PLANETech
Climate Change Technologies

THE NATIONAL PROGRAM FOR ECONOMIC GROWTH

Israel's AI & Data Centers – Scaling Innovation for Global Leadership and Economic Growth

December 2025

ISRAEL INNOVATION INSTITUTE

Consensus Business Group

Israel's AI & Data Centers –

Scaling Innovation for Global Leadership and Economic Growth

December 2025

Authored by Dr. Yaroslav Efimov
Head of Science and Technology,
PLANETech

Contact information for follow-up inquiries:
contact.planetech@israelinnovation.org.il

About PLANETech

We serve as an innovation community, accelerating the development of advanced technologies through market-building programs, startup-industry collaborations, and global partnerships. Our work spans ecosystem mapping, open innovation calls, regulatory engagement, international deployment, etc. PLANETech connects startups, investors, corporates, governments and other stakeholders to drive strategic growth in climate tech and critical infrastructure domains. PLANETech is a joint venture of Consensus Business Group and the Israel Innovation Institute.

www.planetech.org

About the National Program for Economic Growth (NPEG)

The National Program for Economic Growth is a government initiative led by the Ministry of Economy and Industry and implemented by the Growth Administration in collaboration with the Joint (JDC) Tevet. Its mission is to accelerate economic growth in Israel by supporting high-potential industries and scaling workforce capabilities. The Growth Administration serves as the executive arm for this national effort, working closely with the private sector, academia, and civil society to promote inclusive, innovation-driven growth.

www.israelgrowth.org.il

Foreword

The rapid growth of artificial intelligence is reshaping not only the global economy, but also the physical infrastructure on which it depends. Data centers — once seen as background utilities — are now emerging as strategic assets at the intersection of energy, innovation, and national resilience. As demand for high-performance compute, electricity, water, and critical materials accelerates, countries must make deliberate choices about how and where to invest.

This paper was developed to help Israel rise to this moment.

We believe Israel can lead in building the next generation of sustainable, secure, and innovation-driven digital infrastructure. The country holds a unique set of assets: world-class research institutions, deep-tech capabilities in energy and water technologies, and a globally recognized entrepreneurship engine. But leadership will not emerge by chance — it must be built through coordinated action, strategic investment, and forward-looking policy.

The insights and recommendations in this paper were shaped through roundtables with partners, industry dialogues, and policy reviews. Together, they point to a clear opportunity: to anchor AI infrastructure in national priorities and unlock growth across advanced industries — from semiconductors and energy to water reuse and cybersecurity.

At PLANETech, identifying emerging markets for climate-aligned innovation is one of several areas we focus on. This paper reflects that dimension of our work, highlighting how Israeli technologies can shape the future of data centers infrastructure and AI.

We hope this paper serves not only as a roadmap, but as a call to action — for startups, corporates, government, and investors to come together and build Israel's advantage in the age of AI.

Rotem Trivizki
Director, PLANETech

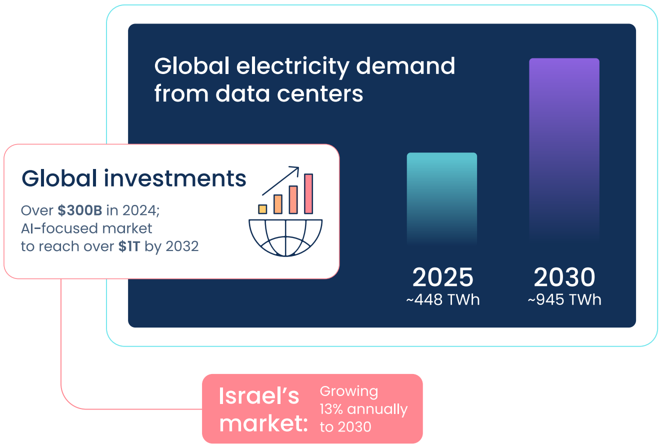
Executive Summary

Artificial intelligence (AI) has transformed data centers from background IT infrastructure into strategic industrial assets — critical not only for digital services, but for national energy grids, economic competitiveness, and innovation ecosystems.

Global electricity demand from data centers is expected to more than double, reaching around 945 TWh by 2030. AI is the main reason for this increase, with the U.S. leading the surge[1]. In the U.S., data center electricity use has grown from 60 TWh in 2014 to 176 TWh in 2023, and could reach 325–580 TWh by 2028 depending on GPU and cooling choices[2].

