

**The FORTNIGHTLY**

A Review of Middle East Regional Economic & Cultural News & Developments

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*While reading the Fortnightly, should you see any items about which you would like to learn more, please don't hesitate to contact us directly. We will do whatever we can to assist you.*

*Best, Seth* *seth@atid-edi.com*

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ISRAEL GOVERNMENT ACTIONS & STATEMENTS

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* 1. Ten New Israel-U.S. Projects Receive $9.6 Million from the BIRD Foundation

The Board of Governors of the [Israel-U.S. Binational Industrial Research and Development (BIRD) Foundation](https://www.birdf.com/) approved last month $9.6 million in funding for 10 new projects between U.S. and Israeli companies. The projects will also access private-sector funding, boosting the total investment in projects to $24.5 million.

The 10 projects approved by the Board of Governors are the latest bunch in more than 1,000 projects that the Foundation has approved for funding across its 46-year history. To date, BIRD’s total investment in joint projects is more than $390 million and has helped generate direct and indirect sales of more than $10 billion. The latest projects are as follows:

* Celleste Bio (Misgav, Israel) and Mondelez International (Chicago, IL) - to develop and produce on-demand non-fat cocoa solids and cocoa-based powder.
* CENS Materials (Beer Sheva, Israel) and LiCAP Technologies (Sacramento, CA) - to develop a dry electrode process with carbon nanotube technology dispersion to advance EV battery capacity.
* Diptera.ai (Jerusalem, Israel) and Vectech, Inc. (Baltimore, MD) - to utilize AI to build a process and system to monitor and control the Anopheles Stephensi mosquito.
* Greatnix, dba Opmed.AI (Herzliya, Israel), and Mayo Clinic (Rochester, MILLION) - to advance the development of an AI-driven Planner that optimizes procedure scheduling.
* Hypervision (Yokneam Illit, Israel) and Light Polymers (Santa Clara, CA) - to develop a liquid crystal-based polarized coating technology, methods & systems tailored for VR and Mixed Reality optics.
* Imagindairy (Haifa, Israel) and Ginkgo Bioworks (Boston, MA) - to develop and manufacture non-whey dairy proteins at scale.
* Israel Aerospace Industries (Lod, Israel) and MELD Printworks (Christiansburg, VA) - to develop and approve large civil aviation components utilizing Additive Friction Stir Deposition technology.
* LahakX (Ramat Hasharon, Israel) and Aero Systems West (San Martin, CA) - to develop a heavy payload spraying drone swarm for agriculture and fire prevention.
* Sheba Medical Center (Ramat Gan, Israel) and Serpin Pharma (Manassas, VA) - to perform a Phase II clinical trial to provide a targeted therapeutic to restore immune balance for patients with acute myocardial infarction.
* Tissue Dynamics (Rehovot, Israel) and ATCC (Manassas, VA) - to develop an advanced organoid kit for cardiac toxicity assessment.

The BIRD Foundation facilitates cooperation between American and Israeli companies across a variety of technology sectors. It provides funding of up to 50% of a project's budget, beginning with R&D and ending with the initial stages of sales and marketing. The Foundation shares the risk and does not require repayment if the project fails to reach the sales stage. (BIRD 28.01)

ISRAEL MARKET & BUSINESS NEWS

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* 1. IAI Announces Launch of U.S. Innovation Center and Debut Program IAI CATALYST

Israel Aerospace Industries (IAI) announced the launch of its first innovation center in the U.S. and the debut program within it – [IAI CATALYST](https://catalyst.iainorthamerica.com). The innovation center is a groundbreaking initiative of the company alongside the decision to expand its business activities and presence in the U.S. IAI’s new innovation center and the IAI CATALYST program will foster cooperation between IAI and American startup companies while providing them the opportunity to develop technologies alongside our world-renowned experts and partners.

Operated by Starburst Aerospace, IAI CATALYST is a unique 5-month business accelerator program, tailored to support emerging startups on their journey to success. The program will focus on several key sectors critical to the future of aerospace innovation including Trusted AI & Autonomy, Quantum Science, Sustainability and Energy Technology, and Space Technology. Selected companies will receive technical and business support and mentorship in addition to financial incentives to accelerate market entry and growth.

IAI already operates a highly successful innovation center in Tel-Aviv, Israel, in which the company is developing new and advanced technological capabilities that integrated into existing and future projects. The center encourages a range of technologies in conjunction with open innovation and organic creativity while supporting intra-organizational innovation and cooperation with the entire Israeli ecosystem, including academia, startup companies, and the IAI's engineers. IAI invests in companies that demonstrate cutting edge advancements in sectors such as space and satellites, sustainability and renewable energy, biotech, autonomous systems, and artificial intelligence. (IAI 23.01)

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* 1. Cardumen Capital Raises $120 Million for Early-Stage Deep Tech Fund

Israeli-European venture capital firm [Cardumen Capital](https://www.cardumencapital.com/) has raised $120 million for its second deep tech fund to invest in early-stage Israeli startups. Portions of the fund were raised following the outbreak of the Hamas assault on Israel on 7 October. Cardumen will invest in pre-Seed and Seed stage companies in fields such as AI, cybersecurity, big data, and information technologies. To date it has invested in 32 Israeli companies and the new funding brings its assets under management to $225 million.

Cardumen, which has offices in Tel Aviv and Madrid, was founded in 2018. The fund has invested so far in companies including SaaS cybersecurity platform DoControl (backed by Insight Partners and Crowdstrike), Big Data B2G platform IVIX (backed by Insight Partners and Citi Ventures) and NeuReality (backed by Samsung and SK Hynix). (Cardumen Capital 17.01)

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* 1. Xyte Raises $20 Million in a Series A Round

Tel Aviv's [Xyte](https://www.xyte.io/), which has developed a servitization platform for device and hardware manufacturers, announced a $30 million investment round, which includes $20 million in Series A funding led by Intel Capital, with participation from Samsung Next and existing investors S Capital and Mindset Ventures, as well as $10 million in venture lending from funds and accounts managed by BlackRock. In conjunction with the financing, Roi Bar-Kat, Israel Country Manager and Managing Director at Intel Capital, will join Xyte’s board of directors. Including loans, Xyte has raised $37 million to date.

Xyte’s Device Cloud (XDC) platform was built for device and hardware manufacturers. It enables OEMs across different industries to service, support and commercialize their connected devices in one place, transforming them into integrated business solutions that combine hardware, software and services. With XDC, device and hardware manufacturers can manage the complete lifecycle of their connected devices – from the minute they leave the warehouse to the moment they reach customers and through aftermarket sales.

Manufacturers across numerous verticals work with Xyte to support their own connected devices, from industrial and smart buildings to robotics, medical and automotive. This includes market-leading companies like Schneider Electric and Legrand. (Xyte 16.01)

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* 1. Snyk Acquires Runtime Data Pioneer Helios

Tel Aviv's [Snyk](https://snyk.io/) announced the acquisition of Israel's [Helios](https://gethelios.dev/), an industry pioneer capturing application runtime data, to further enhance Snyk’s cloud-to-code risk visibility. The acquisition marks a milestone in Snyk’s Application Security Posture Management (ASPM) journey, accelerating the evolution of Snyk AppRisk and allowing enterprise security teams to more effectively manage their global application security programs at scale. Snyk will now combine Helios’ full-stack runtime data collection and insights with the power of the Snyk Developer Security Platform to provide customers with a truly comprehensive picture of their applications, spanning the entire software development lifecycle.

The current market landscape leaves mature security teams wanting as traditional AppSec vendors are unable to correlate build-time security scans with live runtime security signals, while runtime forensics vendors lack crucial developer understanding. Snyk customers can now leverage security context from all phases of development – from when code is built, to when it is compiled, to when it is deployed – facilitating true DevSecOps collaboration.

With Helios’ functionality, Snyk can now additionally bring greater benefit to their strategic partners by leveraging these runtime insights for complementary value. In both the near- and long-term, Snyk looks forward to creating even more advantages and opportunities within its partner ecosystem for mutual customers looking to benefit from enhanced runtime data, visibility and analysis. (Snyk 16.01)

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* 1. Silverfort Raises $116 Million to Deliver a Unified Layer of Identity Security

Silverfort raised $116 million in series D funding, bringing the total amount raised to $222 million. Brighton Park Capital (BPC) led the round, with participation from existing investors including Acrew Capital, Greenfield Partners, Citi Ventures, General Motors Ventures, Maor Investments, Vintage Investment Partners and Singtel Innov8.

The investment follows another record year of more than 100% growth where Silverfort added tens of millions in new Annual Recurring Revenue (ARR), and hundreds of new enterprise customers, including the largest global financial services, manufacturing and retail companies. Ranked as the #1 Best Startup Company to Work For in Israel for the second consecutive year, Silverfort intends to grow its global team, already located across more than 15 countries, and will use the additional funds to expand its platform with new innovative product modules and accelerate its go-to-market strategy with an emphasis on channel partnerships.

Tel Aviv's [Silverfort](http://www.silverfort.com) pioneered the first and only platform that enables modern identity security everywhere. By connecting to the silos of the enterprise identity infrastructure, Silverfort unifies identity security across all on-prem and the cloud environments. With its unique architecture and vendor agnostic approach, Silverfort takes away the complexity of securing every identity, and extends protection to resources that cannot be protected by any other solution, such as legacy systems, command-line interfaces, service accounts (non-human identities), IT/OT infrastructure, amongst others. (Silverfort 23.01)

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* 1. Bluewhite Raises $39 Million Series C for Robots-as-Service

Tel Aviv's [Bluewhite](https://www.bluewhite.co/) has raised $39 million in funding to advance its robots that can be retrofitted to any tractor to operate it autonomously, which in turn are sold not as one-off products but as part of a bigger service play — Robots-as-a-Service. The startup plans to use the funding to continue investing into R&D — specifically to bring more data features into its service stack (branded Compass) but also to continue enhancing its autonomous hardware technology (branded Pathfinder), which can be programmed to work across a wide range of field types and vehicles (Bluewhite builds and operates the whole stack).

The tech used today includes not just AI and computer vision on the hardware, but AI-based algorithms to better understand what is being “seen” in the field that work alongside big data analytics to provide customers with dashboards and insights to better understand what is going on among their crops.

Bluewhite will also be using the funding to continue expanding in its current markets, and to break ground in new ones. Bluewhite’s tractor robots have been seeing its strongest traction so far in the U.S., with an emphasis on California and Washington, where its customers range from small family farms to 20 of the biggest “permanent” (year-round) crop growers in the country. Cumulatively, its robots have covered 50,000 hours of autonomous farming activity across 150,000 acres. (Bluewhite 23.01)

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* 1. Prompt Security Emerges with $5 Million in Seed for Generative AI Security

Prompt Security launched from stealth and announced $5 million in seed funding. The round was led by Hetz Ventures with participation from Four Rivers and angels including CISOs at Elastic and Dolby.

Prompt Security enables enterprises to benefit from the adoption of generative AI while protecting from the full range of risks to their applications, employees and customers. At every touchpoint of generative AI in an organization — from AI tools used by employees to AI integrations in customer-facing products — Prompt Security inspects each prompt and model response to prevent the exposure of sensitive data, block harmful content, and secure against a range of gen AI-specific attacks. The solution also provides leadership of enterprises with complete visibility and governance over the AI tools used within their organization.

Founded in August 2023, Tel Aviv's [Prompt Security](https://www.prompt.security/) delivers a complete solution for all generative AI security in the enterprise. Its robust platform supports millions of prompts and thousands of users per month. The Prompt Security team has created proprietary LLMs and developed novel patent-pending techniques for detecting generative AI threats and addressing the associated risks. (Prompt Security 24.01)

REGIONAL PRIVATE SECTOR NEWS

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* 1. Crysp Farms Closes $2.25 Million Pre-Series A Round

Dubai-based vertical farming startup Crysp Farms has secured $2.25 million in a pre-series A funding round. The seed round was led by strategic and financial advisory firm GateCapital, as well as unnamed strategic investors from the UAE and Saudi Arabia.

The seed round will help Crysp Farms expand its presence regionally across Saudi Arabia, Seychelles and the Maldives, as well as facilitate the establishment of new farms in the UAE within hotels and resorts managed by Hilton Worldwide, Jumeirah Group and Marriott International. A special focus on Saudi: Crysp Farms is currently prioritizing the establishment of its farms within the hospitality and healthcare sectors across different cities in Saudi Arabia, along with providing support for undisclosed “development projects.”

Founded in 2019, [Crysp Farms](https://www.cryspfarms.com/) builds and operates vertical hydroponic farms for hotels, hospitals, restaurants, and supermarkets, providing 130 crop varieties for fresh local produce. The startup currently operates in 20 locations across the UAE, with farms at the Ritz Carlton JBR, Carrefour Me’aisem and Mandarin Oriental. (Crysp Farms 23.01)

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* 1. HummingbirdEV to Open Factory for its Zero-Emission Commercial Vehicles in UAE

HummingbirdEV, a global provider of advanced commercial vehicle electrification systems, will establish a new advanced microfactory facility in the UAE. The facility will produce HummingbirdEV’s zero-emission commercial vehicles to accelerate adoption of sustainable transportation in the Middle East and North Africa (MENA), Southeast Asia and India.

HummingbirdEV’s presence in the UAE will enable the company to deliver zero-emission commercial vehicles for an existing e-commerce customer and leverage the country’s free trade agreements with Southeast Asia, India and surrounding MENA markets for further expansion of its customer base. The company will initially focus on catering to the region’s growing demand for mid-mile and last-mile vehicle applications, including refrigerated trucks. This news follows the approval of HummingbirdEV UAE, as a registered company in the UAE and the hiring of a local operations team.

Headquartered in Livermore, California, [HummingbirdEV](https://hummingev.com) is disrupting the commercial vehicle sector to capitalize on the global shift towards zero-emission transportation. Its patented technologies are meticulously crafted to elevate performance expectations for zero-emission commercial vehicles across diverse regions and industries, while ensuring a lower total cost of ownership. Its commitment to microfactories underscores how it’s substantially reducing the time to market and making vehicle production profitable and environmentally sound. (HummingbirdEV 22.01)

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* 1. IBM Inaugurates Riyadh HQ as Saudi Arabia’s Relocation Directive Moves Ahead

IBM is one of the recent organizations to inaugurate its regional headquarters in Riyadh following the implementation of Saudi Arabia’s directive to attract more companies to the Kingdom. A range of firms, including Northern Trust, Bechtel, and Pepsico from the US, as well as IHG Hotels and Resorts, PwC, and Deloitte from the UK have moved their Middle East bases to the Saudi capital to capitalize on the growing economy. The Kingdom had previously announced that it would not award any deals to any foreign company with a Middle Eastern base outside Saudi Arabia starting from 1 January 2024.

The firm’s base in Riyadh will serve as a hub for the company’s efforts to enhance Saudi Arabia’s tech landscape, as the company has been actively involved in collaborating with the government and various businesses in the Kingdom. The Kingdom has outperformed its target for attracting regional HQs, with over 180 companies established in the area as of November 2023, surpassing the initial goal of 160 by the end of 2023. The Saudi Ministry of Investment hosted IBM executives on Nov. 30, 2023, and presented the company with the regional HQ license. (AN 22.01)

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* 1. Intella Collaborates with Deepgram to Introduce Inclusive Language Product

Egypt's [Intella](https://www.intellaworld.com/), the leading Arabic speech intelligence provider, partners with San Francisco's Deepgram, an AI speech platform for transcription and NLU, with one goal in mind: building the most inclusive AI-powered speech-to-text model on the market.

Founded in 2021, intella is a leading deep-tech company in the MENA region offering the most accurate Arabic speech-to-text AI model that encompasses 25 different Arabic dialects and sub-dialects providing their clients with the most reliable Arabic speech intelligence on the market. Deepgram uses AI to transcribe more than 30 languages with a high level of accuracy including English, Hindu, French, Spanish, German, Russian and more.

Intella positions itself on the most accurate AI transcription model for Arabic on the market covering 25+ dialects and sub-dialects providing an average accuracy of 95.7%. Having over 400 million speakers all over the world in more than 25 countries, Arabic is considered one of the hardest languages to transcribe due to its variable nature, rich language, and diverse dialects which each come with a different, rich history and culture.

Through the partnership, both companies will be penetrating the market with a new offering: the best-in-class model for 30+ languages including Arabic and its 25+ diverse dialects allowing both parties to build the most inclusive AI-powered speech-to-text model on the market enhancing reachability and accessibility for users all around the world. (WAYA 16.01)

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* 1. Arrow Expands Center of Excellence in Egypt for Next-gen Automotive Capabilities

Centennial, Colorado's Arrow Electronics, a global provider of technology solutions, and its engineering services company, eInfochips, have announced the expansion of its Automotive Centre of Excellence (CoE) in Egypt to assist customers in the development of next-gen automotive products. Arrow’s Automotive CoE addresses the opportunities and helps resolve the challenges associated with connected, autonomous and electrification technologies in the automotive industry. The complexities associated with adopting such emerging technologies, including lack of in-house engineering talent with new age skills, stringent cybersecurity compliances and intricate high-voltage designs, pose challenges for innovators.

With this in mind, Arrow’s recent acquisition of Avelabs, a leading engineering services provider for the automotive industry, further expands this CoE’s capabilities. Headquartered in Cairo, Egypt, with offices in Munich, Germany and Troy, Mich., U.S.A., Avelabs helps automotive OEMs and Tier-1 companies accelerate product development, with its deep expertise in AUTOSAR (Automotive Open Systems Architecture), functional safety and cyber security. With the enhanced capabilities, Arrow’s CoE aims to enable innovators to navigate the complexities of automotive electronics design. (Arrow Electronics 29.01)

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* 1. Egypt's Zeal Raises $4 Million

Egypt's [Zeal](https://zealpay.app/) announced a successful $4 million funding round led by Raed Ventures and Cur8 Capital, along with strategic angel investors. This capital injection is aimed at expanding Zeal's innovative technology solutions across the EMEA region, following its recent expansion into the UK market.

