW of renewable capacity by 2028

The Indian government will issue tenders for the installation of 250GW of renewable energy capacity by March 2028, as part of plans to cut emissions.

According to a government memo, India's government will install 250GW of renewable energy capacity by March 2028.

The announcement comes as part of a wider plan to boost non-fossil fuel energy capacity, including solar and wind energy and nuclear and hydro power. The country plans to bring its generation to 500GW by 2030 to help cut its carbon emissions by 45% from 2005 levels.

However, India narrowly missed a target to install 175GW of renewable capacity by 2022, having instead installed 172.72GW, according to the Ministry of New and Renewable Energy's end-of-year review. As of 28 February, non-fossil capacity has exceeded 175GW.

India's government will issue tenders to install 15GW of renewable energy capacity in each of the first two quarters of this fiscal year, ending in March 2024. This will

be followed by bids for 10GW of capacity in the following two quarters, according to the memo.

Out of the planned 50GW of renewable tenders each year, 10GW will be allocated to the installation of wind turbines. Solar currently makes up over half of India's renewables capacity, with wind accounting for almost one-third.

India hopes to boost the share of non-fossil capacity to 50% in 2050 from 42.6%. Its rate of additional renewables remains second only to China among major nations in the Asia-Pacific.

Despite this, India currently stands as the world's third largest emitter of greenhouse gas emissions, after China and the US. It still depends heavily on coal to meet more than half of its energy demand. Its Ministry of Coal states that "coal will continue to occupy centre-stage of India's energy scenario", potentially for the "next century and beyond".

The government has previously cited lower per capita emissions compared with other richer nations as justification for its continued use of coal.

<https://www.power-technology.com/>

INDONESIA

New regulation in Indonesia on IP financing

The Government of Indonesia recently issued an implementing regulation for the Creative Economy Law that seeks to support business actors in the creative economy, including through IP financing.

Government Regulation No. 24 of 2022 regarding the Implementation of Law No. 24 of 2019 regarding the Creative Economy ("GR 24/2022") was promulgated on July 12, 2022, and is scheduled to come into force on July 12, 2023. With GR 24/2022, the government has moved to support those in the creative economy with their intellectual property ("IP")-related business.

One of the key points of the new regulation is IP financing. This article provides a

general overview of IP financing as regulated in GR 24/2022. It looks at some of the things business actors, and the government must do to attain or provide IP financing.

GR 24/2022 is not the first regulation in Indonesia to allow IP, or at least certain types of IP, to be used as collateral. Law No. 28 of 2014 regarding Copyright ("Copyright Law") and Law No. 13 of 2016 regarding Patents ("Patent Law") regulate that copyrights and patents can be encumbered with fiduciary securities. These two laws, however, merely stipulate that copyrights and patents can be subjected to fiduciary securities. Further provisions on the fiduciary securities over these IP rights were to be regulated in implementing regulations. However, no implementing regulation for the Copyright Law or the Patent Law was issued to address this topic, so in a way, GR 24/2022 can serve that purpose.

Article 1(1) of GR 24/2022 defines the creative economy as an embodiment of added value from IP originating from human creativity based on cultural heritage, science, and/or technology. And Article 1(2) of GR 24/2022 defines creative economy actors as individuals or groups of Indonesian citizens or business entities in the form of legal entities or non-legal entities established under the laws of the Republic of Indonesia.

Trade secrets do not require registration as protection is given perpetually to information in the technology or business fields for as long as the economic value of such information persists and the confidentiality of the same is maintained. However, the recordation of trade secrets is not necessitated by the DGIP, and only the licensing or assignment of trade secrets requires recordation.

In contrast, registration requirements apply to those IP rights that arise from registration, such as trademarks, patents, industrial designs, layout designs of integrated circuits, and plant variety protection. The DGIP will issue certificates of registration for each of the

rights if it deems the applied IP registrable according to each law and regulation for each type of IP. Further, Article 10 of GR 24/2022 elucidates that managed IP means that the owner or other party has commercialised such IP based on the agreement. Therefore, having lawful proof of ownership over such IP would not suffice for the creative economy actor to obtain IP financing. They would also have to commercialise such IP rights that they own.