To keep up, data centers are evolving. AI clusters now need 30–120 kW per rack, liquid cooling is becoming standard, campuses are growing in size, and facilities are increasingly grid-interactive. At the same time, regulators are focusing on energy, water use and heat reuse. Countries like Singapore, Germany, and the EU now link market access to proven energy, water, and heat performance[3].

This growth is not just about energy and infrastructure — it's also about economic opportunity. In 2024 alone, over $300 billion was invested globally in data centers, with leading investors including cloud giants (like AWS, Microsoft, and Google), sovereign wealth funds, and private equity firms. The market for AI-focused data centers is expected to reach over $1 trillion in total value by 2032, covering everything from power and cooling systems to land, equipment, and real estate[4].



1. International Energy Agency. Energy and Artificial Intelligence: Towards Sustainable Data Centers. Paris: IEA, 2025; https://www.iea.org/reports/energy-and-ai
2. 2024 United States Data Center Energy Usage Report. Shehabi, A., Smith, S.J., Hubbard, A., et al. Berkeley, CA: LBNL, December 2024. LBNL-2001637; https://escholarship.org/uc/item/32d6m0d1
3. Green Data Centre Roadmap. Singapore: IMDA, 2024; https://www.imda.gov.sg/resources/press-releases-factsheets-and-speeches/factsheets/2024/charting-green-growth-for-data-centres-in-sg;

   Directive (EU) 2024/1275 of the European Parliament and of the Council of 13 May 2024 on energy efficiency (recast). Official Journal of the European Union, L 157, 20.5.2024; https://eur-lex.europa.eu/eli/dir/2024/1275/oj ; Energieeffizienzgesetz (EnEfG) – Energy Efficiency Act. Bundesgesetzblatt, 2023; https://www.gesetze-im-internet.de/enefg/
4. AI Power: Expanding Data Center Capacity to Meet Growing Demand. McKinsey Technology, Media & Telecommunications Practice, October 2024; https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/ai-power-expanding-data-center-capacity-to-meet-growing-demand;

   Israel Data Center Portfolio – Market Report. Arizton, 2024; https://www.arizton.com/market-reports/Israel-data-center-portfolio

Where Israel Stands Today.

Israel has over 30 active data centers, with many more in development. Several are Tier III/IV underground campuses built for high resilience (e.g., MedOne, Bynet)[5]. The Government's AI Program has launched a project for a national AI supercomputer to support startups and researchers — a key step to address the current compute shortage[6]. Israel's data center market is forecast to grow at 13% annually through 2030, driven by strong cloud and colocation demand[7].

Yet this momentum is only part of the picture.

The Untapped Potential.

Israel can play a much bigger role in the global data center boom — not only as a host for compute capacity, but as a global supplier of enabling technologies. The AI infrastructure market is rapidly expanding, and every new campus — in the U.S., Europe, Asia, or Africa — depends on solutions in energy supply and storage, cooling, water reuse, grid integration, monitoring, cybersecurity, and advanced chips. These are all areas where Israel has world-class capabilities.

But to capture this opportunity, innovation must be steered in the right direction. To capture this global opportunity, Israel can deploy some innovation tools that other countries already use to guide new technologies from lab to market and tie them to real-world results:

- National testbeds for startups to run quick, low-friction trials of early-stage technologies
- Co-funded pilot programs inside live data centers, enabling startups to demonstrate technologies at full scale with real operational data
- Performance-based incentives for data centers, where operators receive financial benefits only when they achieve verified improvements in efficiency
- Binding efficiency codes for energy, water, and heat reuse, including minimum thresholds

For example, the EU requires annual reporting from large facilities into a central database. Germany sets binding Power Usage Effectiveness (PUE), Water Usage Effectiveness (WUE) and waste-heat thresholds. Singapore only approves new capacity if data centers proposals meet strict cooling and energy efficiency standards[8].