Central to Zeal's product offering is the SmartPOS Plugin, redefining the very essence of in-store customer engagement and payment intelligence. Their revolutionary technology enables credit card machines to identify, segment, and retarget in-store customers, transforming the way physical retailers engage with and retain their clientele.

The fintech startup has already made significant progress in the payments industry by partnering with leading entities like Ingenico and Network International and earning awards such as the Visa Everywhere Initiative. This funding will further Zeal's reach and impact, enhancing their existing payment acquirers portfolio and ease of integrating with POS terminals globally. The management team also shared their plans to build advanced data and analytics solutions for FMCGs and Telecom sectors. (Zeal 18.01)

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* 1. Roboost Raises $3 Million from Regional VCs

Cairo's AI-powered logistics startup [Roboost](https://roboost.app/) has raised $3 million in an investment round led by Jordan-based VC Silicon Badia with participation from regional VC firm Flat6Labs, Saudi firm RZM Investment and Saudi angel investors.

The firm leverages AI to automate delivery management for businesses — including order dispatching and fleet management — in order to achieve faster delivery rates. It currently operates in Egypt, Saudi Arabia, Kuwait, Morocco and Tunisia, with clients like Cinnabon, McDonald’s, Koshari Abou Tarek and El Ezaby Pharmacy.

Roboost will use the money to scale up its business in MENA’s entire delivery market, while also expanding its e-commerce and middle-mile offerings with more tailored automated solutions. (Roboost 30.01).

CLEAN TECH & ENVIRONMENTAL DEVELOPMENTS

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* 1. Abu Dhabi ADNOC to Increase Investments in Decarbonization Efforts to $23 Billion

The board of directors of Abu Dhabi National Oil Company (ADNOC) has increased the state-owned energy major's budget allocation for decarbonization projects and low-carbon solutions to $23 billion. The chairman of the board, UAE's President Sheikh Mohamed bin Zayed Al Nahyan, directed the company to grow its diversified portfolio to support the delivery of a just, orderly and equitable global energy transition.

The ADNOC board endorsed the company’s goal to drive $48.5 billion back into the UAE economy over the next five years, building on $11.2 billion generated through its In-Country Value (ICV) program in 2023. ADNOC also created 6,500 jobs for UAE nationals in the private sector in 2023 through the program. These moves bring the total value driven back into the UAE economy to $51 billion, with 11,500 UAE nationals employed in the private sector since the program was launched in 2018. (Zawya 22.01)

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* 1. Egypt is Reportedly Planning a New 2.5 GW Renewables Project

Egypt is exploring the possibility of launching a 2.5 GW renewable energy park in Aswan and Sohag governments with investments worth $2.5 billion. Egypt has held talks with Saudi, Emirati, Chinese, Norwegian, French and German companies to discuss the development and implementation of the project. The renewables farm will have a structure similar to the 1.8 GW Benban solar project near Aswan — the largest project of its kind in Africa. It is not clear whether a tender will be launched soon to select the project developer.

The initial land sites nominated for the project are a 10,000 sq. km plot in West Sohag, and a plot in West Aswan, both owned by the New and Renewable Energy Authority. The ministry is currently in the process of conducting technical, legal, commercial, and financial studies for the project, including evaluating wind speeds and sunlight hours to determine site with the highest productivity for the project, as well as setting a suitable tariff and off-take guarantee with the government.

This may be the project pending funding from EBRD: Earlier, the European Bank for Reconstruction and Development completed the review for a potential $75 million equity investment into Egypt’s renewables sector, which included a 2.5 GW wind project near Sohag. The review mentioned that the project is part of a larger 10 GW project currently in the early stage of development, without providing any further details. (Enterprise 25.01)

ARAB STATE DEVELOPMENTS

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* 1. New Jordan-Egypt Submarine Cable to Power AI and Data Center Demands

Artificial intelligence applications and data center demands are poised for a boost, thanks to a new submarine cable connecting Egypt and Jordan. In the first collaboration of this kind in 25 years, the Coral Bridge submarine cable will stretch across the Gulf of Aqaba to create a maritime communications bridge connecting the Jordanian city of Aqaba to the Egyptian city of Taba, establishing a robust infrastructure between the two countries, according to an official statement.

The cable will be designed with high technical specifications to serve as a major project connecting the two countries with unique competitive advantages, thanks to the short distance between the landing points and its capacity to accommodate a large number of optical fibers for international traffic. Telecom Egypt, the first integrated communications operator in Egypt, and NaiTel, a telecommunications service provider in Jordan, have signed the agreement to establish the “Coral Bridge” submarine cable connecting the two nations.

Through this connection, the submarine cable will serve the Jordanian market and neighboring markets by providing integrated solutions from Aqaba to Europe, leveraging the diverse and multifaceted maritime infrastructure and the strong transit network of Telecom Egypt. (AN 25.01)

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* 1. Jordan Records Significant Decline in Imports in 2023

Jordan's imports witnessed a significant decline in the first 11 months of 2023 in several crucial sectors, including crude oil and its derivatives, jewelry and grains, resulting in an overall decrease in the country's import value, the Department of Statistics (DoS) said on 29 January.

Imports of crude oil and its derivatives went down by 17.5 %, jewelry by 27.9 %, grains by 24.7 % and other materials by 4.2 %. The total value of the Kingdom's imports in the first 11 months of last year amounted to some JD2.723 billion for crude oil and its derivatives, JD1.207 billion for jewelry, JD658 million for grains, and JD8.945 billion for other materials.

Certain sectors witnessed an increase in imports during the same period, where imports of vehicles, bicycles, and their parts increased by 40.7 %, machinery and mechanical tools and their parts increased by 8.7 %, and electrical machines and devices by 9 %. The value of imported vehicles, bicycles, and their parts reached around JD1.508 billion, machinery and mechanical tools and their parts amounted to JD1.035 billion, and machines and electrical appliances totaled some JD876 million.

Jordan's total imports from the beginning of 2023 until the end of November recorded a decline of 5.9%, amounting to JD16.952 billion compared to JD18.015 billion during the same period of 2022. (JT 29.01)

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* 1. Jordan Ranks 4th in Arab World & 63rd Internationally on Corruption Index

Jordan ranked fourth in the Arab world and 63rd globally out of 180 countries on the Corruption Perceptions Index (CPI) in 2023, which was issued on 30 January by Transparency International. The index showed that Jordan was among the first 63 countries in the world in combating corruption, ahead of 117 countries, and captured fourth place in the Arab world after the UAE, Qatar and Saudi Arabia.

For the sixth year in a row, Denmark topped the list on the index, with a score of 90, followed by Finland and New Zealand with scores of 87 and 85, respectively.

Transparency International said most world countries made little progress in tackling corruption in the public sector, as the global average of the index remains unchanged at 43 points for the twelfth year in a row, with two-thirds of countries scoring less than 50. (Petra 30.01)

►►Arabian Gulf

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* 1. UAE Establishes Artificial Intelligence and Advanced Technology Council

Sheikh Mohamed bin Zayed Al Nahyan, President of the UAE, has issued a law establishing the Artificial Intelligence and Advanced Technology Council (AIATC). The council will be responsible for developing and implementing policies and strategies related to research, infrastructure and investments in artificial intelligence and advanced technology in Abu Dhabi.

The establishment of the AIATC reflects a strong belief in the importance of technological leadership in building the economy of the future. The council will develop plans and research programs in collaboration with local and global partners to enhance Abu Dhabi's status in the fields of artificial intelligence and advanced technology. It complements Abu Dhabi's strategy to position the emirate as a world-leading hub for investments, partnerships, and talent in the sector. (WAM 23.01)

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* 1. UAE Ministry of Defense Spends $264 Million on Anti-Drone Tech

The UAE’s Ministry of Defense spent AED 971 million ($264 million) on equipment including unmanned aerial vehicles and anti-drone guns on the first day of Abu Dhabi’s Unmanned Systems Exhibition (UMEX). The Tawazun Council, a body which deals with Ministry contracts, said it had signed a deal to purchase unmanned aerial vehicles (UAVs) worth AED 874 million as well as a five-year support and training contract from International Golden Group, which is newly acquired by Abu Dhabi defense contractor Edge Group.

The council also agreed to procure anti-drone guns from Abu Dhabi defense company Resource Industries worth AED 10 million as well as AED 16 million worth of communications bands from Abu Dhabi-listed Yahsat. Foreign contracts signed were Canadian Aviation Electronics (CAE) for simulator support at training centers for AED 49 million, and a contract with the Chinese company CETC International Co to purchase anti-drones systems worth AED 23 million. (Zawya 23.01)

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* 1. UAE Ranks 4th Globally in Infrastructure Quality

The UAE jumped four places to rank fourth globally in infrastructure quality in the World Economic Forum's (WEF) 2023 competitiveness report. The country has invested more than AED 13 billion in the past 10 years to develop and implement 258 vital projects. Another AED 9 billion ($2.45 billion) will be invested to develop 127 projects over the next five years. In October 2023, the UAE Cabinet approved the federal budget 2024-2026 roadmap, with a total value of AED192 billion. Around AED2.6 billion, or 4% of the total general budget, was allocated to infrastructure and economic resources. (Zawya 26.01)

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* 1. Oman’s First Satellite Aman-1 Transmits Images & Provides Critical Data

Omani company ETCO Space’s Aman-1 satellite published its first images of SOHAR Port and Freezone and the Western Hajar Mountains in the *wilayat* of Ibri. Aman-1 is the first Omani satellite to be launched into low Earth orbit for the purposes of satellite imagery, ground observation and remote sensing.

ETCO Space said the company is ready to provide integrated ground observation services, satellite images for highly accurate data analysis and developing systems supported by artificial intelligence to meet the specific needs of government and private sectors. Aman-1 was launched on 11 November 2023 by the American company SpaceX.

Earlier, ETCO Space announced establishment of a joint Omani-Polish company called Spazers to provide satellite manufacturing services, space launch services, and to build and operate ground stations in Oman and the Middle East. (Various 22.01)

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* 1. Saudi Non-Oil Economy Grew by 20% Since 2016

Saudi Minister of Economy and Planning Al Ibrahim said at the World Economic Forum 2024 that Saudi Arabia's non-oil economy has grown by 20% since 2016, surpassing the growth rates of the European Union and the United States, which stood at 10% and 14%, respectively. During a panel session titled 'MENA’s Economic Dilemma: Reforms Amid Uncertainty,' Al Ibrahim highlighted the significant strides made by the Kingdom in bolstering its non-oil economy. This growth trajectory positions Saudi Arabia as a leading example of economic resilience and diversification in the Middle East.

Al Ibrahim attributed this success to Saudi Vision 2030, describing it as an "evolution and transformation" pivotal in reshaping both the country's economy and society. He emphasized the vision's role in guiding the Kingdom toward its desired future state. The minister also spoke about the continued robust momentum behind Saudi Arabia's non-oil economic growth, underscoring the importance of boldness and collaboration in the Kingdom's transformative journey. He stressed that these elements are crucial for Saudi Arabia to "continue delivering day in, day out. (SG 19.01)

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* 1. Saudi Aramco Allocates $4 Billion More to Venture Capital Unit

Saudi Aramco will allocate an additional $4 billion to its venture capital unit as Saudi Arabia expands its global ambitions in an effort to diversify its oil-dependent economy. The extra funds will be injected over four years and will more than double Aramco Ventures’s capital from $3 billion to $7.5 billion, including the $500 million VC fund Wa’ed Ventures, which focuses on the startup ecosystem in Saudi Arabia. The bigger size will help with investments in new energies, chemicals and energy transition materials and digital technologies.

State-run Aramco is the world’s largest oil producer and one of the globe’s biggest companies by net income. The company’s vast resources are key to the kingdom’s plans to prepare the economy for a post-oil future. Aramco Ventures has invested in firms that operate in sectors ranging from carbon management to renewables and hydrogen. (GB 17.01)

►►North Africa

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* 1. Telecom Egypt Wins First 5G License in Egypt in $150 Million Deal

Telecom Egypt has become the first operator in the country to secure a 5G license. The National Telecommunications Regulatory Authority (NTRA) granted the 15 year license for $150 million, allowing Telecom Egypt to offer fifth-generation mobile communication network services. This development follows reports in October 2023 that the Egyptian government was planning to issue 5G licenses. With this milestone, Telecom Egypt is now positioned to take the lead in rolling out these high-speed, high-capacity networks across the country. (DNE 17.01)

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* 1. Shipping Giants Divert More Red Sea Routes and Seek Overland Alternatives

Danish shipping giant Maersk announced its reshuffle of routes on its ME2 service that connects the western Mediterranean to the Arabian Gulf and India, diverting them via the Cape of Good Hope. The revised rotation will see westbound calls to Salalah and Jeddah suspended until further notice. The company also said that it will no longer load new cargo from Somalia’s Berbera or Yemen’s Hodeida and Aden, in addition to omitting Djibouti from its Blue Nile Express (BNX) service. Maersk cited risks to seafarers and cargo on Red Sea transits as the reason behind the reshuffles.

Hapag Lloyd is introducing land corridors through Saudi Arabia to minimize the impact of disruptions to client businesses, as the German carrier continues to reroute shipments via the Cape of Good Hope until further notice. Hapag Lloyd is looking to establish a land route linking the UAE’s port in Jebel Ali and Saudi Arabia’s ports Dammam and Jubail to an ocean shuttle service operating out of Jeddah. The firm said that it will “continue to expand this inland network within the GCC.” All of these moves have serious consequences for the Suez Canal and the revenues it earns for Egypt. (Enterprise 22.01)

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* 1. Putin & Sisi Mark New Phase of Egypt's Russian-Built Nuclear Plant

On 23 January, Russian President Putin and Egypt's al-Sisi inaugurated the construction of a new unit at Egypt's Dabaa nuclear power plant via video link, as Moscow moves ahead with its global nuclear ambitions. The power plant is being built by the Russian state corporation Rosatom at a reported cost of $30 billion, and will consist of four power units with a combined capacity of 4.8 gigawatts. The two presidents were opening the construction of the fourth and final unit.

Egypt, which faces increasing power demand from a population of a 105 million, is seeking to position itself as a regional energy hub that exports electricity to neighboring countries, and to diversify its energy sources.

Since Sisi became president in 2014 the country developed a surplus capacity for electricity generation but has been grappling with power cuts since last summer after heatwaves drove up demand for cooling. Production of natural gas used for power generation has also been dipping, and Egypt resorted to burning more polluting fuel oil in some power stations as it tried to keep up LNG exports - an important source of scarce foreign currency. Moscow and Cairo signed an agreement in 2015 for Russia to build a nuclear power plant in Egypt, with Russia extending a loan to Egypt to cover the cost of construction. (Various 24.01)

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* 1. Morocco's Consumer Price Index Rises by 6.1% in 2023

Morocco’s economy continues to grapple with a rising Consumer Price Index (CPI) triggered primarily by soaring food prices at the end of 2023. A new report from the Higher Commission of Planning (HCP) shows that despite a dip in CPI - an index tracking the average price of a basket of goods and services - at the end of December 2023, the annual CPI in the country remains elevated at 6.1%. The report said that in December 2023, CPI dropped by 0.1% compared to the previous month, while monthly core inflation rose by 0.2%. Core inflation tracks the growth in everyday goods and services, excluding commodities with volatile prices such as energy products.

On an annual basis, core inflation rose by 5.9% at the end of 2023 – almost three times the recommended rate for a healthy economy. HCP data indicates that the spike in CPI at the end of 2023 is primarily due to the 12.5% increase in the index for food products and a 1.7% increase for non-food products. The variations recorded for non-food products range from a 0.1% increase in the prices of transport to a 5.7% increase for restaurants and hotels. (MWN 22.01)

TURKISH, CYPRIOT & GREEK DEVELOPMENTS

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* 1. Measures Being Planned in Greece to Increase Births

Greece's birth allowance is increasing permanently and retroactively by €400 to €1,500 for births that took place from January last year, depending on the number of children. This is the allowance introduced as of 1 January 2020, amounting to €2,000 for each child born. This forms part of a total of seven government interventions against the demographic problem, which add up to €441 million, Finance Minister Hatzidakis announced.

The beneficiary of the birth allowance is the mother who resides permanently and legally in Greece and has an annual equivalent family income up to €40,000. Until today the aid has been paid in two installments of €1,000 each. From now on, as Hatzidakis and Social Cohesion and Family Minister Zacharaki announced, the birth allowance increases for each child born, depending on the number of children in the family. Therefore, for the first child, it amounts to €2,400, for the second to €2,700, for the third to €3,000, and for the fourth, etc. to €3,500.

The measure bolsters Greek families at a time when there has been a decrease in births and indeed in an environment of high living costs. It annually supports approximately 35,000 one-child families, 32,000 families with two children, 6,600 families with three and 1,400 families with four or more children. (eKathimerini 23.01)

GENERAL NEWS AND INTEREST

\*ISRAEL:

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* 1. Single Women & Lesbians Become Main Sperm Donation Recipients in Israel

There have been major demographic changes in Israel among recipients of sperm donations over the past three decades, from mostly younger heterosexual couples with fertility problems to older, single heterosexual women and lesbians. The changes were reported in the latest issue of Israel Medical Association Journal (IMAJ), by researchers at the in vitro fertilization department and the sperm bank at the Shamir Medical Center in Tzrifin. It was the longest follow-up study on the subject to reflect dramatic sociological changes among sperm donation recipients. In vitro fertilization (IVF) is fully funded by the Israeli healthcare system up to a point. There is a limit to the attempts to achieve a pregnancy; the subject’s age is a primary factor.

Sperm banks used to be dedicated mostly to providing sperm donations to heterosexual couples grappling with severe male infertility. Sociological trends have broadened the scope towards single women and same-sex female couples. The mean age of women who received sperm donations was about 35 years old from 1992 to 1997, to 37 years old between 2017 to 2021. In recent decades, clients have changed drastically from being 33% single and same-sex female couples, to 88%.