Article 11 of GR 24/2022 further stipulates that the MOLHR shall provide financial institutions access to data on IP used as collateral. To date, the DGIP has provided a publicly accessible database of IP for trademarks, patents, industrial designs, and copyrights called *Pangkalan Data Kekayaan Intelektual*. However, the information incorporated in the database is limited. To accommodate the provisions of Article 11 of GR 24/2022, the DGIP will have to provide more comprehensive information, including information regarding the assignment and license of IP rights used as collateral, that can be accessed by financial institutions.

Aside from the recordation and registration of IP used as collateral, as applicable, creative economy actors should also record the IP-based financing granted by financial institutions in the creative economy financing system maintained by the Ministry of Tourism and Creative Economy ("MOTCE").

<https://www.mondaq.com/>

Metaverse collaboration initiative to boost metaverse industry

Indonesia has made a significant move towards becoming a major player in the global metaverse industry with the launch of its Indonesia Metaverse Collaboration Initiative on 1 March 2023, in conjunction with the Mobile World Congress 2023 in Barcelona.

This initiative is a national-level collaboration that is significant for both national interests and stakeholders involved, Telkom University said in a statement.

According to the statement, the metaverse has the potential to boost economic growth, advance education, foster innovation, and promote Indonesian national identity in the digital world.

It said CSPs could collaborate with the community as co-creators, while researchers and academics can take on roles in innovation. For policymakers, it said this could help guide policy strategies. For the private sector, it said the metaverse could enhance customer outreach and business development. And for users, it said it could help shape the direction of technology adoption and promote inclusive metaverse development.

According to the statement, the Metaverse Indonesia Collaborative Initiative will be carried out in the form of a program called the Metaverse Research and Experience Center (MREC), a public-private partnership that aims to promote collaboration, research, innovation and development in the field of metaverse technology.

It will be a multi-year program with four workstreams; Network Baselineing, Network Optimization and Innovation, Use Cases, and Ecosystem Support.

The statement said the Metaverse Research and Experience Centre (MREC) is expected to drive innovation and support the growth of the metaverse industry in Indonesia.

This aligns with the national vision of President Jokowi to promote the digital economy as a crucial pillar to help Indonesia reach the top 10 global economies by 2030.

Through this collaboration among industry leaders and the public sector, investment plans in Indonesia in the field of metaverse are expected to be facilitated, positioning the country as a leading hub for innovation in the digital economy.

The launch of the Indonesia Metaverse Collaboration Initiative also marks an important step in lifting Indonesia from being just a consumer to a producer in the metaverse industry and represents a significant milestone in the country's technological evolution.

This initiative is parallel with National vision from President Jokowi to promote the digital economy as a crucial pillar to help Indonesia reach the top ten global economies by 2030.

Franky O. Widjaja, Executive Chairman of Smartfren, said the first Indonesia metaverse with collaboration between the telco and small and medium-sized enterprises benefit from this metaverse. "This initiative is an important step forward in positioning Indonesia as a leading hub for innovation in the digital economy," he added.

Rizal Akbar, Vice President of Network, IT Strategy, Technology and Architecture of Telkom Indonesia, said the metaverse is a transformational technology with the potential to change the way people live, work and play.

"The Metaverse Research and Experience Center is an important step in realizing this potential and we are very keen to wait and join the all initiative of this Metaverse," he added.

<https://technode.global/>

JAPAN

Council to discuss trademarks, designs

Japan's government will soon consider how laws can be made to protect intellectual property rights in virtual spaces or the metaverse. The government of Japan set up a council where experts from the private sector, universities and other organisations can discuss IP issues. The metaverse is a virtual space on the internet that users can use to communicate and interact with others using alter egos. As it is expanding into gaming and business in general, the ambiguous handling of IP in this space has become important. Virtual spaces can feature the trade of goods that are branded or designed like in the real world. The question is how trademarks and design rights are applied in such a situation.

For trademarks, it is currently not clear if their power to protect a brand image can be exercised in a metaverse. So far, there have been cases where companies filed for their

trademark as a program existing in a virtual space to assert their rights even there.