5. Israel Data Center Market – Growth, Trends, and Forecasts (2024–2029). Mordor Intelligence, 2024 ; https://www.mordorintelligence.com/industry-reports/israel-data-center-market;
   Company Website and Data Center Overview. Bynet, 2024–2025; https://bynetdcs.co.il
6. Israel launches tender for national AI supercomputer to support startups and researchers. Reuters, 2024; https://www.reuters.com/technology/artificial-intelligence/israel-build-supercomputer-keep-pace-global-ai-race-2024-06-26/
7. Israel Data Center Market – Growth, Trends, and Forecasts (2024–2029). Mordor Intelligence, 2024 ; https://www.mordorintelligence.com/industry-reports/israel-data-center-market
8. Directive (EU) 2024/1275 the European Parliament and of the Council of 13 May 2024 on energy efficiency (recast). Official Journal of the European Union, L 157, 20.5.2024; https://eur-lex.europa.eu/eli/dir/2024/1275/oj ;
   Energieeffizienzgesetz (EnEfG) – Energy Efficiency Act. Bundesgesetzblatt, 2023; https://www.gesetze-im-internet.de/enefg/;
   Green Data Centre Roadmap. Singapore: IMDA, 2024; https://www.imda.gov.sg/resources/press-releases-factsheets-and-speeches/factsheets/2024/charting-green-growth-for-data-centres-in-sg

Israel can turn its strengths in energy, water innovation, and deep-tech into a new strategic growth engine by:

- Exporting Israeli innovation across the global data center value chain — from advanced chips, energy generation and storage, and next-gen cooling systems to AI-optimized software and infrastructure management tools

- Upgrading domestic data centers to top-quartile efficiency and resilience, aligned with global best practices

What Can Be Done.

By creating the right conditions for innovation and efficiency, these tools can attract global capital, scale Israeli technologies, and turn the data center sector into a new economic growth engine — generating high-value jobs, export revenue, and long-term competitiveness.

Israel can adopt a set of targeted, modular tools —innovation testbeds, co-funded pilots, outcome-based incentives, and performance standards — each designed to unlock private investment, accelerate deployment, and deliver measurable results.

These mechanisms can be implemented independently or combined, depending on national priorities and available resources.

Below, these mechanisms are grouped by function — governance, innovation support, financial incentives, and regulation — to provide a clear overview of the available tools. Each is described in greater detail in the corresponding chapters of this report, along with international examples and implementation pathways.

1. Governance & Market Transparency

- Launch a national "Data Center Spark" Hub to develop and manage rules, track metrics, and run programs
- Publish a clear Israeli Data Centers Code: including disclosure rules and baseline efficiency thresholds
- Create a public dashboard and vendor pre-qualification lane to speed up adoption of verified technologies
- Open a Hyperscaler Council to share upcoming specs and reduce barriers

2. Innovation Acceleration Tools

- Quick Tests (Technology Readiness Level (TRL) 3—4): Short technical tests for startups with trusted labs to check if solutions are basically working
- Targeted Proof of Concept (POC) Grants: Fund small-scale POCs in key areas like energy production and storage, cooling, water, and heat management
- Pilots with Data Center Operators: Co-funded, in-production pilots inside live Israeli data centers (e.g., 50:50 split) with independent measurement and verification

3. Outcome-Based Incentives

Financial instruments that reward data center operators only after achieving verified results:

- Tariff credits for grid flexibility, renewable energy mix
- Rebates for efficiency (PUE, WUE)
- Payments for verified heat reuse
- Tax relief to speed up and de-risk early investments

These tools reward solutions that deliver real savings and performance, and make new technologies economically attractive and scalable.

4. Regulation & Permitting

- Require annual disclosure (PUE, WUE, renewable energy share, etc.)
- Set realistic minimum standards (e.g., PUE ≤ 1.25; water and heat limits)
- Fast-track permits for high-performing projects

This package is already working abroad. It supports faster growth, clearer rules, and better outcomes.

Final Word.

Israel has the talent, the technologies, and the urgency. With global hyperscalers expanding in-country and demand for compute infrastructure accelerating, this is a rare moment to shape a new industrial pillar for the Israeli economy.

By adopting performance-driven, modular tools, Israel can unlock a full innovation loop: clear rules » testbeds and pilots » independently verified results » trusted procurement pathways » private and public capital.

This approach will generate tangible national benefits:

- Billions in export potential: The global market for AI data centre is projected to exceed $1 trillion by 2032. Israel is well-positioned to capture a significant share through innovation and commercialization
- Foreign investment attraction: Hyperscaler Capital Expenditures (CAPEX), infrastructure funds, and climate-aligned investors are actively seeking markets with clear standards and innovation pipelines. Countries that can offer reliable deployment environments are absorbing $300+ billion/year in new investment flows
- A robust governmental push can transform Israeli innovation into globally deployed solutions — unlocking new revenue streams across and anchoring Israel as a competitive exporter in the fast-growing data centers infrastructure economy.