The study included 5,489 women who received donated sperm between 1992 and 2021. While between 1992 to 1996, two-thirds of recipients were heterosexual women, the same was true only for 11.9% in recent years. The leading ethnic origin was Sephardi Jews, followed by Ashkenazi Jews, combinations, Balkan Jews, ethnic minorities and Ethiopian Jews. Some 65% asked for sperm from Jewish men, while 35% sought it from non-Jews abroad. Many Orthodox rabbis even recommend that Jewish women who want to use donated sperm should get a donation from a non-Jew to prevent the possibility that the donor might be a blood relation. Because of the growing demand from women for donations and stricter genetic tests, there is a shortage of donors. (JP 29.01)

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* 1. About 1.7 Million Jordanian Students Return to Schools

Jordan began the second academic semester on 21 January, with around 1.7 million students returning to the classrooms. The Education Ministry said that around 115,000 public school teachers and administrators returned to the Kingdom’s 4,073 public schools to welcome students. The total number of school students in Jordan is estimated to be 2,250,000.

Classes in private schools are expected to resume at the beginning of February. The total number of teachers and administrators working at private education establishments is nearly 50,000, while around 550,000 students go to private schools in Jordan.

Back in 2021, over 130,000 students transferred from private to public schools, due to switching to distance education and the difficult financial circumstances during the COVID-19 pandemic. The changes in the scholastic calendar this semester were due to the ministry’s implementation of the national program addressing student learning loss, which requires increasing the length of the academic period. (JT 22.01)

ISRAEL LIFE SCIENCE NEWS

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* 1. SeeTree Secures $17.5 Million in a Series C Round for its Tree Intelligence Platform

SeeTree raised $17.5 million in Series C funding, co-led by HSBC Asset Management and EBRD (European Bank for Reconstruction and Development). The round also included new investors OurCrowd, and SmartAgro, and continued support from Hanaco Ventures (after leading the A round of the company), Mindest Ventures, Uri Levine’s TFK, Orbia Ventures and SeeTree customer Citrosuco.

SeeTree has developed an AI-based ‘Tree operating System’ that offers per-tree intelligence to growers to track the health and productivity of their trees. The round will allow the company to expand its platform to encompass new crop types and to expand its marketing, sales activities, and R&D efforts in key territories, including North America, LATAM, Ukraine and APAC.

Tel Aviv's [SeeTree](https://www.seetree.ai/) was founded in 2017 and has operations in Brazil, the USA, Mexico and South Africa, and a development center in Ukraine. (SeeTree 17.01)

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* 1. Better Juice Partners with Ingredion to Offer Sugar Reduction Solutions

Better Juice announced its collaboration with Westchester, Illinois' [Ingredion](https://www.ingredion.com). Ingredion Ventures, Ingredion’s venture investment arm, will lead the Series A funding round for Better Juice which will fast-track penetration of its sugar reduction solution into the US juice market.

Better Juice’s innovative sugar reduction technology removes simple sugars in juice-based beverages, concentrates and other natural sugar-containing liquids. The company developed an enzymatic technology, which converts sugars into non-digestible compounds, such as dietary fibers and non-digestible sugars, while maintaining the natural profile of vitamins, minerals and organic acids in the final product. These enzymes convert the juice’s composition of fruit sugars including sucrose, glucose, and fructose into prebiotic fibers and other non-digestible molecules. This enables sugar reduction by 30-80%.

Rehovot's [Better Juice](https://www.better-juice.com/)’s solution has advanced to commercial scale in the US. In recent years, it demonstrated its full proof of concept in collaboration with juice manufacturers in the U.S and Asia. These companies are now poised to progress to the next stage of commercialization. Better Juice is now fully prepped for market entry, with a capacity to process 250 million liters of sugar reduced juice per year. (Better Juice 17.01)

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* 1. Agritask Partners with Pessl to Enhance Agronomic Data Analytics

Agritask and Weiz, Austria's Pessl Instruments, a leading global developer and provider of smart agriculture technological solutions, jointly announced their partnership to integrate METOS weather stations into the Agritask platform. In combination with other agronomic data sources, METOS weather station data, which includes a variety of real-time environmental parameters, will provide a more advanced agronomic picture down to the plot level for food and beverage companies using the Agritask platform.

Through the partnership, Agritask customers will gain a seamless integration of METOS systems and their data feeds, which will be optimized with all other data sources on the Agritask platform. METOS weather stations help farmers mitigate risks associated with extreme weather events and climate change shifts. The technology provides insights into soil and crop conditions, enabling resource-efficient practices. Data-driven decision-making helps better plan field activities such as when to seed or sow and when to irrigate, spray, and harvest.

Tel Aviv's [Agritask](http://www.agritask.com) is a Crop Supply Intelligence Company, providing visibility into predictability and sustainability of crop supply for Food & Beverage enterprises. Their SaaS platform is a crucial link that directly connects enterprises to growers and suppliers at the source of their value chain. Leveraging augmented agronomic data, AI/ML, and data analytics, Agritask equips Food & Beverage enterprises with invaluable insights and cutting-edge tools. Agritask helps these enterprises optimize supply operations and achieve & quantifiably measure their sustainability goals while mitigating risks across globally distributed farming ecosystems. (Agritask 17.01)

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* 1. Immunity Pharma Announces Positive Top Results from Phase 2a Trial in ALS Patients

Immunity Pharma announced positive top line results from the Phase 2a trial with IPL344 in amyotrophic lateral sclerosis (ALS) patients. The study demonstrated statistically significant efficacy as measured by change in the slope decline of ALSFRS-R. The drug was well tolerated, and the study suggests benefits in weight gain, respiration and survival. Neurofilament (NfL) reduction was observed following IPL344 treatment.

In this study, once-daily treatment with IPL344 for up to 36 months was well tolerated, with no major drug related serious adverse events (SAE). No participants discontinued treatment due to drug-related AEs. IPL344 treated patients showed a mean slope of decline in ALSFRS-R of -0.53, equating 48% slower disease progression (p=0.028). Adjustment for disease stage and rate-indicating covariates, indicated a 64% slower ALSFRS-R progression (p=0.034). In addition, a statistically significant increase rather than decrease was observed in body weight of IPL344 treated patients (p=0.02; compared to the PRO-ACT database of patients treated with placebo). Median survival of patients in this study was 29 months vs. 19 months of placebo treated patients in the ceftriaxone study (post-treatment follow-up is still ongoing), indicating a trend toward reduced risk of death in favor of IPL344 (p=0.13). There was a non-significant trend for preserved respiration capacity (44% slower reduction in average %SVC loss per month vs. historical placebo; p=0.15).

IPL344 is a biologically active peptide that stimulates therapeutic cell-signaling processes including activation of the Akt pathway, which is down-regulated in neurodegenerative diseases. IPL344 was discovered in the Weizmann institute of Science, Israel, at Prof. Irun Cohen's Laboratory. IPL344 is being developed as an intravenous injection for the treatment of ALS initially through a Phase 1/2a clinical trial in ALS patients. IPL344 received orphan drug designation from FDA and EMA, which grants exclusivity for at least seven years.

Jerusalem's [Immunity Pharma](http://www.immunitypharma.com) is a privately-held clinical-stage neurology-focused biopharmaceutical company that develops therapies for neurodegenerative diseases, with an initial focus on Amyotrophic lateral sclerosis (ALS). IPL's drugs are biologically active peptides that stimulate therapeutic cell-signaling processes and mitigate progression of neurodegenerative diseases by inducing intra-cellular survival-supporting processes. (Immunity Pharma 17.01)

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* 1. Biomica Completes Enrollment for Microbiome-Based Immuno-Oncology Drug

Biomica announced that the final patient has been enrolled in its Phase I clinical trial. Initiated in July 2022, the Phase I trial was specifically designed to evaluate the safety and tolerability of Biomica's microbiome-based immuno-oncology drug candidate, BMC128, in combination with immune checkpoint inhibitor (ICI) immunotherapy, in patients with either non-small cell lung cancer (NSCLC), melanoma or renal cell carcinoma (RCC), who previously progressed on immunotherapy. Bristol Myers Squibb's Opdivo is the immune checkpoint inhibitor in the trial. The study takes place at The Davidoff Center and the Rambam Health Care Campus in Israel. Biomica remains on track with preliminary results, and the first data point readout is expected in H1/24.

BMC128 is a rationally designed microbial consortium identified and selected through a detailed functional microbiome analysis using PRISM, a proprietary high-resolution microbiome analysis platform powered by MicroBoost AI tech engine. Developed as a Live Bacterial Product (LBP), BMC128 is an LBP consortium comprised of four unique bacterial strains, natural inhabitants of the human intestinal tract, that harbor specific functional capabilities with the potential to enhance immunological therapeutic responses and facilitate anti-tumor immune activity through multiple biological processes.

Rehovot's [Biomica](http://www.biomicamed.com) is a clinical stage biopharmaceutical company developing innovative microbiome-based therapeutics utilizing PRISM system, a proprietary computational platform powered by Evogene's MicroBoost AI tech-engine. Biomica aims to identify and characterize disease-related microbiome entities and to develop novel therapeutics based on these understandings. (Biomica 17.01)

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* 1. UNFO Introduces Innovative Corrective Foot Brace For Newborns

UNFO Med, manufacturer of the Universal Neonatal Foot Orthotics (UNFO) system, introduced a first of its kind corrective foot brace for the treatment of various foot conditions such as Metatarsus Adductus (MTA), a common condition in newborns that causes the front half of the foot, or forefoot, to turn inward. Other conditions include Metatarsus Varus, forefoot adduction, intoeing and skew foot. This development marks a significant milestone in pediatric orthopedic care, replacing the need for casting and surgical intervention.

Metatarsus Adductus – also known as MTA – is a congenital foot condition that occurs in approximately 7% of births. Traditionally, casting and surgical intervention have been the standard for addressing MTA in infants. Casting can be extremely uncomfortable and painful for the child, causing stress for both the infant and the parents. However, UNFO's innovative corrective foot brace, developed under the guidance of Israeli Dr. Izak Daizade, eliminates the necessity for casting and surgery, providing a non-invasive and highly effective alternative for parents and their newborns.

UNFO is patented technology and FDA approved. The UNFO brace is now available for medical practitioners and orthopedic specialists in the US, including Mount Sinai Hospital in Baltimore and select healthcare facilities nationwide.

[UNFO Med](https://unfo-med.com) is at the forefront of pioneering pediatric orthopedic innovation, committed to reshaping the landscape of early childhood healthcare. With a mission to revolutionize treatment methodologies, UNFO specializes in crafting innovative solutions for prevalent orthopedic conditions in infants and children. The Universal Neonatal Foot Orthotics (UNFO) system represents a pinnacle of cutting-edge healthcare technology. (UNFO Med 16.01)

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* 1. ProFuse Revolutionizes Skeletal Muscle Research with Groundbreaking PROFUSE-S1

ProFuse Technology announced the launch of PROFUSE-S1, a groundbreaking media supplement specifically engineered to accelerate and enhance skeletal muscle research across academic, cultivated meat and life science sectors. PROFUSE-S1 boasts five key features that revolutionize skeletal muscle research:

1. Rapid Differentiation and Maturation: PROFUSE-S1 significantly accelerates muscle cell differentiation, fusion, and maturation, enabling researchers to achieve desired results in a fraction of the time, streamlining project timelines and fast-tracking research milestones.
2. Enhanced Model Flexibility: This versatile supplement works with a wide range of cell species, types, and media combinations, allowing researchers to develop sophisticated and precise muscle models tailored to their specific needs.
3. Improved Tissue Mimicry: PROFUSE-S1 promotes the development of muscle tissue models that closely resemble natural tissues, both in structure and function, enhancing the fidelity and translational potential of research findings.
4. Clinically Relevant Regeneration: The supplement supports the engineering of muscle tissue constructs with authentic protein profiles and functionality, paving the way for transformative advancements in regenerative medicine.
5. Optimized Cultivated Meat Production: PROFUSE-S1 enables the efficient production of cultivated meat with substantial biomass and protein yields, accelerating the development of sustainable and scalable alternatives to traditional meat production.

Kiryat Shmona's [ProFuse Technology](http://www.profuse-tech.com) specializes in creating solutions for muscle growth in the cultivated meat and life science industries. This includes the development of cell lines and media supplements. Their solutions not only increase yield and shorten production cycles but also lead to a substantial reduction in production costs. The company actively collaborates with prominent cultivated meat and life-science companies, seamlessly integrating its solutions into their production processes for cultivated meat and in-vitro muscle models. Established in 2021, the company received investments from leading industry and financial investors. Its technology is based on six years of research conducted at the Weizmann Institute of Science. (Profuse Technology 16.01)

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* 1. Tarsier Receives FDA Approval for TRS01 Ophthalmic Solution for Uveitis Treatment Trial

Tarsier Pharma has received agreement from the U.S. FDA under a Special Protocol Assessment (SPA) for the clinical trial protocol and planned statistical analysis of the Tarsier-04 Phase 3 trial to evaluate TRS01 eye drops for the treatment of non-infectious uveitis including uveitic glaucoma. A SPA agreement indicates concurrence by FDA with the adequacy and acceptability of specific critical elements of overall protocol design for a study intended to support a future marketing application.

Tarsier received written agreement from the FDA that the clinical trial protocol and planned statistical analysis of the Tarsier-04 Phase 3 trial of TRS01 address objectives supporting regulatory submission and a potential future marketing application in this indication. Tarsier-04 will be a multi-center, randomized, double-masked, active-controlled Phase 3 trial designed to evaluate the efficacy and safety of TRS01 eye drops in non-infectious uveitis including patients with uveitic glaucoma, and is planned to enroll up to 300 patients in the U.S.

[Tarsier Pharma](http://www.tarsierpharma.com) is a clinical stage biopharmaceutical company, focused on the discovery, development, and commercialization of first-in-class pharmaceutical therapies to treat immune-mediated blinding diseases in the front and back of the eye. (Tarsier Pharma 16.01)

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* 1. Israel Becomes First Nation to Approve Lab-Grown Meat Sales

Israeli food tech startup Aleph Farms from Rehovot received approval from Israel's Health Ministry to market its fully lab-grown beef. The food regulators' decision means that the alternative meat, cultivated from biopsied stem cells in bioreactors, will soon be available at supermarkets and restaurants – domestically and internationally.

The meat is considered "parve" in the kosher category: for religious purposes, it is neither dairy nor meat, stated the Chief Rabbinate of Israel after visiting Aleph Farms factory in Rehovot. Back in January 2023, Chief Rabbi David Lau gave his kosher stamp of approval to the cultivated thin-cut steaks. The first meat Aleph Farms will serve to Israelis will be a steak made from the organ of an Angus cow named Lucy. Lucy's cells are not to undergo any genetic modification process. Aside from the cells derived from Lucy's fertilized egg, the manufacturing process and the final product do not include any animal-derived components. The company noted that no antibiotics were used in the process.

Rehovot's [Aleph Farms](http://www.aleph-farms.com) enhances sustainability, food security and animal welfare by diversifying the supply and decentralizing the production of quality animal proteins and fats as a complement to sustainable animal agriculture. Founded in 2017, the company unveiled the world’s first cultivated thin-cut beef steak in 2018, the world’s first cultivated ribeye steak in 2021, and cultivated collagen in 2022. (i24NEWS 19.01)

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* 1. Pi-Cardia Receives FDA Breakthrough Device Designation for ShortCut

Pi-Cardia received Breakthrough Device Designation from the US FDA for ShortCut - the world's first dedicated leaflet modification device facilitating valve-in-valve Transcatheter Aortic Valve Replacement (TAVR) procedures in patients at risk of coronary obstruction. This announcement comes after completion of enrollment in the ShortCut Pivotal Study in the US and Europe in September 2023.

ShortCut is part of Pi-Cardia's leaflet modification product portfolio, which includes the ShortCut Mitral for splitting leaflets in patients at risk for left ventricular outflow tract obstruction following TMVR, and Leaflex - a standalone, non-implant-based mechanical scoring device to restore leaflet mobility and improve hemodynamics for patients with aortic stenosis. Leaflex global clinical trials are underway.

Rehovot's [Pi-Cardia](http://www.pi-cardia.net) is a global leader in the development of a unique portfolio non-implant, catheter-based, leaflet modification solutions for treating heart valves. Pi-Cardia's ShortCut device is designed to provide a safe, simple and effective way to split valve leaflets: ShortCut Aortic is designed to split leaflets of a pre-existing valve prior to TAVR in patients at risk for coronary obstruction and may assist in preserving coronary access; ShortCut Mitral is designed to split the anterior mitral leaflet prior to TMVR in patients at risk for LVOT obstruction. Pi-Cardia's Leaflex device mechanically scores valve calcification at multiple locations, with the intention of restoring leaflet flexibility and improving valve hemodynamics. Leaflex is designed to be a cost-effective, durable standalone treatment for patients with calcified aortic stenosis. Additional leaflet modification technologies are being developed to further expand treatment options in challenging anatomies such as bicuspid valves. (Pi-Cardia 22.01)

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* 1. Forsea Unveils First Cultured Eel

Forsea Foods unveiled its first prototype of cell-cultivated freshwater eel. Forsea successfully replicated the traditional Japanese unagi eel (Anguilla japonica) featuring the same tender, succulent texture and rich savory flavor as real eel. The visionary start-up has been working together with the celebrated executive chef Katsumi Kusumoto to create two popular traditional Japanese dishes – *unagi kabayaki* (marinated grilled eel over rice) and *unagi nigiri*. Kusumoto runs the vegan restaurant SAIDO in Tokyo, which was voted the world's best vegan restaurant in 2019 by the online vegan restaurant guide Happy Cow.

The company has achieved a working proof-of-concept that embodies the sensory attributes of real eel meat and is now prepped for scale-up. In the collaboration, Forsea contributes its novel technology for cell-cultivating eel cuts, while Kusumoto contributes his culinary mastery to refine the product to perfection in texture and flavor. Forsea was the winner of the Startup Pitch Hour Prize at the Asia-Pacific Agri-Food Innovation Summit last October in Singapore.