For designs, issues exist, too, as the present law in Japan covers articles and architectural structures, which are tangible objects. While matters like a selection screen of a cell phone, which is less physical in nature, can be protected, not everything in a virtual space seems to be covered.

Yet there is a concern that expanding the scope of rights into the virtual space may put break creative activities by the users of a metaverse. The question is, then, to what extent there should be free reign for creative activities and to what extent protection should be expanded. The newspaper expects that a sub-committee will be set up under the council to discuss separate issues. Additionally, matters like portrait rights for avatars, problems with sexual harassment, as well as slander and libel are set to be discussed. More information can be found here. <https://www.nikkei.com/article/DGXZQOUA180FB0Y2A111C200000/>

<https://www.lexology.com/>

MALAYSIA

Pilot programme on intellectual property

To further its mission of fostering innovation and growth worldwide, the United States Patent and Trademark Office (USPTO) will commence a Patent Prosecution Highway (PPH) pilot program with the Intellectual Property Corporation of Malaysia (MyIPO).

Malaysia is one of the major economies in the Association of Southeast Asian Nations region, and this pilot program will facilitate patenting by U.S. interests in that country.

"The new PPH pilot program with the Intellectual Property Corporation of Malaysia is a further step in building a close and mutually beneficial partnership between the MyIPO and the USPTO," said Kathi Vidal, Under Secretary of Commerce for Intellectual Property and Director of the USPTO. "As we discussed in our trip to Malaysia at the end of the

summer, I have no doubt our deeper collaboration will lead to a stronger and more productive relationship that will benefit our respective inventors and innovators."

The PPH program is a work-sharing arrangement between two or more patent offices that enables an applicant who receives a positive ruling on patent claims from one participating office to request accelerated prosecution of corresponding claims in another participating office. Therefore, the PPH program allows the applicant to obtain an expedited patentability decision in the second office.

<https://www.uspto.gov/>

PHILIPPINES

Renewable energy opened to full foreign ownership

The Philippines has fully opened its renewable energy sector to foreign ownership, representing a significant shift to the country's energy policies.

With the change, foreign investors can now hold 100 percent equity in the exploration, development, and utilization of solar, wind, hydro, and ocean or tidal energy resources. The policy change comes as the Philippines seeks to attract foreign investment to boost its renewable energy sector and meet its long-term climate targets.

The DOE issued the policy on November 15, 2022, and it came into effect on December 8, 2022.

Foreign ownership is fully permitted

The circular amends the implementing rules and regulations of the *Renewable Energy Act* of 2008, formally called the *Republic Act No. 9512*, to allow full foreign ownership of renewable energy projects. The Renewable Energy Act is a piece of legislation providing a framework for developing, transmitting, and utilizing renewable energy in the Philippines.

Namely, the circular amends Section 19 of the implementing rules and regulations

by removing the requirement that the exploration, development, and utilization of solar, wind, hydro, and ocean or tidal energy sources can only be undertaken by Filipino citizens or entities that are at least 60 percent Filipino-owned. That requirement meant foreign investors could only own up to 40 percent equity in such projects.

With foreign investors now able to own 100 percent equity in these projects, those currently operating in a joint venture with a Filipino partner may also take a controlling stake in such ventures.

Incentivizing foreign investments in renewables

The Philippine government hopes that allowing foreign ownership of renewable energy projects will increase the speed of the Philippines' transition to renewable energy sources.

According to the Philippines' *National Renewable Energy Program (NREP) 2020-2040*, the country aims for renewables to comprise 35 percent of power generation by 2030 and 50 percent by 2040. The government also seeks to lower the costs of renewable energy projects and make renewables more accessible to the public.

Despite these goals, the Philippines' transition to renewable energy sources is seeing a downward trend. In 2008, renewable energy made up 34 percent of power generation, but in 2021 it made up just 21 percent.

To encourage the development and use of renewable energy, the Philippine government has released an array of incentives and supportive policies.

Further, the government recently released new incentives for renewable energy companies and other green businesses in its 2022 Strategic Investment Priority Plan. These include corporate income tax holidays, enhanced deductions, and preferential tax rates for industries such as electric vehicle (EV) assembly, manufacture of EV parts, renewable energy, energy storage, recycling, and other green economy industries.