This isn't just about keeping pace — it's about turning innovation into a growth engine.

Israel can capture global opportunities in energy, cooling, water reuse, and cybersecurity

Adopt tools: National testbeds, co-funded pilots, performance incentives, efficiency codes

Benefits: Billions in exports, foreign investment attraction

1. Global Context: AI Infrastructure & Investment Surge

AI is turning data centers into a strategic, energy-intensive sector. Over the past two years, the global pace of development has surged. Graphics Processing Unit (GPU)-based clusters for AI training and inference are reshaping how facilities are designed, where they are built, and how they connect to power grids. The International Energy Agency (IEA) estimates that electricity use by data centers will more than double by 2030 — reaching around 945 TWh, up from a few hundred TWh in the early 2020s. AI is the main reason for this increase[1].

> **"AI is the main reason for this increase... data centers will more than double by 2030 — reaching around 945 TWh"**
>
> — IEA, 2025

This projection matches U.S. trends. A recent federal report shows U.S. data center electricity use growing from 60 TWh in 2014 to 176 TWh in 2023 (4.4% of national electricity). It could reach 325—580 TWh by 2028, depending on AI hardware adoption and cooling systems[2].

The rise of accelerated AI servers is at the core of this trend. These systems already use a large share of server energy, and their share is growing fast. Their power demand per unit is rising faster than gains in chip or system efficiency. As a result, rack power levels are increasing, liquid cooling is becoming standard, and top-tier data center campuses now exceed 100—300 MW in size[3]. Market analysts report over 12.5 GW under construction and another 66.2 GW planned globally, with power access now the main siting challenge in top urban areas[4].

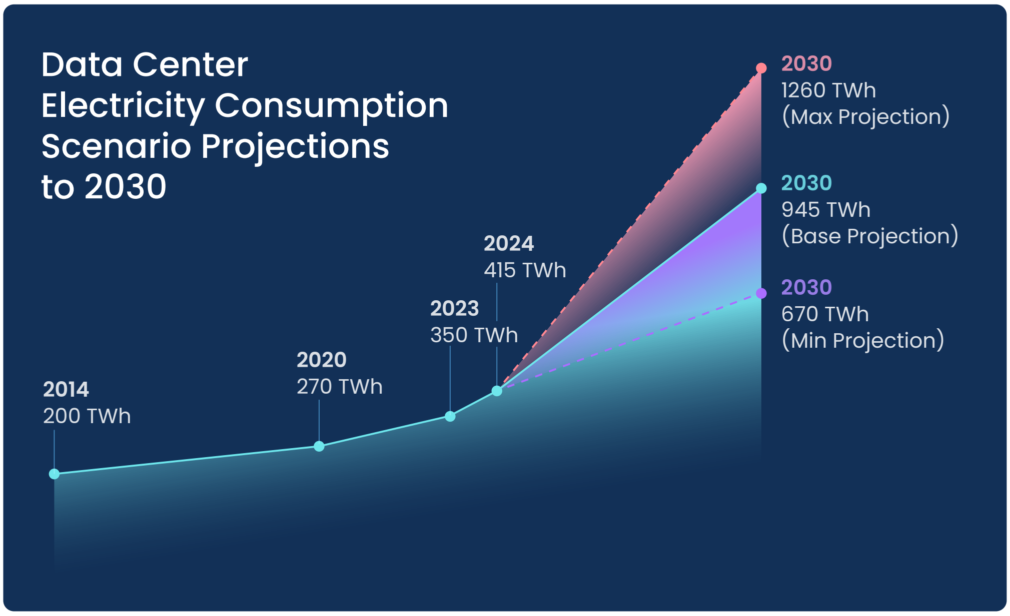
1. International Energy Agency. Energy and Artificial Intelligence: Towards Sustainable Data Centers. Paris: IEA, 2025; https://www.iea.org/reports/energy-and-ai

2. 2024 United States Data Center Energy Usage Report. Shehabi, A., Smith, S.J., Hubbard, A., et al. Berkeley, CA: LBNL, December 2024. LBNL-2001637; https://escholarship.org/uc/item/32d6m0d1

3. Deloitte Insights (2024) — Ramachandran, K.; Stewart, D.; Hardin, K.; Crossan, G.; Bucaille, A. As generative AI asks for more power, data centers seek more reliable, cleaner energy solutions (TMT Predictions 2025). 19 Nov 2024 ; https://www.deloitte.com/us/en/insights/industry/technology/technology-media-and-telecom-predictions/2025/genai-power-consumption-creates-need-for-more-sustainable-data-centers.html