Rehovot's [Forsea](https://www.forseafoods.com/) was founded in 2021 with a mission to turn the tide on the downward spiral of the ocean's seafood populations by developing a cell-cultivated alternatives. Overfishing of eels has turned this aquatic delicacy into an endangered species. The immense popularity of eel meat in Asia, Europe, and the US likewise poses significant challenges for suppliers who struggle to keep up with the surging demand. This leads to supply bottlenecks, illegal trade and high prices. (Forsea Foods 22.01)

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* 1. Pluri Launches Sustainable Cell-Based Coffee to Meet Global Coffee Crisis

Pluri has launched its cell-based coffee business activity, an innovative product that will potentially revolutionize the traditional coffee industry. Pluri’s cell-based coffee product is designed to address the growing global demand for sustainable, high-quality coffee at mass scale production.

PluriAgtech’s cell-based coffee has been developed to deliver authentic coffee while solving key challenges faced by the industry. Compared to traditional methods of coffee production, Pluri’s cell-based coffee is estimated to slash water usage by 98%. This innovation promises to confront the reduction of suitable growing areas that are expected to decline by up to 50% by 2050; reduce price instability in a traditional commodity market; and minimize the environmental impact of coffee production, as current production methods have a high carbon footprint and upcoming regulations are expected to further strain producers. While coffee production challenges persist, world demand for coffee is expected to triple by 2050.

Haifa's [Pluri](http://www.pluri-biotech.com) is pushing the boundaries of science and engineering to create cell-based products for commercial use and is pioneering a biotech revolution that promotes global well-being and sustainability. The Company’s technology platform, a patented and validated state-of-the-art 3D cell expansion system, advances novel cell-based solutions for a range of challenges— from medicine and climate change to food scarcity, animal cruelty and beyond. (Pluri 23.01)

ISRAEL PRODUCT & TECHNOLOGY NEWS

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* 1. Rail Vision $5 Million Sale to Leading US-Based Rail & Leasing Services Company

Rail Vision announced that a leading US-based rail and leasing services company signed a supply contract with Rail Vision valued at up to $5,000,000 for the purchase of Rail Vision’s AI-based Switch Yard Systems. The system enables railway operators to streamline and enhance the safety of their industrial switching operations. Combining advanced vision sensors with artificial intelligence and deep learning technologies, the system automatically detects and classifies objects within a range of up to 200 meters, in diverse weather and light conditions. With its one-of-a-kind Pathfinder technology, the Switch Yard System can detect switch states to support the execution of coupling from a remote position. In addition, it enables the monitoring of operational dead zones to facilitate secure wagon coupling and sends real-time visual and acoustic alerts to remote operators and drivers, ensuring a safe and secure environment.

The first phase of the contract is valued at $1,000,000. Follow-on orders for additional Switch Yard Systems, valued at up to $4,000,000, are subject to customer approval. The contract also includes specific purchase quotas that, if met, provide the customer with exclusivity in the North American industrial railyards switching segment.

Ra'anana's [Rail Vision](https://www.railvision.io/%E2%80%8E) is a technology company that is seeking to revolutionize railway safety and the data-related market. The Company has developed cutting-edge, artificial intelligence based, industry-leading technology specifically designed for railways. (Rail Vision 17.01)

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* 1. Brenmiller Receives Grant to Supply Low-Carbon Electric Heat to Wolfson Hospital

Brenmiller Energy received a $450,000 grant from the Israel Innovation Authority to be applied to its TES project at Wolfson Hospital in Holon, Israel. The Company previously announced approval from the Israel Ministry of Finance for a $3.7 million budget to develop and operate a bGen ZERO system for Wolfson Hospital over a seven-year term. According to the Israel Ministry of Finance, Brenmiller’s TES system has the potential to reduce costs for Wolfson Hospital by up to $1.3 million annually and lower its carbon footprint by 3,900 tons per year.

Brenmiller’s bGen ZERO is a thermal energy storage system that converts electricity into heat to power industrial processes at a price that is competitive with natural gas. The bGen charges by capturing low-cost electricity from renewables or the grid and stores it in crushed rocks. It then discharges steam, hot water or hot air on demand according to customer requirements. The bGen also supports the development of utility-scale renewables by providing critical flexibility and grid-balancing capabilities.

Rosh HaAyin's [Brenmiller Energy](https://bren-energy.com) delivers scalable thermal energy storage solutions and services that allow customers to cost-effectively decarbonize their operations. Its patented bGen thermal storage technology enables the use of renewable energy resources, as well as waste heat, to heat crushed rocks to very high temperatures. They can then store this heat for minutes, hours, or even days before using it for industrial and power generation processes. (Brenmiller Energy 18.01)

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* 1. Wing Security Unveils Cutting-Edge Automated Protection Against AI-SaaS Risks

Wing Security unveiled an automatic advanced approach to counter the evolving risks of Intellectual Property (IP) and data leakage into GenAI applications. Amidst the growing adoption of GenAI, and the many SaaS applications powered by GenAI, Wing brings awareness and control back to security teams who are facing a dynamic and complex new attack surface.

By seamlessly automating the risk reduction process within business units, from discovery to analysis and through remediation, Wing ensures a collaborative and straightforward strategy for enhancing security. The innovative approach alleviates the Chief Information Security Officer (CISO) and their team from becoming bottlenecks in safeguarding the organization's sensitive data and Intellectual Property, preventing potential exposure to GenAI risks by including the applications’ users in the remediation loop.

The company’s new capability excels in identifying applications infused with AI capabilities, a crucial aspect that companies often overlook. Wing's proficiency extends to determining whether SaaS apps used in daily business operations store their customers’ data, employ AI to learn from the data, and facilitate human review to assist in their AI model training by manually reviewing this sensitive data. To achieve this, Wing has elevated its unique insights and capabilities, empowering users to navigate the landscape with extensive visibility into over 300,000 applications, including those less commonly known.

Tel Aviv's [Wing](https://wing.security) empowers organizations to leverage SaaS potential while ensuring a robust security posture. Their SSPM solution provides unparalleled visibility, control, and compliance capabilities, fortifying defenses against modern SaaS-related threats. With automated security capabilities, Wing saves weeks previously spent on manual processes for CISOs, security teams, and IT professionals. (Wing 17.01)

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* 1. Waterfall Unveiled a Revolutionary Browser-Based Tool for Monitoring Security Assets

Waterfall Security Solutions launched "Waterfall Central", a cutting-edge browser-based tool designed to enhance the experience of our customers in efficiently and securely monitoring their Waterfall assets. In response to the dynamic landscape of regulations and the escalating cybersecurity threats within Operational Technology (OT), the demand for Waterfall's Unidirectional Security Gateways has soared. Recognizing the increased deployment of Waterfall solutions by each customer, the development of Waterfall Central became imperative to offer a comprehensive solution that seamlessly monitors and tracks all aspects, ensuring a streamlined and efficient experience.

As the OT security threat landscape expands, many Waterfall customers have adopted multiple Waterfalls across various facilities, each safeguarded by its own Waterfall platform. Waterfall Central addresses this growing demand by delivering an easy-to-use tool that seamlessly integrates with all Security Information and Event Management (SIEM) systems, facilitating the centralized monitoring of all Waterfall assets from one accessible platform.

Rosh HaAyin's [Waterfall Security Solutions](http://www.waterfall-security.com)' unbreachable OT cybersecurity technologies keep our world running. For more than 15 years, critical industries and infrastructure have trusted Waterfall to guarantee safe, secure, and reliable operations. Waterfall's growing list of global customers includes national infrastructures, power plants, nuclear reactors, onshore and offshore oil and gas facilities, refineries, manufacturing plants, utilities, and more. (Waterfall 18.01)

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* 1. Swimm Launches World's Most Advanced Contextualized Coding Assistant

Swimm launched /ask Swimm, the most comprehensive solution available for enterprise software development teams that combines an AI-powered chat and human input to provide personalized and accurate code knowledge instantly.

/ask Swimm is an AI-powered coding assistant providing developers with a multilayered contextual understanding of code, enabling them to significantly boost productivity across the entire development lifecycle. The chat is dynamic and personalized to an organization's specific codebase, documentation, user interactions and other 3rd party tools. A fully contextualized conversational chat within the IDE instantly enables developers to answer any questions about documentation, code, files, repos or even entire software ecosystems. To gain context, /ask Swimm incorporates factors that are not evident in the code itself, such as business decisions, product design considerations, limitations that were the basis for roads not taken, etc. /ask Swimm automatically captures and updates code-related knowledge in the process, while improving over time with continuous feedback and user-generated documents.

Tel Aviv's [Swimm](https://swimm.io/%E2%80%8E) helps engineering teams transform the developer experience, and improve code efficiency, reliability, and consistency, while continuously increasing their documentation coverage - without the upfront investment and productivity time loss. The company develops tools that ensure code knowledge is always discoverable and high-quality, providing a Single Source of Truth for organizations that enables them to gain visibility into the entire software development process, while ensuring software development is based on the most accurate and up-to-date information. (Swimm 17.01)

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* 1. PractiTest's Smart Fox AI Assistant and Test Value Score Redefine QA Excellence

PractiTest recently unveiled its latest release, featuring the introduction of a new AI assistant named Smart Fox. This innovative addition streamlines the test creation process by converting labor-intensive manual test step creation into a seamless and automated action. Furthermore, the Smart Fox excels in enhancing existing steps based on users' preferences, offering improved clarity throughout their testing processes.

SmartFox is now added to PractiTest offering alongside Test Value Score which was introduced at the end of 2022. Test Value Score utilizes advanced machine learning algorithms and AI to assess and assign a score to each test, offering a tangible measure of its impact on the testing process. This innovative feature has evolved to enable QA teams to retire up to 40% of irrelevant tests from their testing cycles, as attested by our pioneering customers. The Test Value Score stands as a powerful tool for optimizing and streamlining the testing workflow.

Rehovot's [PractiTest](https://www.practitest.com) is an end-to-end test management platform that centralizes all your QA work, processes, teams, and tools into one platform to bridge silos, unify communication, and enable one source of truth across your organization. With PractiTest you can make informed data-driven decisions based on end-to-end visibility provided by customizable reports, real-time dashboards, and dynamic filter views. Improve teams' productivity; reuse testing elements to eliminate repetitive tasks, plan your teams' work based on AI-generated insights and enable your team to focus on what really matters. (PractiTest 17.01)

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* 1. StoreDot Unveils the Future of Extreme Fast Charging with All-New I-Beam XFC

StoreDot has unveiled a breakthrough concept for taking extreme fast charging (XFC) capability from the cell to the vehicle level with its new I-BEAM XFC concept, an innovative cell-to-pack (CTP) design that will accelerate the integration of XFC into EVs. At the core of I-BEAM XFC sits StoreDot's proprietary 100in5 cell technology, which enables charging 100 miles, or 160km of range in just 5 minutes. StoreDot's 100in5 electrodes are assembled into its new I-BEAM XFC cells, which are designed to be incorporated directly into the battery pack.

While standard cell-to-pack architectures aim to improve range and energy density, StoreDot is also focusing on extreme fast charging with its I-BEAM XFC concept. It leapfrogs the complexity and cost challenges of embedding XFC capability at the vehicle level, allowing EVs to be charged even more rapidly.

Unlike traditional cooling systems, the I-BEAM XFC patented Structural Cooling concept is embedded into the structure of each cell, providing enhanced thermal management. This prevents localized hot spots and maintains uniform temperatures across the battery pack, enabling it to accept the ultra-high currents required for fast charging, with minimal system overhead.

Herzliya's StoreDot is the pioneer and world leader of extreme fast charging (XFC) electric vehicle batteries that overcome the critical barriers to mainstream EV adoption – range and charging anxiety. The company has revolutionized the conventional Li-ion battery by innovating and synthesizing proprietary organic and inorganic compounds, optimized by Artificial Intelligence algorithms, enabling charging of an EV in under 10 minutes – the same experience as refueling a conventional combustion engine car. (StoreDot 17.01)

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* 1. Elsight Unveils Its Worldwide Halo Drone Communications Platform

ASX-listed Elsight unveiled a worldwide version of its Halo drone communications system which will allow operators to fly anywhere in the world without the need for equipment changes to accommodate different cellular systems. Elsight also gives drone operators the option of using a universal SIM card rather than country-specific SIM cards.

Elsight's Halo creates a single bonded tunnel of the available multi-links from LTE, 5G, SatCom and RF links to assure continuous uptime and connection between a drone (UAV or UAS) and the ground control stations. In stationary, portable, or mobile positions, the Halo can hold up to 4LTE/5G modems and optionally RF and SAT links via an ETH/UART port. This single bonded pipeline magnifies the connection's reliability, while improving data transmission.

Or Yehuda's [Elsight](http://www.elsight.com) delivers Connection Confidence with proprietary bonding technology that incorporates both software and hardware elements to deliver reliable, secure, high bandwidth, real-time connectivity - even in the most challenging areas for stationary, portable, or actively mobile situational requirements. Elsight was founded in 2009, and since has grown to provide robust, secured connectivity to drone manufacturers, operators and integrators globally. (Elsight 16.01)

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* 1. REE Completes U.S. Certification of Full-by-Wire Vehicles

REE Automotive has begun customer deliveries of its P7-C electric chassis cab following Federal Motor Vehicle Safety Standards (FMVSS) and Environmental Protection Agency (EPA) certification, making it the first to certify a fully x-by-wire vehicle. REE is the first to certify a fully steer-by-wire, brake-by-wire and drive-by-wire vehicle. The Powered by REE P7-C medium duty electric commercial truck has met the FMVSS requirements and has achieved EPA approval.

REE has initiated customer deliveries of the first batch of P7-C demonstration trucks for multiple fleet evaluations in North America via its fast-growing Authorized Dealer Network. Pritchard EV, a leading dealer in the U.S., is the first to receive the P7-C demonstration truck for a roadshow with its large fleet customers. Additional REE authorized dealers and leading fleets are expected to receive additional P7-C demonstration units in the coming weeks.

Tel Aviv's [REE Automotive](http://www.ree.auto/) is an automotive technology companq1y that allows companies to build electric vehicles of various shapes and sizes on their modular platforms. With complete design freedom, vehicles Powered by REE™ are equipped with the revolutionary REEcorner, which packs critical vehicle components (steering, braking, suspension, powertrain and control) into a single compact module positioned between the chassis and the wheel. (REE 22.01)

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* 1. Rail Vision Secures Approval and Certifications and for EU Railway Standards

Rail Vision announced that its Main Line system has successfully obtained formal certifications for critical European Union (EU) railway standards, an important achievement that underscores the Company's dedication to quality, safety, and innovation in the railway technology market.

Rail Vision's Main Line system is now certified in compliance with EN 50155, which sets the benchmark for hardware equipment in railway applications, ensuring the robustness and reliability of rolling stock components. This compliance demonstrates Rail Vision's system's ability to withstand the rigorous physical demands of railway operations. Additionally, the system meets the requirements of EN 50126, focusing on the specification and demonstration of Reliability, Availability, Maintainability, and Safety (RAMS). This standard is crucial in the railway industry, as it guarantees that the system can be relied upon for consistent performance and safety. Furthermore, Rail Vision’s system aligns with EN 50657 standards related to software on board rolling stock. This compliance ensures that the software integrated into the Company's Main Line system meets the highest levels of safety and functionality, crucial for the smooth operation of modern trains. The Main Line system also adheres to EN 45545 standards related to fire protection on railway vehicles.

Ra'anana's [Rail Vision](https://www.railvision.io/%E2%80%8E) is a technology company that is seeking to revolutionize railway safety and the data-related market. The Company has developed cutting-edge, artificial intelligence based, industry-leading technology specifically designed for railways. (Rail Vision 22.01)

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* 1. Cognyte New LUMINAR Cyber Threat Intelligence Offering with GenAI Capabilities

Cognyte Software announced the release of a significant update to its LUMINAR external threat intelligence solution to incorporate generative artificial intelligence (GenAI) capabilities, including a new AI-driven dashboard. LUMINAR is already integrated with Cognyte’s investigative analytics software and other leading solutions, and this release brings additional value to current and new customers.

To assist organizations with these resource-intensive tasks, Cognyte has integrated an AI-driven dashboard into its LUMINAR offering, LUMINAR AI Insights. The new AI dashboard is built on Cognyte’s proprietary threat intelligence repository that includes evidence-based threat data regarding global cybersecurity incidents, aggregated over the last 10 years. This feed is now fully automated, structured and auto-enriched through GenAI capabilities, incorporating both proprietary historical data and a daily feed that is automatically customized to the needs of each customer.

Herzliya's [Cognyte Software](http://www.cognyte.com) is a global leader in investigative analytics software that empowers a variety of government and other organizations with Actionable Intelligence for a Safer World. Their open interface software is designed to help customers accelerate and improve the effectiveness of investigations and decision-making. Hundreds of customers rely on our solutions to accelerate and conduct investigations and derive insights, with which they identify, neutralize, and tackle threats to national security and address different forms of criminal and terror activities. (Cognyte 22.01)

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* 1. Veriti Unveils Odin AI-Powered Cybersearch & Remediation Solution

Veriti launched its artificial intelligence (AI) powered contextual cybersearch solution, Veriti Odin. Leveraging advanced AI architecture, Odin is designed to optimize and elevate the way businesses approach cybersecurity, creating certainty that solutions are deployed correctly, and configured accurately, and protecting against threats comprehensively.

Odin's core functionality lies in leveraging cutting-edge Large Language Models (LLM) that are integrated with all security tools for real-time risk analysis and response across the enterprise. The solution excels in correlating, visualizing, and presenting live data, offering a clear and concise overview of an organization's security posture. Its proactive security approach provides a cost-effective solution that closes the cybersecurity skill gap with an AI-powered contextual cybersearch, allowing focused and rapid decision-making.

Tel Aviv's [Veriti](http://www.veriti.ai) is a cybersecurity innovator that helps organizations maximize their security posture while ensuring business uptime. With Veriti, organizations can eliminate complexity and operational friction in managing multiple cybersecurity solutions with a consolidated, governing platform that proactively monitors and in a single click, remediates security gaps across the security fabric. (Veriti 23.01)

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* 1. Sensibo Incorporates an Advanced AI Assistant into Smart HVAC, Powered by ChatGPT

Tel Aviv's Sensibo, a leading Climate Tech IoT company combining smart heating and cooling devices with a more sustainable world, announced the launch of an AI Assistant, powered by OpenAI's ChatGPT, into Sensibo's smart heating and cooling products.