Accordingly, foreign investors entering the Philippines' newly open market for renewable energy can enjoy a variety of incentives. Together, these factors add momentum to the Philippines' renewable energy transition and pursuit of its climate goals.

The Philippines' untapped renewable energy potential

The Philippines has an estimated 246,000 megawatts (MW) of untapped renewable energy. It has the world's third-largest geothermal capacity at 1,900 MW, with Indonesia in second and the US on top.

The country's current mix of renewable energy consists of 4.3 gigawatts (GW) of hydropower, 896 MW from solar energy, and 427 MW of wind. The Philippines adopted an ambitious plan to increase the share of renewable energy in the power generation mix to 35 percent by 2030 and 50 percent by 2040.

This involves increasing geothermal capacity by 75 percent, expanding hydropower capacity by 160 percent, increasing wind power capacity to 2,345 MW, and adding an additional 277 MW of biomass power. The Department of Energy estimates the country needs US\$120 billion by 2040, presenting ample opportunities for foreign investors.

<https://www.aseanbriefing.com/>

REPUBLIC OF KOREA

Investment of 160 tln won in key tech sectors by 2027

The Republic of Korea will funnel 160 trillion won (US\$122 billion) into research and development to foster research capabilities in the three key technology sectors of semiconductors, displays and next-generation batteries by 2027, the science ministry said.

Under the road map submitted to a government meeting, the funding jointly created by the government and private sector will be used to help local companies and research centers secure cutting-edge technologies and create new markets in

the three tech sectors, according to the Ministry of Science and ICT.

A total of 100 specified technologies, including semiconductor devices, free-form displays and hydrogen fuel cells, will be given priority for government funding.

As a first step, the government will set up a private-public consultative body later this year to map out plans to launch government-funded R&D projects and share their results with the industry.

The government's R&D scheme also includes programs to encourage well-educated students and experts to get jobs in related industries on time and to create social infrastructure for effective R&D.

"Semiconductors, displays and next-generation batteries are the sectors that have supported the Republic of Korean economy on the back of competitiveness of our private sector," Science Minister Lee Jong-ho said in a statement. "The government will join hands with the private sector to expand R&D investment to lead the world in the key technology sectors."

The Republic of Korea has been strengthening financial and administrative support for the country's key economic-driving sectors, like semiconductors, to regain growth momentum for Asia's fourth-largest economy.

<https://en.yna.co.kr/>

Semiconductor investment tax credit could be increased

The government announced that the tax credit on semiconductor investments might be increased from 8 percent to 15 percent for big companies.

For small and medium-sized enterprises (SMEs), the maximum tax credit could be raised to 25 percent from 16 percent.

If the National Assembly approves the increases, tax collections will likely fall by 3.6 trillion won (\$2.8 billion) in 2024 and around 1.3 trillion won in 2025 and 2026.

"Semiconductors are a central industry in our economy as they accounted for

18.9 percent of exports in 2022 and 17.7 percent of facility investment," said Finance Minister Choo Kyung-ho Tuesday. "It is a strategic asset that is directly connected with our future competitiveness, national security and very existence."

Under the plan, an additional 10 percent tax credit will be granted for on-year increases in investment from this year.

"If so, companies will be able to get a maximum tax credit of 25 percent including the on-year increased investment and 35 percent maximum, for SMEs," Choo said.

If the 30 to 50 percent tax credit on R&D spending is included, the tax credit will be the highest globally, the finance minister stressed.

The proposal for more aggressive tax benefits comes less than a month after the National Assembly voted to raise tax credits by 2 percentage points from the previous 6 percent.

According to the presidential office, President Yoon Suk Yeol ordered the Finance Ministry to develop a more aggressive plan while expressing his disappointment in what he considers weak support for the Republic of Korea's semiconductor industry.

"National strategic technologies like semiconductors are our national security asset as well as our industry's core technology," Yoon said on Dec. 30. "We need to come up with a rational but aggressive policy."

While the two largest political parties wanted more aggressive tax credits for semiconductor investments — the People Power Party proposing 20 percent and the Democratic Party 10 percent — the finance minister wanted to limit the tax benefit to 8 percent as he worried about shrinking tax collections, according to local press reports.