4. Cushman & Wakefield (2025) — 2025 Global Data Center Market Comparison. 7 May 2025 ; https://cushwake.cld.bz/globaldatacentermarketcomparison-05-2025-global-central-en-content

Figure 1: Global Data Center Electricity Consumption[5]



For many governments, data centers are now a core part of infrastructure. They matter for national security (data sovereignty), economic competitiveness (compute for firms and researchers), and investment attraction (hyperscaler hubs, supply chains). Countries are aligning power planning, permitting, and standards to expand access while improving efficiency — using targets for energy use (PUE), water use (WUE), and heat recovery[6].

Governments are taking clear actions:

- Planning with utilities to pre-identify sites with grid capacity and clean energy
- Setting up fast-track approvals for compliant builds
- Co-funding national GPU cloud systems to support R&D and small and medium-sized enterprises (SEMs)
- Linking tax breaks or permits to performance metrics like PUE, WUE, and heat reuse

5. Source: International Energy Agency. Energy and Artificial Intelligence: Towards Sustainable Data Centers. Paris: IEA, 2025; https://www.iea.org/reports/energy-and-ai

6. OECD Regulatory Policy Outlook 2025: Regulating for the planet. 9 Apr 2025 ; https://www.oecd.org/en/publications/2025/04/oecd-regulatory-policy-outlook-2025_a754bf4c/full-report/regulating-for-the-planet_a5fdd03c.html ;
World Economic Forum (2024a) — Circular water solutions key to sustainable data centres. 7 Nov 2024 ; https://www.weforum.org/stories/2024/11/circular-water-solutions-sustainable-data-centres/;
World Economic Forum (2024b) — 4 innovative ways to harness waste data centre energy. 13 Feb 2024 ; https://www.weforum.org/stories/2024/02/harnessing-waste-energy-data-centres/

At the same time, AI is unlocking new opportunities. As AI expands, it is creating demand for next-generation cooling, circular heat recovery, new energy sources and smarter management, power electronics, and new storage designs. These demands provide a strong pull for pilot testing and first-of-a-kind (FOAK) deployments. That means faster commercialization and stronger export potential — a real opportunity for Israel[7].

Energy Demand and System Impact.

Data centers now consume around 415 TWh per year, or 1.5% of global electricity. Since 2017, this consumption has grown at 12% annually, far above the global average. Even with efficiency improvements, demand is projected to reach 945 TWh by 2030 — with ranges between 670 TWh and 1260 TWh depending on adoption and design[8].

This growth is not evenly spread. Most of it is concentrated in the U.S., China, and Europe. That means permitting, grid upgrades, and energy policy in these places have global impact. In Southeast Asia, countries like Singapore are tying capacity releases to energy efficiency and clean energy use[9].

To help grids cope, utilities are adding technologies like advanced conductors and power-flow controls to boost capacity on existing lines. These give quicker results than building new transmission.

To meet rising demand, the IEA estimates that new supply will come from renewables (~450 TWh), gas (~175 TWh), and nuclear (especially small modular reactors around 2030). Storage and flexible demand will also be needed. Without faster permitting, about 20% of needed additions may be delayed by grid bottlenecks[10]. Some cities already face 4+ year wait times for grid connections. Places like Dublin have paused new projects until infrastructure catches up. As a result, new builds are moving to "grid-ready" zones and secondary markets[11].

---

7. [Deloitte Insights (2024) — Ramachandran, K.; Stewart, D.; Hardin, K.; Crossan, G.; Bucaille, A. As generative AI asks for more power, data centers seek more reliable, cleaner energy solutions (TMT Predictions 2025). 19 Nov 2024; https://www.deloitte.com/us/en/insights/industry/technology/technology-media-and-telecom-predictions/2025/genai-power-consumption-creates-need-for-more-sustainable-data-centers.html ;
AI Power: Expanding Data Center Capacity to Meet Growing Demand. McKinsey Technology, Media & Telecommunications Practice, October 2024; https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/ai-power-expanding-data-center-capacity-to-meet-growing-demand ;
International Energy Agency. Energy and Artificial Intelligence: Towards Sustainable Data Centers. Paris: IEA, 2025; https://www.iea.org/reports/energy-and-ai