The AI Assistant understands complex requests from the users and reacts to their intentions. Instead of the simple commands that were introduced with traditional voice assistants like Alexa, the new AI assistant engages with the user and reacts: from the simple command "I'm cold" (that will results in the AI assistant turning on heating in desired temperature) to the more complex conversation that sets schedules based on the weather and energy considerations. This functionality empowers Sensibo users to further conserve energy and integrate ChatGPT's capabilities seamlessly into their everyday heating and cooling routines and further enhance the Sensibo user experience.

The Sensibo AI Assistant is powered by Large Language Model (LLMs), representing a significant leap in smart home technology. This advanced system allows users to issue commands to the Sensibo cloud, enabling it to control HVAC devices within their premises. The integration of LLM into Sensibo's AI assistant means that it cannot only understand and process user requests but also take direct actions with connected HVAC systems, offering a more interactive way to manage climate environments. (Sensibo 22.01)

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* 1. Silynxcom Receives $400,000 Follow Up Order from a Leading Global Defense Company

Silynxcom received a follow up purchase order of approximately $400,000 from a leading global defense company. This is the third order Silynxcom has received from this customer for its advanced Clarus In-Ear Headset system family of products, collectively amounting to over $4.5 million.

For over a decade, Netanya's [Silynxcom](https://www.silynxcom.com/) has been developing, manufacturing, marketing, and selling ruggedized tactical communication headset devices as well as other communication accessories, all of which have been field-tested and combat-proven. The Company’s in-ear headset devices are used in combat, the battlefield, riot control, demonstrations and weapons training courses. The Company’s in-ear headsets seamlessly integrate with third party manufactured, professional-grade ruggedized radios that are used by the military, law enforcement, and disaster recovery industry professionals. The Company’s in-ear headsets fit tightly into the protective gear to enable users to speak and hear clearly and precisely while they are protected from the hazardous sounds of combat, riots or dangerous situations. In addition, the Company develops, markets and sells push-to-talk devices, communication controllers, and communication device cables and connectors. (Silynxcom 23.01)

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* 1. InfiniBox SSA II Named Storage Product of the Year 2023 in the Disk Category

Infinidat announced that TechTarget awarded the InfiniBox SSA II system the Gold award as Storage Product of the Year in the disk and disk subsystems category in the 22nd annual product competition. Recognized as one of the world’s best enterprise storage arrays of 2023, the newest model in the InfiniBox SSA family delivers double the usable capacity to extend the top end of this all-flash array and provides a new flexible, scale-up architecture that enables a wider variety of enterprises to harness the power of Infinidat’s state-of-the-art storage technology. This is the third consecutive year that TechTarget has singled out the InfiniBox SSA II for recognition.

The InfiniBox SSA II is the industry’s fastest all-flash storage array with unprecedented 35 microseconds of latency, allowing enterprise customers to obtain optimal application and workload performance, simplify substantial storage consolidation, increase efficiency, and reduce CAPEX and OPEX. Instead of the rack being completely full of SSD (solid-state drive) modules from the start, the newest model of InfiniBox SSA II can be populated according to the requirements of the customer, who can then grow with the SSA II over time, reducing the entry price point for the award-winning InfiniBox SSA II without sacrificing performance.

Herzliya's [Infinidat](http://www.infinidat.com) helps enterprises and service providers empower their data-driven competitive advantage at scale. Infinidat’s software defined storage architecture delivers microsecond latency, 100% availability, cyber storage resilience and scalability with a significantly lower total cost of ownership than competing storage technologies. The company offers an award-winning portfolio of enterprise storage solutions for primary and secondary storage deployments. (Infinidat 23.01)

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* 1. Valens Semiconductor New VA700R Series Capable of 40 Meter Multi-Gig Connectivity

Valens Semiconductor unveiled the VA700R Series, which offers industry leading bandwidth and link distance for long vehicle sensor connectivity. Enabling 4Gbps at distances of up to 40 meters/130 feet, while supplying power and bi-directional control over the cable, the VA700R provides the connectivity infrastructure upon which innovative visibility solutions can be designed for truck drivers.

The VA700R Series – containing the VA7021R Serializer and the VA7004R Deserializer – offers an unprecedented combination of bandwidth and link distances for applications such as surround view and rear-view visibility for medium and long vehicles. The SerDes will support high resolutions, including up to 8MP (4K) cameras operating at 30 frames per second. It is also bit-accurate, making it applicable for ADAS applications. Demonstrations of the VA700R are available today, and engineering samples are slated to be released to customers in mid-2024.

Hod HaSharon's [Valens Semiconductor](https://www.valens.com) is a leader in high-performance connectivity, enabling customers to transform the digital experiences of people worldwide. Valens' chipsets are integrated into countless devices from leading customers, powering state-of-the-art audio-video installations, next-generation videoconferencing, and enabling the evolution of ADAS and autonomous driving. Pushing the boundaries of connectivity, Valens sets the standard everywhere it operates, and its technology forms the basis for the leading industry standards such as HDBaseT and MIPI A-PHY. (Valens 24.01)

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* 1. StePacPPC's New Sustainable Packaging Boosts Exotic Mushroom Longevity

Fresh produce packaging pioneers, Tefen's [StePacPPC](https://www.stepacppc.com/), has customized its award-winning modified atmosphere packaging (MAP) films to preserve fresh whole and sliced white mushrooms, and whole exotic mushrooms, such as oyster, lion's mane, shiitake, portabella and more. The lean MAP system fulfills consumer demands for sustainable packaging that slows deterioration and dramatically reduces waste of this highly perishable item.

StePacPPC's latest advancement in its packaging formats is designed specifically to maintain the freshness of whole and sliced white mushrooms, and whole exotic mushrooms. The customized films significantly slow down decay and reduce weight loss of costly culinary delicacies, preserving texture, nutrition and flavor thereby effectively diminishing a considerable amount of waste and cost.

StePacPPC's packaging first demonstrated its potential for mushroom preservation during the COVID pandemic. Oyster mushroom farmers found themselves with backlogs of produce due to the logistical standstills. StePacPPC's Xtend® bulk packaging solutions were instrumental in helping prolong storage in the cold storage, effectively mitigating waste. Since then, the company has developed Xtend bulk packaging solutions for lion's mane, shiitake and portabella. (StePac 24.01)

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* 1. Cato Networks Introduces World's First SASE-based XDR

Cato Networks announced the expansion of the Cato SASE Cloud platform into threat detection and incident response with Cato XDR, the world's first SASE-based, extended detection and response (XDR) solution. Available immediately, Cato XDR utilizes the functional and operational capabilities of the Cato SASE Cloud to overcome the protracted deployment times, limited data quality and inadequate investigation and response experience too often associated with legacy XDR solutions.

Cato also introduced Cato EPP, the first SASE-managed endpoint protection platform (EPP/EDR). Together, Cato XDR and Cato EPP mark the first expansion beyond the original SASE scope pioneered by Cato in 2016 and defined by industry analysts in 2019. SASE's security capabilities encompassed threat prevention and data protection in a common, easy-to-manage, and easy-to-adopt global platform. With this announcement, Cato is expanding SASE into threat detection, incident response, and endpoint protection without compromising on the architectural elegance captured by the original SASE definition.

[Cato Networks](http://www.catonetworks.com) is the leader in SASE, delivering enterprise security and networking in a single cloud platform. With Cato, organizations replace costly and rigid legacy infrastructure with an open and modular SASE architecture based on SD-WAN, a purpose-built global cloud network, and an embedded cloud-native security stack. (Cato Networks 23.01)

ISRAEL ECONOMIC STATISTICS

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* 1. Israel's Debt:GDP Ratio Moves Above 60%

Until 7 October, Israel's Ministry of Finance expected the economy would end 2023 with a welcome fall of its debt:GDP ratio from 60.5% to 59.5%. But following the war, instead of a 1% fall, the ratio looks set to rise to 62.1%, according to the latest estimate by Accountant General Rothenberg.

This would actually be better than the analysts' predictions of 63%. But the end of 2023 figure would only reflect the initial damage of the war to Israel's economy. The debt:GDP ratio is forecast to continue rising throughout 2024 and the big question bothering the markets and the ratings agency is how high will it go before it stops. In order for the debt:GDP ratio to stop falling the fiscal deficit, currently at 4.2%, needs to narrow to 3%, but according to the revised 2024 budget, it is set to widen to 6.6%. So any recovery is not expected before 2025, in the best case scenario.

At the peak of the COVID pandemic, Israel's debt:GDP ratio jumped from 58.8% in 2019 to 70.7% in 2020. But this time the Accountant General believes that the figure will not reach 70% before the trend is reversed. Israel's debt at the end of 2023 stood at NIS 1.12 trillion, up from NIS 1.03 trillion at the end of 2022 with most of the NIS 90 billion rise due to debt raised because of the war. (Globes 18.01)

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* 1. Israeli Air Traffic Increases by 10% During 2023

Air travel to and from Israel plunged in the last three months of 2023 amid the Hamas onslaught against Israel, but the number of passengers traveling through Ben Gurion International Airport near Tel Aviv still rose 10% in 2023. The number of international travelers reached 21.1 million in 2023, up from 19.2 million in 2022, the Israel Airports Authority (IAA) said. Over the first nine months of the year, before the 7 October massacre by Palestinian Islamist terror group Hamas, passenger traffic surged by an annual 38.5%, to 19.1 million. But since then, traffic has fallen, culminating in a 78% drop in November and a 71% dive in December, the IAA said.

With almost all foreign carriers having halted flights to and from Israel as a result of heavy rocket attacks from Gaza and the war, flag carrier El Al Israel Airlines benefited, with the number of passengers rising 32.5% to 5.5 million in 2023 for a 26.3% market share at Ben Gurion. Wizz Air was the second-largest airline last year with a more than 9% share; passenger traffic was up 35.5% despite the company halting flights in the fourth quarter. Ryanair was third with a 5.4% share, although its number of passengers dipped 12% in 2023.

In December, nearly 80% of passengers flew El Al, followed by smaller Israeli carrier Israir at 10% and FlyDubai at 3.2%. During the month, just seven foreign carriers flew to Israel. At 17%, the United States – mainly via New York’s JFK airport – was the country with the highest volume of activity in December, followed by France and Britain. Airlines such as Lufthansa, Swiss, Austrian, and Aegean have resumed flights to Tel Aviv. Air France and Ryanair are slated to restart soon. In 2023, 3 million tourists visited Israel, up from 2.7 million in 2022. (ToI 21.01)

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* 1. Tech Salaries in Israel Rose in 2023

Despite the war, political rift and high interest rates, Ethosia recruitment agency found salaries rose in 2023. Events such as the hike in interest rates, the judicial reform legislation and the war should have had Israel's tech industry on its knees. New research reveals that in 2023, Israel's tech sector continued to expand with salaries rising for most professionals, or at least not falling. The research found that the average salary in Israel's tech sector rose 3% in 2023 to NIS 30,800, up from NIS 30,000 in 2022. In 2021, when Israel's tech industry was at its peak with large financing rounds, the average salary was NIS 29,100.

A breakdown by positions found that many employees saw their salaries remain unchanged, while others enjoyed a continued rise in their salary slip, despite the so-called crisis. The largest increase in salaries (3.7%) was registered by the senior managers in the industry, with an average monthly salary that reached an all-time high of NIS 54,100, about NIS 10,000 higher than in 2020. Also hardware engineers and software engineers (full stack engineers - specialized programmers in all the complex development tasks) enjoyed an average increase of about NIS 1,000 in their monthly salary in 2023.

On the other hand, project managers, operations and sales employees, saw their salaries remain unchanged last year, after several years of rises. Even human resources managers saw salaries stay unchanged, despite the large fall in hiring and the massive reduction of jobs in 2023. The average salary in the field was NIS 25,500, similar to 2022, despite the cut in the number of jobs from 23,000 in 2022 to 12,700 at the end of last year.

At the end of 2023, out of the overall jobs in the industry, 4,900 new jobs were opened by startups and the rest by medium-sized and big companies - down from 6,300 startup jobs in 2022. The proportion of employees who voluntarily left the workplace fell in 2023 to 9% of all employees in the industry, down from 13% in 2022 and 11% in the peak year of 2021. (Globes 25.01)

IN DEPTH

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* 1. ISRAEL: Israeli Tech Remained Robust in 2023

According to an annual report highlighting activity in Israel's technology sector released on 16 January by Startup Nation Central, a non-profit connecting global solution seekers with Israel's innovators, the Israeli tech sector remained robust despite many disruptions in 2023. The year included the proposed judicial reform and civil unrest, Hamas' heinous terrorist attack on 7 October and the still-raging war, as well as global macroeconomic challenges. The report found that the country's dynamic startup culture, coupled with the steadfast engagement of global players, maintained resilience, and remains the economic anchor of Israel. The report, based on data and insights from its ecosystem business-engagement platform, Finder, anticipates that private funding for Israeli tech in 2023 will reach nearly $10 billion, factoring in undisclosed rounds and historical patterns of delays in publishing rounds. The disclosed funding currently stands at $7.9 billion.

VP of Digital Products and Data, at Startup Nation Central, Yariv Lotan: "Private funding in 2023 declined from the 2021 peak, reaching $7.9 billion to date. The estimated total private funding, including unknown rounds, will amount to nearly $10 billion, similar to 2019 levels. In 2024, 88% of MNCs plan to either sustain or grow their presence in Israel, indicating continued confidence in the ecosystem. However, there is a split in investor sentiment, with 52% predicting a downturn in investments for 2024. Despite this, AI, cybersecurity, and defense tech—are predicted to continue their upward trend."

**Key findings from the report:**

**Private funding core resilience, despite exogenous circumstances:** Amid broader economic uncertainties, the ecosystem's private funding levels have demonstrated notable resilience, comparable to that of the US. Despite an overall decline from the previous year, 2023's private funding is estimated to approach $10 billion, factoring in undisclosed rounds, with disclosed funding totaling $7.9 billion. This resilience is further emphasized as funding levels stabilize to 2019 levels, albeit with fewer rounds, indicating a more discerning yet strong investment environment.

**Seed stage relative tenacity:** In notable contrast to the broader market, seed stage rounds were significantly less impacted by the funding decline that significantly affected A and B rounds. This resilience underscores a keen investor interest in fostering nascent technologies and innovations, ensuring a continuous stream of fresh ventures.

**Public funding steadfastness:** With $1.9 billion, public funding has contracted yet remained robust, indicating enduring investor confidence and a market capable of weathering financial ebbs and flows. Health Tech's doubling in public funding compared to the previous year is a highlight, showcasing the sector's strong recovery and investor interest.

**Foreign investor confidence:** Foreign investors have reinforced their role as pivotal contributors to the ecosystem, with their participation in funding rounds rising significantly. Their sustained investments signify a robust vote of confidence in the long-term prospects of Israel's tech sector.

**M&A activity – signs of rebound:** Mergers and acquisitions have declined by 25% in value from the previous year; however, an end-of-year rebound where the M&A exits reached $1 billion in Q4 indicates resilience and potential for growth. Cybersecurity stands out with M&A exits surging to $2.8 billion, hinting at a sector ripe for investment and innovation.

**Cybersecurity:** The Israeli cybersecurity industry remains robust, securing the highest sector private funding at $1.9 billion and an average round amount of $27 million this year. The 2023 decrease of 45% is lower than the broader ecosystem's 55% decline. Comparing H2 this year to H2 last year, the decrease is only 12.5%, with no change in the average round amount. The sector has been stable since Q3/22. There were 2 very large mega-rounds - Wiz raising $300 million in round D and Cato Networks securing $238 million in round G.

**Health Tech:** The health tech sector, with over 1600 companies (22% of the ecosystem including ~150 mental health and rehabilitation startups), saw a 53% decrease in private investments to $1.4 billion, in line with the broader ecosystem's 55% decline. While the sector demonstrated resilience in the first three quarters of 2023, Q4 experienced a drop in investments.

**Climate Tech and Agri-Food Tech:** Despite a 60% decrease in private funding for the Climate tech and Agri-Food tech sectors compared to last year, mainly due to a particularly strong Q1/22 and a weaker Q4/23, there has been a period of stability in investments from Q2/22 through Q3/23.

These sectors show stability and promise, with Israel leading in sustainable water solutions, alternative proteins, and renewable energies while attracting new accelerators, innovation centers, and incubators for venture cultivation to address climate challenges.

**2024 Expectations:**

Startup Nation Central conducted a survey of investment firms and MNC leaders active in the Israeli tech ecosystem to understand the industry's expectations for 2024 following a turbulent 2023. Key findings include:

* Optimism regarding Israel's resilience and ability to overcome challenges.
* MNCs with a presence in Israel are confident in Israel's tech ecosystem with 88% planning to maintain or expand activity in Israel.
* Investors are not as confident with 52% indicating investments will decrease in 2024.
* Investors did show optimism regarding M&A and IPO activity, with 60% and 54% expecting M&As and IPOs respectively to increase or remain stable in 2024.
* AI and Cyber tech sectors will continue to lead in 2024 with defense tech gaining in prominence.

[Startup Nation Central](https://startupnationcentral.org/) helps global solution seekers tackle complex challenges by giving them frictionless access to the expertise and solutions of Israel's problem solvers - and their bold and determined approach to innovation. Their free business engagement platform, Finder, grants unrestricted access to real-time, updated information and deep business insights into the Israeli tech ecosystem, explore potential opportunities, and forge valuable business connections. (SNC 16.01)

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* 1. ISRAEL & SOUTH KOREA: A Growing Partnership

Efraim Inbar and Jakob Rheins posted in the [Middle East Quarterly](https://www.meforum.org/) that the parallels between the predicament of Israel and the Republic of Korea are considerable. Both face existential threats on their borders. Though both states are democracies, the commonalities between them run deeper. Both are relatively young countries born out of conflict. Both exist under threats from their respective neighbors from inception. Both suffered periods of isolation in world politics, yet despite heavy economic burdens due to many security challenges, both managed to build a vibrant democracy and a prosperous economy. Both countries maintain the most vital asset one can provide to the United States: strategic relevance. Both states' economies are export-oriented. A bolstered relationship with Seoul, which is relevant and useful to American interests, serves Israel's strategic interest.