The Finance Ministry estimates that if the 20 percent tax incentive is implemented, 2.7 trillion won less in taxes will be generated.

There have been particular concerns about Korea's relatively weak policy support compared to other leading competitors, such as the U.S. and Taiwan province of China

The United States, under its Chips Act, provides a 25 percent investment tax credit for spending on semiconductor production lines and related equipment.

The Taiwan province of China government approved a bill in November that offers a 25 percent tax credit on semiconductor R&D.

China plans to invest 187 trillion won by 2025 in its own semiconductor development.

<https://koreajoongangdaily.joins.com/>

\$185 million for renewables rebates in 2023

The Republic of Korea's Ministry of Trade, Industry and Energy (MOTIE) has allocated KRW 244.7 billion (\$185.5 million) for its rebate scheme for rooftop PV systems and other small renewable energy systems. The ministry started to accept applications from homeowners and businesses.

The MOTIE said its rebates for BIPV systems have been raised from 13.4% to 15%. However, it has reduced its rebates for conventional rooftop PV systems from 50% to 47%.

About KRW 48.9 billion of the total budget will be earmarked for detached and multi-unit houses, while KRW 61.1 billion will be assigned to commercial buildings. Another KRW 140.0 billion will be allocated for projects that combine two different renewable energy technologies.

News Directory3, a Republic of Korean news outlet, has reported that the MOTIE allocated a total budget of KRW 319.2 billion for the program in 2022. The Republic of Korea plans to install 30.8 GW of solar by 2030. According to the latest figures from the International Renewable Energy Agency (IRENA), it reached 20.9 GW of cumulative installed PV capacity at the end of 2022.

<https://www.pv-magazine.com/>

THAILAND

New agreement to boost procurement from women-led SMEs

A new agreement between UN Women and Thailand's Office of SMEs Promotion (OSMEP) aims to make public and private procurement more gender-responsive, particularly regarding women-led small and medium-sized enterprises (SMEs).

The memorandum of understanding (MoU) was signed on 27 March by OSMEP Director General Veerapong Malai and Sarah Knibbs, regional director a.i. of the UN Women Regional Office for Asia and the Pacific.

"Gender equality and women's economic empowerment are highly valued by the OSMEP," Veerapong said. "We are pleased to collaborate with UN Women under this MoU."

SMEs are an essential component of Thailand's economy. As the country strives to keep pace with its ASEAN counterparts and global markets, empowering SMEs and closing gender gaps in the business sector, have become critical imperatives.

Under this new agreement, which arrived in the month of International Women's Day (8 March), OSMEP has joined forces with UN Women to spearhead research initiatives, improve SMEs databases, and foster connections between SMEs and buyers from both public and private sectors.

"Today's agreement is a milestone towards promoting fair trade, stimulating economic growth and fostering innovation," said Knibbs. "This will not only narrow the economic gap but also paves the way for more effective measures to end gender inequality."

The cooperation framework consists of three distinct goals. The framework includes joint research studies or policy reviews aimed to support supplier diversity and more gender-responsive procurement. Secondly, efforts will be made to enhance the database and clearly define "women-owned business" in

Thailand, categorized by business type. This systematic data collection and analysis will support future economic policies. Finally, the framework aspires to create market opportunities by connecting buyers from the private and public sectors with women entrepreneurs and gender-responsive enterprises.

This collaboration is under the umbrella of UN Women's WE RISE Together programme, which seeks to empower under-represented groups of entrepreneurs, particularly women in SMEs, and create equal market opportunities by advancing supplier diversity through gender-responsive procurement in Thailand and Viet Nam. As only 1 per cent of total procurement spending goes to women-owned businesses, fair policies and guidelines for public and private procurement are more crucial than ever for economic growth and gender equity.

<https://asiapacific.unwomen.org/>

New power plan will support renewables

Energy authorities expect to launch a new national power development plan (PDP) to promote and support greater use of renewable energy. The new PDP is meant to span 2023 to 2037, replacing the current one that took effect in 2018 and went through many revisions to align with changes in energy policy. Efforts to introduce the new PDP were earlier delayed by the Covid-19 pandemic, a surge in global energy prices and Thailand's new commitment to cutting carbon dioxide emissions.