8. International Energy Agency. Energy and Artificial Intelligence: Towards Sustainable Data Centers. Paris: IEA, 2025; https://www.iea.org/reports/energy-and-ai

9. International Energy Agency. Energy and Artificial Intelligence: Towards Sustainable Data Centers. Paris: IEA, 2025; https://www.iea.org/reports/energy-and-ai;
Green Data Centre Roadmap. Singapore: IMDA, 2024; https://www.imda.gov.sg/resources/press-releases-factsheets-and-speeches/factsheets/2024/charting-green-growth-for-data-centres-in-sg

10. International Energy Agency. Energy and Artificial Intelligence: Towards Sustainable Data Centers. Paris: IEA, 2025; https://www.iea.org/reports/energy-and-ai

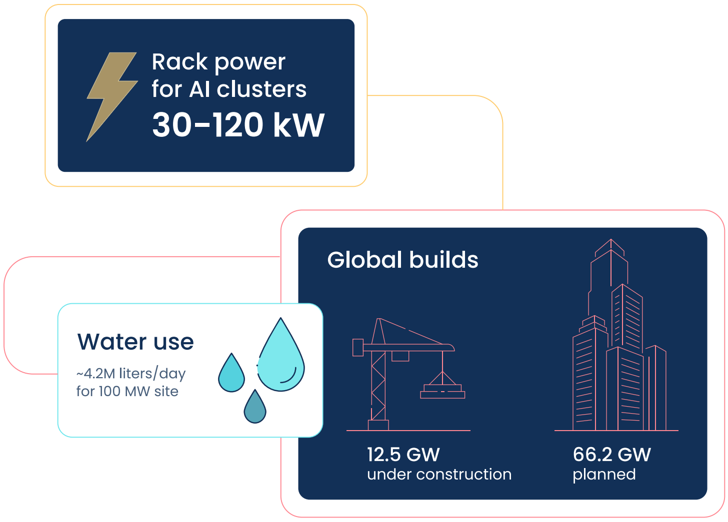
11. Cushman & Wakefield (2025) — 2025 Global Data Center Market Comparison. 7 May 2025; https://cushwake.cld.bz/globaldatacentermarketcomparison-05-2025-global-central-en-content

Water and Other Physical Bottlenecks.

Water is emerging as another key constraint. As facilities grow and become more power-dense, cooling and water use become central concerns. A 100 MW site with WUE ~1.8 L/kWh could use ~4.2 million liters of water per day. Large evaporative-cooled campuses can reach 19 million liters of water in hot regions[12].

As campus scales rise and racks densify, the binding constraints shift from floor area to interconnection capacity, substation and transmission headroom, cooling, and — in many locations — water availability. The U.S. federal analysis highlights increasing pressure on interconnection queues and resource adequacy, indicating that location decisions and flexible-load capabilities have become decisive for both timelines and cost.

Operators are shifting to hybrid and water-efficient cooling, reclaimed water, and on-site treatment. But water use isn't only on-site. Each kWh used also creates ~4.5 liters of off-site water use at power plants. That means AI load growth magnifies water footprints. Without changes, direct water use could double or triple by 2028[13].



How Far Can Efficiency and Cooling Improve?

Data centers have already improved efficiency through server consolidation, airflow design, and better chillers. But AI is changing the game. The IEA projects global average PUE can improve to ~1.3 by 2030. That saves energy, but not enough to stop overall growth.

Cooling is moving toward liquid-based systems. Direct-to-chip and immersion cooling allow higher temperatures, which reduce compressor needs and expand free-cooling hours. Operators report sustained PUE of 1.2–1.25 when these systems are optimized[14]. Warm-water loops also improve heat recovery. Some campuses now export multi-MW of recovered heat. Countries are

12. U.S. DOE FEMP & NREL (2024) — Best Practices Guide for Energy-Efficient Data Center Design. July 2024; https://www.energy.gov/sites/default/files/2024-07/best-practice-guide-data-center-design_0.pdf; University of Illinois (2024) — AI's Challenging Waters. Oct 11, 2024; https://cee.illinois.edu/news/AIs-Challenging-Waters; DgtlInfra (2024) — Zhang, M. Data Center Water Usage: A Comprehensive Guide. Jan 17, 2024 ; https://dgtlinfra.com/data-center-water-usage/; EESI (2025) — Yañez-Barnuevo, M. Data Centers and Water Consumption. June 25, 2025; https://www.eesi.org/articles/view/data-centers-and-water-consumption