Considering North Korea's role in exporting missile technologies to Syria and Iran, its nuclear proliferation role, and its training of Palestinian terrorists, Israel has developed a special interest in the Korean Peninsula. North Korea has also helped Hezbollah and there is evidence of North Korean assistance in building tunnels exposed in 2006.

Having formally begun their relationship in April 1962, the connection between Israel and South Korea has continued to improve, culminating in 2022 in a free trade agreement (FTA). Israel and South Korea enjoy a mutually beneficial partnership predicated on similarities in their geopolitical challenges, such as a hostile environment, the nuclear threat, the relationship with their US ally, make or buy dilemmas in weapon procurement, and their economic interactions.

Israel first opened its embassy in Seoul in 1964. Shortsightedly, Israel then closed the embassy in 1978 as part of the budgetary cuts in the Foreign Ministry. However, in the wake of the Gulf War and to accommodate Washington's recommendations, Israeli-South Korean relations resumed in 1992 at the ambassadorial level and South Korea opened its embassy in Tel Aviv two years later.

While Israel and South Korea are strong military powers, both tried to solve their ongoing regional conflicts peacefully at the end of the last century. Israel tried via the Oslo process, while South Korea practiced the Sunshine Policy toward North Korea. Interestingly, Israel, under Yitzhak Rabin even tried to change North Korean behavior in the Middle East. These attempts failed. Israel and South Korea remained aware that they must have the military capabilities to deal with their respective conflicts should they intensify.

Their separate political biographies are conducive to a better mutual understanding and cooperation. In 2014, South Korea's former ambassador to Israel, Lee Gun-Tae, told visiting Israeli president Reuven Rivlin: "South Korea is probably the only country that can understand Israel's complicated situation." Rivlin replied: "Until I came to Seoul, I thought there was only one miracle, Israel, and then I saw what you have done since the 1950s." Rivlin was the first Israeli president to visit South Korea. He expressed his hope for closer cooperation and bilateral tourism. Indeed, nearly 10 years later, the two countries are more intimate than ever.

This article analyzes the parallels between the predicament of Israel and the Republic of Korea. It looks first at the geopolitical situation, followed by an analysis of their current relations with their main ally, the United States. Subsequently, the significance of the nuclear threat is assessed, and the role of military industries is reviewed. Finally, the bilateral economic arena is presented.

**The Geopolitical Predicament**

The historical background of both countries intensifies their threat perception: both South Korea and Israel have faced events that have called into question their very survival as states within living memory. These form a prism through which contemporary threats are viewed. The opponents of both countries continue to entertain hopes for achieving politicide, i.e., destroying their states: Many of Israel's Arab and Muslim foes remain not ready to accept a Jewish state. Instead, they desire Israel's demise. In recent years, Iran too has presented an existential challenge due to its theological opposition to the existence of the Jewish state and its nuclear aspirations.

Similarly, the North Korean regime wants the South Korean state to disappear so that it can take over its territory and unite the peninsula under its rule. The Soviet Union then, and today Russia, has backed North Korea. China, an ascendant global power, is also a patron.

The most notable existential threat to South Korea comes from its northern border. In addition, its economic relationship with China puts South Korea in an uncomfortable geopolitical position. China is a major market for South Korea's exports, and in 2021, imported about $196.2 billion from South Korea, accounting for about 30% of South Korea's total exports. That, in turn, has created a dependency on China at a time when the United States, Korea's ally, and China are competing for regional influence.

China is also an important market for Israel, accounting for 8% of total exports and 14% of all imports in 2021. Yet its civilian exports do not constitute a point of friction with the US. Rather, Israel's export of potentially dual-use items irks Washington, as well as infrastructure projects built by Chinese firms. As a result, Israel established a more rigorous mechanism in recent years to monitor economic interactions with Chinese firms that could attract American criticism.

The changing international landscape dominated by China-US competition introduces new national security challenges for Jerusalem. It is unclear whether Israel retains its strategic value to the US, which is pivoting in its geostrategic focus to Asia. This leaves Israel alone to face the Iranian threat. The China-US competition also negatively affects South Korea, which is militarily dependent upon America and China for its economic prosperity. Nevertheless, the United States' increased threat perception of Chinese encroachment brings its Asian allies that share this concern closer to Washington.

The decreased American interest in the Middle East threatens the stability of the region's energy routes and is conducive to closer relations between Israel and South Korea. South Korea imports 93% of its energy from abroad, including 58% of its oil supply from the Middle East. In 2021, the total cost of its energy imports, which accounted for about 22% of South Korean imports that year, amounted to $137.2 billion. As one of the world's top consumers of Middle Eastern oil, South Korea has a stake in the region's stability. It currently enjoys a strong relationship with the states whose energy it needs and has, in turn, been a vital economic partner for countries like the UAE. As a result of the Abraham Accords and Israel joining CENTCOM, as well as the perceived American decreased profile, Jerusalem is increasingly viewed as a potential security provider in the region. Israeli and South Korean interests converge in this respect.

**Relationship with the US**

The United States plays a great and complicated role in the affairs of both Israel and South Korea. As a global economic, political and military hegemon, being seen as a valuable partner of the United States is important for small countries like Israel and South Korea. Washington shields the two states in diplomatic multilateral fora. Moreover, the strong relationship with the US enhances deterrence. The presence of US soldiers in the Korean peninsula at the demilitarized zone (DMZ) along the border with North Korea, reinforced by a defense treaty, has a powerful effect.

In contrast, Israel's national security doctrine stresses self-reliance and not requiring a US military presence for its defense. Nevertheless, Israel is the beneficiary of substantial American arms and foreign aid. As part of the 2016 Memorandum of Understanding between the United States and Israel, Jerusalem receives $3.8 billion each year (which must be spent in the United States) and receives additional sums allocated by Congress for special projects.

Despite the United States being the first country to recognize Israel in 1948, the special relationship between the United States and Israel began to develop only after Israel's victory in the 1967 Six Day War over Arab Soviet clients. After the Soviet Union disintegrated, radical Islam became the main enemy of America. In this struggle, Israel, due to its location and acquaintance with the Arab and Muslim world, remained a key strategic asset. The amount of aid the United States renders to Israel reflects its strategic value to the United States as a strong democratic stronghold in a region mired with unrest but of importance to the United States.

The United States is formally committed to preserving Israel's Qualitative Military Edge (QME), which entails the transfer of advanced technologies and weapon systems. An important example was the sale of the American F-35 Stealth Fighter to Israel, the first American partner to receive one. The transfer of American weapons to Israel makes the IDF–which continuously engages in military conflict–an important laboratory for American arms. Israeli upgrades to American weapons systems and intelligence-gathering capabilities benefit Washington enormously. Furthermore, the United States invests in Israeli pioneering military technologies, such as developing the ballistic missile defense system (Arrow 2, 3 and David's Sling).

Regarding South Korea, the United States constitutes its main buffer against North Korean aggression. Since the signing of the Mutual Defense Act at the end of the Korean War in 1953, the United States has maintained a military presence in South Korea to deter and fight with the South Korean army against a military invasion.

While South Korea is a sovereign country, it owes much of its current success to the United States security umbrella. Though it does not receive direct American foreign aid like Israel does, the massive deployment of American military resources to the country, which between 2016 and 2019 cost the American government $13.4 billion, has helped Seoul carry the defense burden. Moreover, the United States intervened militarily to defend its independence against North Korean and Chinese invasions.

Since the Korean War, the American government has supported Seoul and created the context for its development into the economic power it is today. For example, during the 1990s, South Korea received about $62 billion in foreign direct investment from American businesses, which helped support the struggling South Korean economy. Furthermore, during the Asian Financial Crisis of 1997, the United States advocated on its behalf to the IMF to help save South Korea's economy.

Israel's and South Korea's dependence on the United States has also led to significant tension between Washington and Jerusalem, and Seoul. For example, former South Korean president Park Chung Hee initiated in the 1970s what was South Korea's first attempt to build a nuclear option. This undertaking began in part because of fears of abandonment by the United States. In 1970, President Richard Nixon withdrew 20,000 of the 63,000 American servicemen stationed in South Korea. Even after Seoul stopped its nuclear program in 1976, bowing to US pressure, tensions worsened as President Jimmy Carter withdrew the 2nd Infantry Division and the US's nuclear weapons.

President Donald Trump's efforts to create a dialogue with North Korea upset the South Korean government. Trump had accused the South Korean government and many others of not paying their fair share to maintain the American military forces serving outside of the United States. Former president Moon Jae-in, who helped broker the meetings between North Korea and the United States, was upset by Trump's perceived favoritism of North Korea over South Korea. Since President Joe Biden took office in 2020, he has sought to reverse Trump's Korea policy and maintain an open dialogue and close partnership with South Korea without embracing President Kim Jong Un.

Israel too has had moments of tension with Washington. In 1956, the US lambasted the Israeli, British and French invasion of the Suez Canal Zone. During the 1967 Six Day War, tensions were inflamed as the IAF mistakenly attacked the USS Liberty, an American spy ship. In 1975, President Ford threatened to withhold support for Israel unless it withdrew from the Sinai Peninsula, which it had conquered from Egypt in 1967. During the First Lebanon War in 1982, President Ronald Reagan heavily criticized the Israeli government for using American weapons. President George H. W. Bush threatened not to approve loan guarantees unless Israel stopped settling Jews in Judea and Samaria.

Today, Washington is displeased with Israel's and South Korea's policies toward the Ukraine conflict. Fortunately for both South Korea and Israel, their respective periods of tension with the United States were temporary speed bumps in what have been productive and mutually beneficial relationships. Such strains are typical of great power-small ally relationships.

Amid its fear of abandonment and the uncertainty regarding the long-term commitment of the United States to South Korea, President Yoon Suk Yeol put forward in January 2023 the idea of unilaterally developing nuclear capabilities to limit his country's dependency upon US extended nuclear deterrence. In response, Biden called South Korea the "linchpin of regional security and prosperity" and assured that an attack from North Korea would "result in the end" of that regime. Yet America's partners around the world surely understand that a promise from a president is not ironclad.

Despite being occasionally reassured by the United States of continuous support, Israel and South Korea also strive to maintain the most vital asset one can provide to the United States: strategic relevance. At different periods in history, the focus of the United States has shifted from one part of the world to another. As the United States ends its War on Terrorism in the Middle East, its focus has shifted to Asia, toward China's rising power. South Korea most likely benefits greatly from the increased attention the United States grants its region. Given the already extensive American assets in South Korea, they will certainly remain relevant during the China-US rivalry.

Though it is unlikely that the US-Israel special relationship will end soon, Israel has shifted its diplomatic focus to Asia to stay strategically relevant to America and benefit from the partnership with a global power. Much more is needed. That is the context that the Israel-South Korea relationship can best be understood. A bolstered relationship with South Korea, which will be relevant to American interests, serves Israel's strategic interest.

**The Nuclear Threat**

The threat of nuclear weapons has been a central concern for South Korea as the North Korean regime has ignored every international prohibition to develop atomic capabilities. Despite harsh sanctions and diplomatic efforts by Western countries to disarm North Korea, it has built nuclear weapons. Moreover, despite what seemed to be a pause in long-range ICBM testing during the Trump administration, Kim continues to test new, advanced ballistic missiles, thereby threatening the US and its allies in the region. For example, North Korea successfully launched a Hwasong-18 solid-fuel ICBM in April 2023. While North Korea has made a show of launching missiles for years, its development of an advanced ICBM is of great concern. Despite the clear threat on its northern border, South Korea decided not to prevent by force the development of North Korean nuclear weapons, given Seoul's dependence on United States military support, which objected to a military strike.

In the 1970s, as South Korea feared abandonment by the United States, it sought to build a nuclear deterrent. In addition to conducting independent research under what was then known as "Project 890," South Korea negotiated with both France and Canada to buy a reprocessing plant that would allow it to separate plutonium (fissionable material suitable for a nuclear bomb). The United States blocked the sale and threatened to pull out even more soldiers and resources from South Korea if it continued to pursue a nuclear program. By 1978, it was clear that Seoul would receive no foreign aid for its atomic program, and Project 890 died.

Some voices in South Korea have argued that the peninsula's unification will finally award their country nuclear weapons. However, given that the reunification of the Korean Peninsula looks unlikely in-the-near future, one can understand the recent suggestion by President Yoon that South Korea may need to renew a nuclear weapons program. Indeed, Seoul is questioning the credibility of the American nuclear-extended deterrence after North Korea achieved an atomic arsenal. The United States responded to the Korean fears. For example, on 26 April 2023, Biden lauded the US relationship with South Korea and assured South Korea that it would be absorbed into the American nuclear umbrella. While the United States hopes this sentiment will assuage South Korea's fears of abandonment, it may not be the long-term solution for which South Korea is hoping.

Israel successfully developed a nuclear option in the 1960s despite American attempts to interfere. It adopted a posture of ambiguity, formally denying the existence of nuclear weapons. To counter the threat of atomic weapons, Israel took unilateral actions. For instance, in 1981 and 2007, the Israeli Air Force successfully struck Iraqi and Syrian nuclear facilities. This idea of Israel unilaterally stopping its enemies from developing WMDs is known as the Begin Doctrine. To date, Israel has failed to follow this doctrine in its ongoing conflict with Iran and now faces a serious nuclear threat. The different approaches to the Iranian nuclear threat of Washington and Jerusalem are a sore point in American-Israeli relations.

South Korea failed to prevent North Korea from developing WMDs and, as a result, now faces a nuclear North Korea across the DMZ. The threat of an atomic North Korea has not been felt just by South Korea. North Korea has worked with other rogue states with nuclear ambitions, specifically Syria and Iran.

North Korea helped provide Syria with a nuclear reactor before the Israeli Air Force destroyed it in 2007. North Korean ballistic missile experts were sent to Syria to facilitate the development of its missile program. North Korea assisted Iran in developing its nuclear and ballistic missile programs for years. North Korea's close partnership with these states that pose the greatest direct threats to South Korea and Israel is highly troubling. Iran is much farther from Israel than North Korea is from South Korea, but it still threatens both states' interests. China also shares responsibility for the proliferation of missile and nuclear technology in the Middle East. It is hard to believe that the mischievous North Korean role in transferring destabilizing technologies to Iran and Syria happened without China looking the other way.

In addition to South Korea's concerns about Iran as a partner and ally of North Korea, its interest in helping stop Iran's rise to hegemony in the Middle East also reflects its own interests in the Middle East. South Korea's reliance on Middle Eastern energy and the presence of 25,000 South Koreans who work in the region makes the threat of a nuclear Iran problematic. North Korea constitutes a challenge (albeit of a different order) for the two countries. They obviously share intelligence about the North Korean terrorist threat and its Middle East activities. Therefore, close cooperation between Israel and South Korea provides each with a partner that has a stark understanding of the threat its enemies pose to their state's survival, an existential threat with which the United States can empathize but cannot fully appreciate.

**The Make or Buy Dilemma**

One area where Israel and South Korea have sought to work independently is weapons development and manufacturing. Having relied on American military support for most of its history, South Korea succeeded in developing a remarkable arms industry and became a weapons exporter. That reflects in part its desire to reduce dependency upon the United States. Nevertheless, both continue to purchase weapons from the United States because it is less expensive and more expedient than manufacturing indigenous-made weapons that still would have to be integrated with American-supplied weapon systems.

Though it does not host a US military base, the United States stores equipment in Israel and reportedly has an early warning system in the Negev. Nothing like South Korea, but a presence is still signaling at least some continued commitment. Israel has received billions of dollars in military aid and the latest military hardware from the United States. In parallel, Israel has made a name for itself as a global leader in weapons exports. It has used that to develop closer diplomatic ties with Asian countries that, like South Korea, hope to modernize and expand their military capabilities outside the American market.

Israel has also been at the forefront of modern military technology, notably cybersecurity and missile defense. Having dealt with larger militaries, Israel had to focus on better technology to compensate for the quantitative inferiority. The United States recognized this fact and decided to aid Israel in maintaining its qualitative military edge by selling advanced weapons and by allowing in the past a portion of the aid to be channeled to Israel's military industries. The United States and Israel have benefited greatly from Israel's need to maintain its QME. Despite having a developed military industry, Israel has been a great customer of American arms for decades and still relies on the United States for much of its advanced hardware. However, having previous periods of frustration with each other, Israel prioritizes its ability to develop weapons technology independently.

An important example of why this is easier said than done is the IAI Lavi fighter jet project. In the 1980s, IAI began production on this fighter jet to be incorporated into its air force. However, the endeavor was very costly, and the quality of the plane itself would not have come to par with the fighter jets produced and sold by the United States at the time. The Lavi shows the limitations of small states in building large platforms. The Lavi jet reflects the pressure that countries dependent on arms sales from the United States, like Israel and South Korea, experience. Being reliant on a foreign power to provide security is risky, given that the provider may freeze arms transfers and military cooperation over a political disagreement, thereby putting the supplier country at a significant advantage.

Regarding the making vs buying dilemma, South Korea has made a concerted effort in recent years to develop its military-industrial infrastructure. In 2020, the South Korean government launched the Defense Reform Plan to make South Korea, like Israel, a notable weapons exporter and a strong, self-dependent military power. In 2022, South Korea exported $17.43 billion in defense technology, a 140% increase. That aligns with Yoon's goal of having South Korea become the world's fourth-largest weapons exporter by 2027. For example, in 2022, South Korea signed an agreement with Poland to see the Eastern European country obtain tanks, fighter jets, howitzers and multiple rocket launchers. These deals with Poland amounted to approximately $12.4 billion, which may grow as Poland tries to modernize its army. In 2022, South Korea also set a global record for the most expensive defense sale when it sold the Cheongung II midrange SAM system to the UAE for $3.5 billion.