The government announced in 2021 Thailand would take more serious action to achieve carbon neutrality, a balance between carbon dioxide emissions and absorption, by 2050.

The policy means the country needs to re-design its energy management to be less dependent on fossil fuels.

Drafting of the 2023 PDP is nearly finished and should be concluded around the middle of this year, said Veerapat Kiatfuengfoo,

deputy director-general of the Energy Policy and Planning Office (Eppo).

A public hearing on the new PDP must be scheduled, with the plan approved by the National Energy Policy Council and the cabinet.

Under the new plan, the loss of load expectation (LOLE) method will be used to manage power supply to allay concerns over surplus power generation capacity in reserve, which is blamed for driving up power bills. The current power generation capacity in reserve is at 30% of the total capacity.

LOLE will estimate how many hours of electricity supply cannot meet actual demand in a year.

This method corresponds with Thailand's shift towards more use of renewable sources, such as clean energy, but raises concerns over intermittent electricity output.

LOLE for Thailand should be 0.7 days a year, said Wattanapong Kurovat, director-general of Eppo. In other words, load loss or generation deficiency should not exceed 17 hours in one year. He said that LOLE is suitable for higher use of renewable resources such as solar and wind to generate electricity as their power supply is monitored every hour. Thailand aims to have renewable energy makeup 50% of total fuels used for electricity generation by 2036. In 2021, the proportion of renewable energy tallied 11%. The new PDP will also pave the way for the development of alternative energy such as nuclear energy, said Mr Veerapat.

<https://www.bangkokpost.com/>

VIET NAM

Renewables deployment with US\$15.5 billion deal

The G7 initiative Just Energy Transition Partnership (JETP) has agreed to support Vietnam's green energy transition and mobilise an initial US\$15.5 billion of public and private finance over the next three to five years.

The partnership will work towards a series of targets, including accelerating renewable energy so that it reaches 47% of Vietnam's electricity generation by 2030, instead of 36% currently planned, as well as reducing the peak coal capacity from the 37GW planned towards 30.2GW.

Over the next 12 months, partner countries will work with Viet Nam to develop and adopt a JETP Resource Mobilisation Plan that will enable the implementation of the funding.

This mechanism could potentially help the country resolve issues it has had with solar power in recent years after a boom between 2018-2020 that was abruptly stopped, partly due to its grid capacity issues.

The financing includes US\$7.75 billion of public pledges from the International Partners Group together with the Asian Development Bank and the International Finance Corporation. In contrast, private sector financing will be coordinated by the world's largest coalition of financial institutions, the Glasgow Financial Alliance for Net Zero (GFANZ).

GFANZ has established a working group with several financing entities – including Bank of America, Citi and HSBC, among others – to identify barriers to sourcing private investments and advocating for the necessary reforms to solve these barriers.

This is the third of such pledges from the JETP. South Africa received US\$8.5 billion of support in 2021 at the COP26 in Glasgow and Indonesia secured a US\$20 billion deal, announced during COP27 in Egypt to support its coal phase-out.

Ursula von der Leyen, president of the European Commission, said: "With investments from international partners, Vietnam can boost renewable energies and enhance its energy security and autonomy. We will help Vietnam to start reducing its greenhouse gas emissions five years earlier than planned, and dramatically reduce its coal power use."

Moreover, during an EU-ASEAN summit, the EU announced the mobilisation of €10 billion (US\$10.6 billion) to accelerate

infrastructure investments in Southeast Asia, with a focus on green transition and sustainable connectivity.

Within that package, two initiatives were launched – the Sustainable Connectivity Initiative and the Green Team Europe Initiative – with the first one aimed at

supporting the Association of Southeast Asian Nations' (ASEAN) electric grid interconnections to improve access to renewable energy and the investment in digitalisation, which includes connectivity via submarine cables for which it will have a funding of €1 billion.

“The Indo-Pacific region is becoming the new global centre of gravity. The Indo-Pacific generates 40% of global GDP and represents 60% of the world’s population,” said Josep Borrell, vice-president of the European Commission.

<https://www.pv-tech.org/>