13. 2024 United States Data Center Energy Usage Report. Shehabi, A., Smith, S.J., Hubbard, A., et al. Berkeley, CA: LBNL, December 2024. LBNL-2001637; https://escholarship.org/uc/item/32d6m0d1 ; IEEE Spectrum (2025) — Ren, S.; Luers, A. The Real Story on AI's Water Use – and How to Tackle It. 10 Sep 2025; https://spectrum.ieee.org/ai-water-usage

14. World Economic Forum (2024a) — Circular water solutions key to sustainable data centres. 7 Nov 2024 ; https://www.weforum.org/stories/2024/11/circular-water-solutions-sustainable-data-centres/

starting to require "heat reuse readiness" in new builds — creating a revenue stream and cutting city emissions.

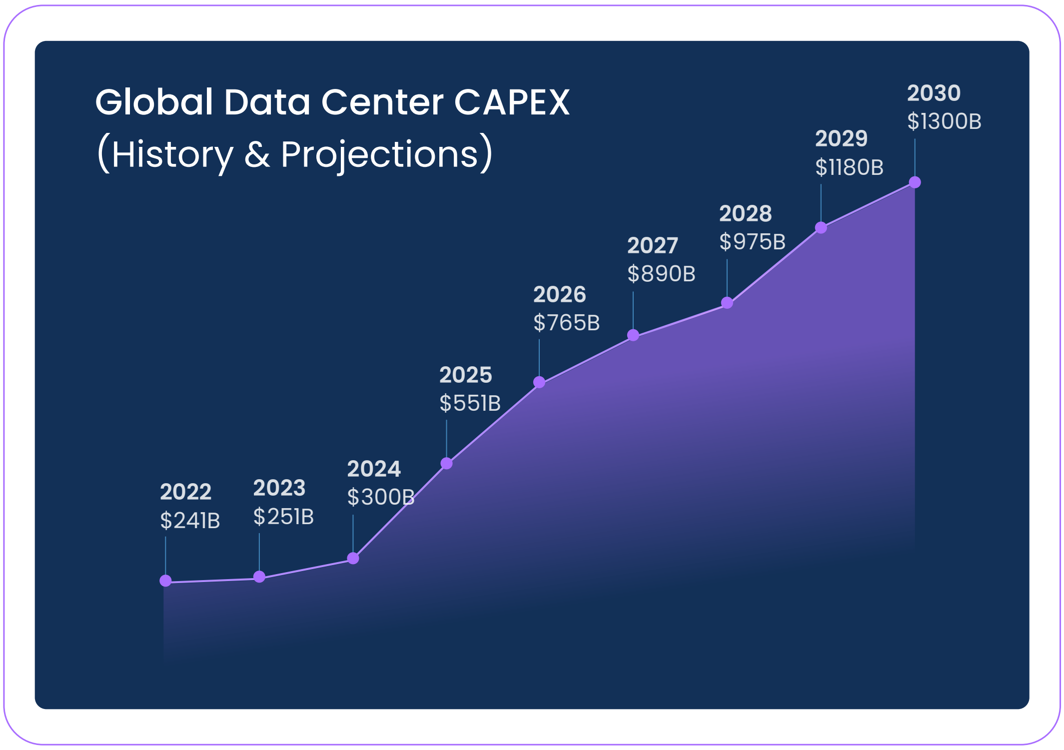
Leading operators now treat water and heat like energy: they set WUE targets, use greywater, and add on-site treatment. The EU now requires all data centers over 500 kW to report PUE, WUE, renewable use, and heat reuse into a public registry[15].

Market Size and Investment Flows.

The AI-driven infrastructure boom is not just reshaping power and water systems — it is unlocking enormous economic value. In 2024 alone, global investment in data centers exceeded $300 billion, led by hyperscalers, sovereign funds, and infrastructure investors.

The total market value of AI data centre infrastructure — including power, chips, cooling, land, and software — is projected to surpass $1 trillion by 2032, with more than 70 GW of capacity in global pipelines[16].