South Korea's defense companies were ranked in the top 100 defense companies of the world according to The Defense News Top 100 list of military industries. A similar achievement was part of the Israeli weapon system producers.

Biden has sought to include South Korea as a direct supply chain partner for NATO weapons, a prospect that certainly would boost the South Korean defense export industry well into the future. All these profitable developments for the South Korean defense industry have aligned with Yeol's goal of becoming a global defense exporter and are helping shift the country away from being wholly reliant on the United States for its military needs. While South Korea has become more ambitious in its weapons manufacturing and export industry, it may find that the United States is less eager and willing to continue providing the same level of security it has since the 1950s. South Korea is now paying more to maintain the American military forces stationed in South Korea. However, becoming military independent of the United States would be massively expensive.

From 2016-2019, the United States spent $13.4 billion to maintain its forces in South Korea. While South Korea has contributed around $1 billion-$1.5 billion each year to help cover the costs, the American government can threaten to withdraw its forces if it feels that it is being taken advantage of, as it has previously done. Countries like Israel and South Korea aim to balance their relationship with the United States to benefit from the US's weapons industry while pursuing independent research and development to help their domestic military sector. A good example of this comes amidst the supply chain issues that have plagued Western countries as they supply weapons and armaments to Ukraine. While the United States military does not buy South Korean weapon systems, it views them as an ever more important part of its military supply chain and has continued to purchase South Korean manufactured materials like artillery shells to maintain its supply. Similarly, Washington pressures Israel to supply Ukraine with certain weapon systems.

**Economics**

Israeli-South Korean economic cooperation might be bolstered by the 2022 FTA. In 2021, the total value of goods and services traded between Israel and South Korea surpassed $3.5 billion, a 35% increase from 2020. This trade comprised about 2.26% of Israel's exports in 2021 and 31% of South Korea's export. These figures will probably increase due to the newly signed FTA.

Both states' economies are export-oriented. Israel, with a small domestic market, seeks overseas markets. Its immediate region, the Middle East, does not always welcome Israeli goods, and its purchasing power is limited. In contrast, South Korea's main economic partners are China (including Hong Kong), Vietnam, Japan, Taiwan, India and Singapore. Together, these countries account for 52% of South Korea's exports in 2021. By contrast, Israel's trade within the Middle East accounted for about 7% of its total exports in 2021. Based on these figures, it is an economic imperative for Israel to find trade partners with large purchasing power outside of its region.

Israel exported over $1 billion worth of goods and services to South Korea in 2020 (before the FTA was signed in 2022). While Israel has a trade deficit with South Korea, Seoul has a higher purchasing power than Israel's neighbors. Korean cars comprised roughly 40% of South Korean exports to Israel in 2020. Trade between Jerusalem and Seoul has grown 4.37% annually since 1995. Furthermore, having paused during the epidemic, direct flights between Tel Aviv and Seoul have resumed with three flights per week. This more convenient means of travel for Israelis and Koreans will boost tourism, an industry important to Israel's economy.

In addition to South Korea, Jerusalem is trying to forge stronger ties with other Asian countries, including India, Japan, China, Singapore and Vietnam, all of whom trade close to or more than $1 billion with Israel. These relationships are predicated on the economic growth of many Asian countries and the relative advantages of Israel's products. Enhancing their military capabilities in a region where threat perception from China has increased is also a factor in buying Israeli products. Like Israel, South Korea's top trading partners are the United States and China.

About 30% of South Korean exports go to China (including Hong Kong), as opposed to 16% to the United States. The well-being of South Korea's economy is tied to the success of China. If pushed into a corner, it is unclear how South Korea will act when confronted with potentially upsetting China, its main economic partner. That could paralyze more than a quarter of its economy if areas China could easily control, like Hong Kong or Taiwan – comprising an additional 10% of South Korean exports–are included. It is precisely because of dilemmas like this that the value of a relationship with Israel, a strong independent country outside of Asia, is important.

While South Korea's relationship with the United States is complicated by its large trade with China, South Korea's economic involvement with countries outside Asia has been crucial for diversifying its economy. The Middle East, for example, has been one of the regions outside of Asia where South Korea has found much success. In addition to having a central role in the Middle East construction boom of the 1970s and 1980s, about 25,000 Korean nationals still live and work in Middle Eastern states.

Exports to the Middle East have proved valuable for the South Korean economy. In 2021, South Korea exported about $3.5 billion to Saudi Arabia, $7.5 billion to Turkey, and $4.1 billion to the UAE. While this may look positive for Seoul, they have significant trade deficits with all these countries except Turkey. This trade deficit is due to South Korea's imports of Middle Eastern energy.

For example, Saudi Arabia imported about $3.5 billion worth of goods from South Korea in 2021 while exporting $24 billion in the same year to South Korea. Similarly, South Korea exported $4 billion to the UAE while importing $7 billion and exported $458 million to Qatar while importing $9.3 billion. Though much of the world relies on renewable energy, these trade statistics show that South Korea has a massive trade imbalance in the Middle East largely due to its reliance on Middle Eastern energy.

According to the South Korean Foreign Ministry, South Korea imports about 93% of its energy, including about 60% of its oil, from Middle Eastern countries. This accounts for 22% of all South Korean imports and amounts to a total value of $137.2 billion annually. South Korea partially prioritizes its relationship with Middle Eastern states due to its dependence on Middle Eastern oil. Furthermore, South Korea's connection to these Middle Eastern countries may bolster the South Korean-Israeli partnership. As a result of the Abraham Accords, many of these countries have normalized relations with Israel. Therefore, closer Israeli-South Korean economic cooperation will likely continue through their mutual trade partners in the Middle East, an idea underscored by the signing of the Israel-South Korea FTA in 2022.

**Conclusion**

The relationship between Israel and South Korea has not always been smooth, yet both states have realized the benefits of befriending one another. Both countries face a hostile geopolitical environment with significant military and political challenges. South Korea faces an increasingly strong and bold North Korea. Israel faces terrorist groups, Iran, and Iran proxies like Hezbollah, all seeking the Jewish state's destruction. Just as Israel and South Korea deal with significant defense concerns, having a partner like the United States helps provide much-needed military and economic opportunities. The United States relationship with Israel and South Korea is unique, yet both serve important roles in American grand strategy.

The Israel-South Korea relationship is also predicated on economic cooperation, especially with other Middle Eastern countries. While South Korea has lucrative trading opportunities in its region, its reliance on Middle Eastern energy necessitates maintaining strong ties with the countries with whom Israel has started normalizing relations and trade. The 2022 FTA between Israel and South Korea further underscores the importance each country places on the other and the mutual goal to develop their partnership further, despite the distance between the two countries being a constraining factor in the bilateral relationship.

Interestingly, what also brings the two countries together is the South Korean keen interest in Talmudic studies. There is widespread appreciation of Jewish intellectual achievements and Talmud--a fundamental Jewish text--has become a popular study subject and a part of the curriculum in the South Korean education system.

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* 1. QATAR: Moody's upgrades Qatar to Aa2, changes the outlook to stable

On 25 January, [Moody's Investors Service](http://www.moodys.com/) upgraded the Government of Qatar's local and foreign currency long-term issuer and foreign currency senior unsecured debt ratings to Aa2 from Aa3. Moody's also upgraded Qatar's foreign currency senior unsecured medium-term note program rating to (P)Aa2 from (P)Aa3. The outlook has been changed to stable from positive.

The upgrade reflects Moody's view that the significant improvement in Qatar's fiscal metrics, achieved during 2021-23, will be sustained in the medium term. This view is underpinned by Moody's expectation that the government will continue to maintain fiscal prudence, including by continuing to wind down its infrastructure spending program, while the large ramp-up in Qatar's liquid natural gas (LNG) production, scheduled and on track for 2026-28, will boost growth, government revenue and exports.

The stable outlook balances the downside risk of a material fiscal deterioration in a scenario where hydrocarbon demand and prices decline significantly and durably, potentially as a result of a more rapid global carbon transition than Moody's currently assumes, against the upside risk related to potentially faster and more significant progress on economic and fiscal diversification than Moody's currently expects. Longer-term risks related to carbon transition are balanced by the fact that Qatar has time, institutional capacity and financial resources to diversify its economy and, in turn, the government's revenue base, and will therefore be able to manage the impact of a structural decline in hydrocarbon demand and prices. Near-term risks related to elevated regional geopolitical tensions are balanced by the government's very large stock of financial assets, which are available to buffer temporary disruptions in exports and government revenue and to stabilize Qatar's balance of payments even in a very low-probability scenario where maritime traffic through the Strait of Hormuz is blocked due to an escalating regional conflict.

Qatar's local currency (LC) and foreign currency (FC) country ceilings have been raised to Aaa from Aa1. The LC ceiling, two notches above the Aa2 sovereign rating, reflects predictable institutions, effective policymaking, and moderate political risk that is set against heavy reliance on a single revenue source and the government's relatively large footprint in the economy. The FC ceiling at Aaa, in line with the LC ceiling, reflects extremely low transfer and convertibility risks given the central bank's robust foreign exchange reserves and Moody's view that Qatar's very large sovereign wealth fund assets could also be used to support the balance of payments if needed.

**RATINGS RATIONALE**

**Rationale for the Upgrade to Aa2 from Aa3: Fiscal Strength Metrics Likely to Remain Very Robust in the Medium Term**

Moody's expects that the significant improvement in Qatar's debt burden and debt affordability metrics, which was achieved during 2021-23, will be sustained and likely improved upon in the medium term. In the agency's baseline scenario, which assumes that oil prices average around $83/barrel in 2024, $79/barrel in 2025 and then gradually decline toward $65/barrel in the medium term, Qatar will continue to post robust fiscal surpluses, averaging around 4.5% of GDP in the next five years, and its government debt will gradually decline below 30% of GDP (100% of revenue) by 2028 from an estimated 41% of GDP (135% of revenue) in 2023 and its peak of 73% of GDP (222% of GDP) in 2020. Meanwhile, Moody's expects that Qatar's interest payments will decline to around 4% of revenue (1% of GDP) by 2028 from an estimated 4.9% of revenue (1.5% of GDP) in 2023.

This expectation incorporates Moody's view that the government will continue to maintain current spending growth broadly in line with growth in non-hydrocarbon nominal GDP, while continuing to gradually wind down its infrastructure spending program. This view is supported by Qatar's solid record of fiscal policy effectiveness, which has been demonstrated through fiscal spending restraint in the face of the revenue windfall during 2022-23 and by the government's decision to use a portion of its surpluses to repay debt. Underscoring this record, the approved 2024 budget plan targets capital spending that is 8.3% lower than the 2023 target and 16.9% lower than the actual spending outcome in 2022. The 2024 budget target for current spending is 5.3% higher than last year's budgeted amount and only 3% higher than the 2022 execution.

Furthermore, the expectations of robust medium-term fiscal performance takes into account a 62% ramp-up in Qatar's LNG production capacity, which is scheduled and on track for 2026-28 and is set to significantly boost nominal GDP and government revenue while further reducing the oil price at which the budget (and the current account) would balance. Moody's therefore projects that in the next 3-5 years the government will be able to maintain robust fiscal surpluses even at lower prices than in the past, facilitating further reduction of government debt.

In this context, Qatar's exceptionally high per-capita income and its very small share of citizens in total population and labor force (only 5.7% of the working-age population in 2021), both of which jointly underpin the absence of tangible social pressures, reduce the likelihood that the government would need to increase spending significantly even if non-hydrocarbon sector growth moderates in the coming years, possibly as a result of reduced infrastructure spending.

**RATIONALE FOR THE CHANGE OF OUTLOOK TO STABLE FROM POSITIVE**

**Large Sovereign Financial Buffers Mitigate Geopolitical Risks and Heavy Reliance on Hydrocarbons**

At the new, higher rating level, Qatar's stable outlook balances credit risks stemming from its heavy reliance on the hydrocarbon sector and its susceptibility to geopolitical risks against ongoing diversification efforts, which raise a prospect of a faster than currently expected reduction in Qatar's economic and fiscal dependence on oil and gas revenue. The stable outlook also takes into account the government's access to very large financial assets, which provide a credible buffer against cyclical or structural declines in global hydrocarbon demand and prices and against potential temporary disruptions to hydrocarbon exports, such as due to an escalation in regional geopolitical tensions which could include a very low-probability scenario that maritime traffic through the Strait of Hormuz is blocked. All of Qatar's exports currently pass through the Strait.

Moody's estimates that the total assets managed by the government's sovereign wealth fund (Qatar Investment Authority, QIA) were equivalent to around 200% of GDP at the end of 2023, of which around three-quarters were invested abroad and account for the bulk of the government's financial assets that support fiscal strength. Moody's also estimate that up to 120% of GDP equivalent of these assets is liquid and available to support balance of payments and government liquidity needs on a relatively short notice, as demonstrated during 2017 when the QIA and the central bank brought on shore around $40 billion (25% of GDP) worth of foreign currency assets to mitigate a sudden outflow of non-resident bank deposits triggered by the embargo from several neighboring Gulf Cooperation Council (GCC) states. While Moody's expects intra-GCC relations to remain benign, following their full normalization since early 2021, QIA assets stand ready to support Qatar's macroeconomic and financial stability against a variety of external shocks and mitigate the exposure to risks posed by the Qatari banks' large (albeit declining) net foreign liability position equivalent to 47% of GDP at the end of 2023.

The stable outlook also reflects Moody's view that Qatar has both time and institutional capacity and ample financial resources to accelerate its diversification efforts if needed. Around 70-75% of Qatar's hydrocarbon export mix (which is set to increase during 2026-28) is accounted for by LNG, the demand for which is likely to peak significantly later than demand for other fossil fuels due to the use of LNG as a transition fuel away from significantly more polluting primary energy sources such as coal and crude oil.

**Factors That Could Lead To An Upgrade Or Downgrade Of The Ratings**

Significant progress in advancing economic and fiscal diversification, thereby reducing the sovereign's exposure to longer-term credit risks related to global carbon transition, would exert upward pressure on the credit profile, provided it is not accompanied by material deterioration in fiscal strength. Upward pressure would also arise from a significant and durable reduction in regional geopolitical risks that would allay concerns about possible disruptions to maritime traffic through the Strait of Hormuz.

Significant deterioration in Qatar's fiscal metrics, resulting from a large and durable shock to global hydrocarbon demand and prices or from a shift away from the government's prudent fiscal policy stance, would likely exert negative pressure on the rating. A prolonged disruption of maritime traffic through the Strait of Hormuz, compromising Qatar's ability to export its hydrocarbon output, would also exert negative pressure on the sovereign's credit profile. (Moody's 25.01)

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* 1. OMAN: IMF Executive Board Concludes 2023 Article IV Consultation with Oman

On 23 January, the Executive Board of the [International Monetary Fund (IMF)](http://www.imf.org/) announced it concluded the Article IV consultation with Oman.

Supported by favorable oil prices and sustained reform momentum, Oman’s economic recovery continues while inflation remains contained. The economy grew by 4.3% in 2022, primarily driven by the hydrocarbon sector, before slowing down to 2.1% (year on year) in the first half of 2023 on the back of OPEC+-related oil production cuts. Non-hydrocarbon growth accelerated from 1.2% in 2022 to 2.7% in the first half of 2023, driven by recovering agricultural and construction activities and robust services sector. Subsidies on basic food items, caps on domestic petroleum prices, and the peg to a strong US dollar helped contain inflation, which receded from 2.8% in 2022 to 1.2% during January-September 2023.

Prudent fiscal management and high oil prices have helped turn fiscal and external balances into surpluses since 2022, with the overall fiscal balance estimated at 5.5% of GDP and the current account balance at 2.8% of GDP in 2023. Notwithstanding the hydrocarbon windfall, the non-hydrocarbon primary deficit remained on a downward trajectory, attesting to the authorities’ commitment to fiscal discipline. Central government debt as a share of GDP declined from about 68% in 2020 to 38% in 2023. Oman's sovereign credit rating has been upgraded to one notch below investment grade and its sovereign spreads have become broadly at par with the average for Gulf Cooperation Council countries and well below that of emerging markets.

The banking sector remains resilient. Profitability has recovered to pre-pandemic levels, capital and liquidity ratios are well above regulatory requirements, and non-performing loans remain low and sufficiently provisioned. Stress tests suggest that banks are resilient to credit and liquidity shocks.

Risks to the economic outlook are balanced. On the upside, growth would be supported by higher oil prices—that could be triggered by supply and demand imbalances—and an acceleration of Vision 2040 reform plans and investments from regional partners. A faster global disinflation process resulting in global monetary policy easing could also support domestic growth by strengthening external demand. On the downside, a sharp decline in oil prices, including from a deeper-than-expected economic deceleration in China, would depress growth and have an adverse effect on fiscal and external accounts. A slowdown in the implementation of the reform agenda also represents a key risk to the outlook. The uncertainty around the outlook is exacerbated by potential indirect spillovers from the Hamas attacks on Israel.

**Executive Board Assessment**

Executive Directors agreed with the thrust of the staff appraisal. They commended the authorities’ macroeconomic management and broad reform efforts, supported by favorable oil prices that contributed to further strengthening of the fiscal and external positions, preserving financial stability, and lowering public debt amid heightened global uncertainty and recurrent shocks. While noting that the outlook remains favorable and risks are balanced, Directors emphasized the importance of continuing the implementation of reforms to entrench fiscal sustainability and ensure intergenerational equity, while safeguarding financial stability and accelerating economic diversification.

Directors welcomed the authorities’ continued commitment to prudent fiscal management while strengthening the social safety net, including through the new social protection law. They underscored the importance of pursuing the ongoing tax administration reform program and phasing out untargeted subsidies as critical measures to further enhance fiscal sustainability. Directors also highlighted the importance of strengthening and institutionalizing the medium-term fiscal framework. Enhancing the transparency of fiscal accounts, expanding their coverage, and disclosing fiscal risks while developing a sovereign asset liability management framework would be key actions to take going forward.

Directors agreed that the exchange rate peg continues to serve Oman well as a monetary anchor. They stressed that measures to strengthen the monetary transmission mechanism should continue to ensure that institutions are in place to support a more independent monetary policy regime in the future. In this context, Directors emphasized the importance of sustaining the progress under the Monetary Policy Enhancement Project.

Directors welcomed the continued resilience of the banking sector, while indicating that further efforts are needed to strengthen the regulatory framework to cement financial stability. They encouraged the authorities to return the capital conservation buffer to pre-pandemic levels, re-assess the list of domestic systemically important institutions, and further enhance the AML/CFT framework. They also underscored the importance of further developing the financial sector to enhance access to finance and support economic diversification, including through enhanced digitalization while being mindful of associated risks.

Directors welcomed the progress on the ambitious structural reform agenda under Oman Vision 2040 and its goals to promote sustained, diversified, inclusive and private sector-led growth. They commended the authorities for the passage of the new labor law and encouraged them to continue enhancing labor market flexibility and empowering women. Pressing ahead with improving institutional quality, reducing the state footprint, enhancing the business environment, while maintaining the commitment to the ambitious climate agenda and investing in renewable energy would foster economic diversification and facilitate a smooth energy transition.

It is expected that the next Article IV consultation with Oman will be held on the standard 12-month cycle. (IMF 23.01)

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* 1. EGYPT: Moody's Changes Outlook on Egypt to Negative

On 18 January, [Moody's Investors Service (Moody's)](http://www.moodys.com/) has today changed the outlook on Government of Egypt to negative from stable and affirmed the Caa1 long-term foreign and local currency issuer ratings. Moody's has concurrently affirmed Egypt's foreign-currency senior unsecured ratings at Caa1, and its foreign-currency senior unsecured MTN program rating at (P)Caa1. In addition, Moody's has affirmed the backed senior unsecured ratings of the Egyptian Financial Corporation for Sovereign Taskeek sukuk company at Caa1 and its program rating at (P)Caa1 which are, in Moody's view, ultimately the obligation of the Government of Egypt.

The change in outlook to negative reflects increasing risks that Egypt's credit profile will continue to weaken amid difficult macroeconomic and exchange rate rebalancing, despite continued fiscal consolidation efforts and official sector support. Since the rating agency's last rating action in October 2023, a significant increase in interest payments (projected to consume two thirds of revenue at the end of fiscal 2024) and mounting external pressure (with the gap between the official and parallel market exchange rates widening further) have complicated the macroeconomic adjustment process. Even with an anticipated increase in financial support from the IMF and the government's continued commitment to primary surpluses, the negative outlook reflects the risk that policy actions and external support may prove insufficient to prevent a debt restructuring given Egypt's very weak debt metrics and elevated exposure to foreign exchange and interest rates risks, even though a restructuring in the near term is not Moody's current baseline expectation.

The affirmation of the Caa1 rating captures the government's track record of fiscal reform implementation capacity that Moody's expects will unlock an enhanced financial support package from the IMF and other official lenders, and the potential for it to mitigate higher debt affordability and balance of payment risks. A large domestic funding base helps mitigate domestic refinancing risks, despite large local currency rollover needs.

The local-currency ceiling is unchanged at B1, and the foreign-currency ceiling at B3. The three notch gap between the local-currency ceiling and the sovereign rating reflects a large and diversified economy with a large public sector footprint that generates significant financing requirement that inhibits private sector development and credit allocation, notwithstanding recent reforms to level the playing field with public sector entities. The two-notch gap between the foreign currency and local currency ceiling reflects transfer and convertibility risks given persistent foreign exchange shortages and weakening policy effectiveness.

**RATINGS RATIONALE**

**Rationale for the Change in Outlook to Negative: Weakening Key Metrics Flag Increased Risks Of Sharper Adverse Effects Of Renewed Macro Rebalancing**

The further deterioration in government debt affordability and rising external pressure have complicated Egypt's macroeconomic adjustment, increasing risks that Egypt's credit profile will continue to weaken. Moody's anticipates that the authorities will remain committed to fiscal consolidation and that continued support from multilateral and bilateral partners will be forthcoming. Nonetheless, these recent developments raise the adjustment costs from macroeconomic and exchange rate rebalancing on Egypt's credit profile, increasing downside risks. While a debt restructuring in the near term is not Moody's current baseline expectation, the risks have increased in Moody's view, despite an anticipated increase in financial support from the IMF and the government's continued primary surpluses, given Egypt's very weak debt metrics and elevated exposure to foreign exchange and interest rates risks.

Since the rating agency's last rating action in October 2023, the parallel market rate has further weakened reflecting persistent FX shortages that intensify convertibility risks. From a parallel rate at EGP40/$1 at the time of the downgrade to Caa1, the currency has further depreciated to EGP59/$1 compared to the official rate at EGP30.9/$1. This points to the potential for even sharper macro rebalancing requirements than projected in Moody's central scenario. Persistent FX shortages coincide with peak external debt service payments in fiscal 2024 and fiscal 2025, indicating potentially larger external refinancing risks in case of a sharper devaluation than estimated in Moody's baseline scenario at the Caa1 rating level, and higher future credit risk in the absence of increased FX generation capacity.

Monthly FX liquidity indicators show that, despite the $4 billion in asset sales achieved since July 2023, liquid FX reserves (gross reserves minus gold) have remained stable at just below $27 billion at the end of December while the monetary system's net foreign liability position (comprising that of both the central bank and commercial banks) has not improved as expected, pointing to the existence of an FX backlog. Moreover, the recent intensification of regional hostilities in the wake of the 7 October attacks on Israel add to Egypt's balance of payment risks by impacting the economy's key FX generating sectors, including the travel industry and Suez Canal revenues that have hitherto largely compensated for the continued slump in current transfers and remittances from abroad as a result of incentive distortions created by the existence of the parallel currency market.

On the fiscal side, budget execution data for July to December 2023, i.e. the first half of fiscal 2024 (ending in June 2024), shows a much sharper-than-expected deterioration in debt affordability as measured by interest/revenue, increasing fiscal accounts' shock exposure and lifting the share of revenue dedicated to interest payments to levels which in the past have proven unsustainable for many sovereigns. The government's full-year projection for interest/revenue in fiscal 2024 has increased to almost 65%, from 52% in the original budget, and to about 10% of GDP from 7.7% recorded in fiscal 2023. Although the government has a track record of managing high interest payments, these levels far exceed previous instances and increase fiscal accounts' sensitivity to future shocks in the context of the government's macroeconomic rebalancing under the IMF program. In Moody's view, they also point to complex policy decisions about prioritizing interest payments at the expense of essential social spending, notwithstanding the large domestic funding base that mitigates debt rollover risks.

**RATIONALE FOR THE Caa1 RATING AFFIRMATION**

The affirmation of the Caa1 rating captures the government's track record of fiscal reform implementation capacity that Moody's expects will help unlock an enhanced financial support package from the IMF and other official lenders to backstop the implementation of the previously stalled $3 billion 46-month External Fund Facility (EFF) program approved in December 2022, of which only $347 million was disbursed. Moody's expects the completion of the first and second reviews in coming weeks to be accompanied by renewed adjustment in the official exchange rate and by tighter fiscal and monetary policies, with the ultimate objective to remove the macroeconomic distortions created by the parallel currency market.

Benefiting from the 50% proportional quota increase approved by the IMF in November 2023 that broadens the government of Egypt's borrowing space from the IMF, Moody's assigns a high likelihood to a program enhancement to up to $10 billion from the previously approved $3 billion EFF. This amount broadly covers Moody's estimated external funding gap in fiscal 2024 and 2025, assuming a current account deficit of about 2% of GDP in both years, helping to mitigate higher debt affordability and balance of payment risks.

On the domestic side, in contrast to lower-rated sovereigns with similarly weak debt affordability trends, Egypt's credit profile benefits from a large and dedicated domestic banking sector with assets at almost 130% of GDP to meet the government's large financing needs at over 30% of GDP annually generated by large T-bill rollover needs as a result of the shift to short maturities in a high interest rate environment. However, the shift to primarily short-term funding limits the government's funding base and makes it highly susceptible to shifts in market conditions as a result of the projected macroeconomic rebalancing.

**FACTORS THAT COULD LEAD TO AN UPGRADE OR DOWNGRADE OF THE RATINGS**

**Factors That Could Lead to an Upgrade**

Confidence in the ability of the government to generate necessary foreign exchange inflows, e.g. with the privatization program or enhanced external financial support, to meet increasing external debt service payments and bolster the economy's foreign exchange liquidity would likely prompt a change in the outlook to stable. A marked and durable improvement in debt affordability, including via higher revenue generation, would engender confidence in Egypt's ability to navigate continued FX pressure and the difficult decisions on prioritization of government spending, paving the way for a return for the outlook to stable. In addition, signs of a rebalancing in banks' net foreign asset position would also help return the balance of risks to stable.

**Factors That Could Lead to a Downgrade**

Persistently weak debt affordability that undermines confidence in the government's capacity to service its local currency debt stock would likely lead to a downgrade, as would an inability to reduce foreign exchange shortages via improved FX generation capacity or an inability to strengthen FX buffers to meet external debt service payments on a sustainable basis. Reduced confidence in the government's ability to reduce the very high interest bill without a debt restructuring would also lead to a downgrade. (Moody's 18.01)

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* 1. EGYPT: Egypt has a Water Scarcity Problem

Enterprise noted on 30 January that Egypt faces an annual water deficit of around 7 billion cubic meters and could see its water resources run out by 2025, according to a 2021 UNICEF report. On top of this, the interrelationship relationship between water, food and energy means that water scarcity issues can have serious knock-on effects on the country’s food security, public health, and renewable energy ambitions, says an Egypt-focused report by the British government’s development finance institution British International Investment (BII).

**The Nile is shrinking:** By 2030, Egypt is expected to import more freshwater — through virtual water trade — than the volume of locally supplied water from the Nile, said a Carnegie Endowment for International Peace report. Sea level rises and seawater intrusion into the Nile have already begun to deplete the river’s freshwater supply and cause the river to shrink 3-5 mm per year.

Climate change is damaging Egypt's agricultural sector. Egypt’s food production could decline by 5.7% by 2050, a higher share than the 4.4% decline projected for the rest of the world, says the World Bank’s 2022 Egypt Country Climate and Development report. Increasingly frequent droughts are projected to reduce irrigated land in Egypt by 22%, productivity per irrigated hectare by 11% and agricultural employment by 9%, the report adds.

**Demographic factors compound the issue:** Egypt’s current population growth projections — which stood at 1.6% per year in 2022 — and water resource trends indicate that by 2033 Egypt will reach the absolute water scarcity threshold — which the UN defines as 500 m³ per person per year — the World Bank said. Water share has fallen 60% since the 1980s in Egypt to 663 m³, according to data from the German Academic Exchange Service.

**So, Where Does Egypt Stand on Combating Water Scarcity?**

Egypt needs to identify the risks to water scarcity and input “system-wide” solutions that increase private sector financing within the water sector in order to build climate adapted and resilient water systems, writes BII.

Increasing private sector involvement in Egypt’s water sector via public-private sector partnerships (PPPs) will mobilize multiple financing streams for climate-resilient infrastructure as well as standalone interventions and the introduction of new technologies, writes BII, pointing to costly, large-scale projects such as network digitalization, lining water canals, integrating solar energy into irrigation, establishing wastewater reuse to electricity infrastructure, improving water and wastewater plant efficiency, and increasing the uptake of digital precision agriculture.

Venture capital firms and local commercial banks are better placed to make decentralized investments in demand-side management interventions such as implementing efficient irrigation systems in farms, sensor activated water taps in hotels and restaurants, and digital residential water meters in homes, says BII. The most climate-resilient strategy will include a diverse set of approaches alongside national projects such as renewable energy-powered desalination and water and wastewater treatment plants, agrees the World Bank.

Regulations will calm nervous private sector investors. “Policy and regulatory frameworks can help attract private investment,” argues the BII. The UK-government backed impact investor added that these frameworks should be designed around the entire water value-chain to enable standalone projects to “respond to climate risks” and “contribute to system-wide resilience.” The International Cooperation Ministry has secured funding of $2.3 billion through its Nexus for Water, Food and Energy (NWFE) program, which will go towards supporting its $1.4 billion water resource development strategy.

Egypt’s NWFE program aims to integrate climate-related issues within the water, food, and energy sectors and mobilize financing for projects that cross the three pillars. The program wants to reduce Egypt’s emissions levels, improve air quality, and ensure access to reliable and clean energy sources, all in line with the country’s nationally determined contributions (NDCs).

Newer power plants are already using more water-efficient options. Egypt’s three Siemens-built power plants have all introduced measures to reduce the use of fresh water for cooling, writes the International Energy Agency (IEA) in its 2023 Climate Resilience for Energy Transition in Egypt report. The 4.8-GW Beni Suef power plant — which is up for a sale under the government’s privatization program — has a closed-loop cooling tower system that reuses cooling water. Similarly, the New Administrative Capital Power Plant adopted an air-cooling system with 12 giant fans, the first of its kind in the country. Another power plant in Burullus has wet cooling towers that use water from the Mediterranean Sea instead of freshwater.

Egypt has also signed a food security partnership with the Republic of Congo that will see Egypt invest in the cultivation of 20k hectares of arable land in Congo’s water-abundant Mossendjo, in exchange for 60% of its wheat and rice yields. (Enterprise 30.01)

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* 1. GREECE: IMF Executive Board Concludes 2023 Article IV Consultation with Greece

On 23 January, the Executive Board of the [International Monetary Fund (IMF)](http://www.imf.org/) concluded the Article IV consultation with Greece and endorsed the staff appraisal without a meeting on a lapse-of-time basis.

Greece’s economic outlook has improved notably. After a strong post-pandemic recovery, economic activity remained robust with real GDP growth projected at 2.3% in 2023 and 2.1% in 2024. Private consumption will be supported by positive real wage growth while investment will continue to expand with the implementation of the National Recovery and Resilience Plan supported by Next Generation EU funds. Headline inflation is forecast to reach 2% by end-2025 as pressures on core inflation will dissipate only gradually despite continued normalization of energy and food prices.

The banking system has remained resilient underpinned by balance sheet strengthening. Asset quality further improved with the Non-Performing Loan ratio declining below 5% in systemically important banks. Higher net interest margins have contributed to a strong rebound in bank profits and bolstered capital adequacy. The banking system also maintains sizable liquidity buffers despite substantial repayments of ECB’s targeted long-term refinancing operations (TLTRO).

Risks are more balanced for growth but tilted upward for inflation. A potential escalation of Russia’s war in Ukraine and the Conflict in Gaza and Israel could disrupt trade and trigger renewed energy and food price pressures and undermine confidence. In contrast, acceleration of ambitious structural reforms, in tandem with stronger-than-expected market reactions to the recent investment grade upgrade, could further improve growth prospects. Inflation could remain high, for example, as the result of pressures from recent and expected wage and pension increases and weather-related shocks.

**Executive Board Assessment**

In concluding the 2023 Article IV Consultation with Greece, Executive Directors endorsed staff appraisal as follows:

Greece’s economic outlook has improved notably but significant challenges remain. Real GDP is expanding beyond its pre-pandemic trend level, driven by strong tourism recovery and strengthening investment catalyzed by NGEU funding and FDI inflows. Strong growth and high inflation have brought the public debt-to-GDP ratio down below its pre-pandemic level with limited financing risks in the medium term due to the favorable debt structure. However, structural imbalances arising from low household savings and still low level of investment as well as increasing risks from climate change are weighing on medium-term growth prospects. The external position in 2023 is assessed to be weaker than that consistent with medium-term fundamentals and desirable policies. The assessment was done with preliminary current account data for 2023.

Risks are more balanced for growth but tilted upward for inflation. A potential escalation of Russia’s war in Ukraine and the conflict in the conflict in Gaza and Israel could disrupt trade and trigger renewed energy and food price pressures and undermine confidence. Higher-than-expected persistence in euro area inflation and higher-for-longer interest rates would weigh on regional and domestic demand. In contrast, acceleration of ambitious structural reforms could further improve growth prospects. Inflation could remain high resulting from weather-related shocks as well as domestic pressures from recent and expected wage and pension increases.

Growth-friendly fiscal consolidation can further strengthen public debt sustainability while supporting inclusive and green growth. Further tightening in the near term and maintaining a primary surplus in the medium term would help further strengthen public debt sustainability while limiting additional pressure on inflation. For green and inclusive growth, fiscal policy should emphasize public investment, including green investment, and critical social spending such as healthcare and education. Advancing further fiscal structural reforms, including the ongoing efforts to address tax evasion, would enhance fiscal governance and improve the efficiency of fiscal policy.

The resilience of the financial system should be further strengthened in an environment of higher-for-longer interest rates. The monitoring and management of risks associated with interest rates, liquidity and funding, and credit exposures should be further strengthened. Temporarily elevated bank profits should be used to build capital buffers and improve the quality of capital. The activation of a positive neutral countercyclical capital buffer would help banks guard against potential systemic shocks. Borrower-based measures for mortgage loan borrowers—such as caps on loan-to-value and on debt service-to-income ratios—would enhance household resilience and consequently contain vulnerabilities in the banking system.

Comprehensive reforms to address structural supply impediments would lift medium-term growth prospects amid a negative demographic outlook. Continued reforms in digitalizing public administration and tackling barriers to more competition would unlock higher private investment and improve productivity. Ensuring higher labor participation and a better skilled workforce would raise labor market dynamism while further facilitating digitalization and the green transition. Strengthening judicial system reforms and out-of-court proceedings would contribute not only to improving business dynamism and productivity but also to increasing financial sector resilience by further reducing bank NPLs and distressed debt recovered by credit servicers.

Concerted efforts are needed to achieve the authorities’ ambitious climate goals and facilitate the green transition. Given the dominance of fossil fuels in energy supply, a strong implementation of the authorities’ policy framework for renewables, including measures to streamline the licensing framework for new investment and better integrate renewables in an upgraded electricity grid, would accelerate the progress while boosting energy security. The authorities should consider raising the carbon pricing (including excise and feebates) in non-ETS sectors such as transport to further incentivize rapid and efficient green transition as energy price continues to normalize. (IMF 23.01)

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