Figure 2: Global Data Center CAPEX: Historical Spend and Forecast (2022—2030)[17]



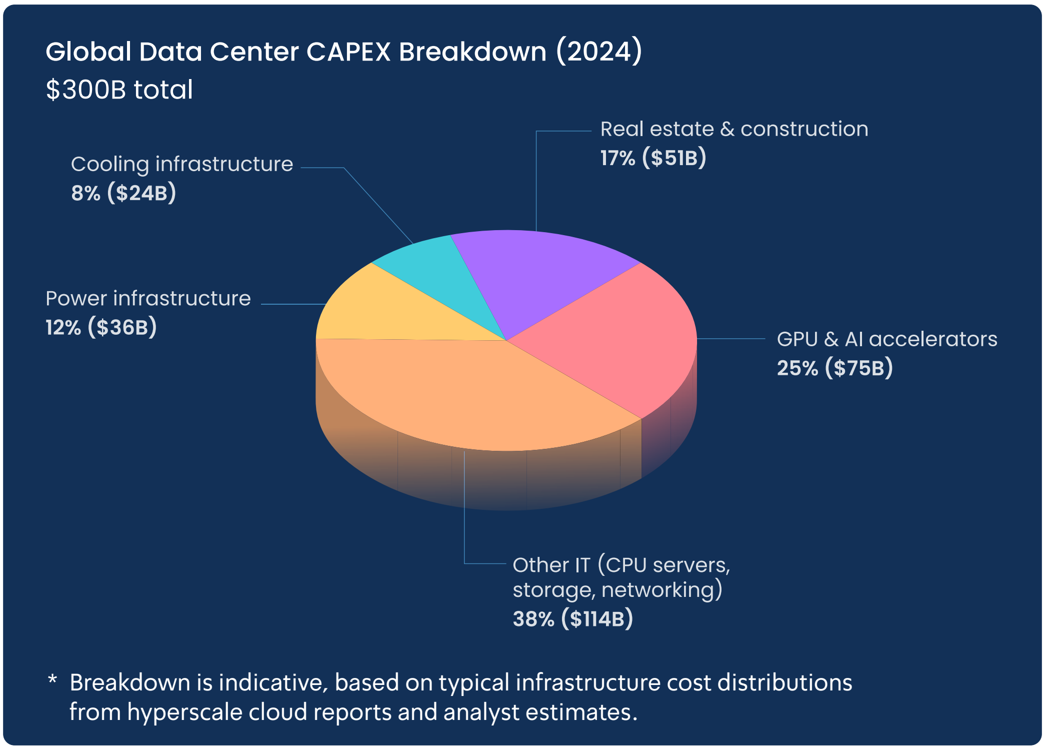
15. Directive (EU) 2023/1791 of the European Parliament and of the Council of 13 September 2023 on Energy Efficiency (recast). Official Journal of the European Union, L 231, 20.9.2023 ; https://eur-lex.europa.eu/eli/dir/2023/1791/oj

16. Cushman & Wakefield (2025) — 2025 Global Data Center Market Comparison. 7 May 2025 ; https://cushwake.cld.bz/globaldatacentermarketcomparison-05-2025-global-central-en-content

17. Source: McKinsey & Company. (2025). The cost of compute: A $7 trillion race to scale data centers. McKinsey & Company; https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/the-cost-of-compute-a-7-trillion-dollar-race-to-scale-data-centers;
Arizton Advisory & Intelligence. (2024). Global data center construction market - Focused insights 2024-2029. Arizton ; https://www.arizton.com/market-reports/global-data-center-construction-market-2025

Countries that align permitting, innovation, and investment have attracted the largest share of these flows. Even second-tier markets like Malaysia, Chile, and Ireland are seeing significant growth due to targeted reforms. For Israel, this represents not only a compute imperative, but a strategic industrial and economic opportunity.

Figure 3: Allocation of Global $300B Investment in AI Data Center Infrastructure (2024)



2. Israel's Position: Building on Strengths, Scaling for Impact

Israel's data center and AI infrastructure has expanded significantly in recent years, laying the groundwork for national and export-oriented growth. The country now hosts over 30 data centers, with additional campuses in the 30–40 MW range under development. Operators like MedOne and Bynet have built Tier III/IV underground facilities tailored for Israel's security and resilience needs — a unique differentiator in the global market[1].

At the national level, two important steps have been taken to strengthen sovereign AI infrastructure:

- The National AI Compute Project, launched under the Israel Innovation Authority (IIA), is deploying thousands of GPUs under a hybrid-access model — combining public support with commercial partnerships and discounted access for startups and academia
- A dedicated HPC Technologies R&D Lab was launched in 2024 to support benchmarking, stack-level integration, and proof-of-concept projects across compute, networking, energy, and cooling

Together, these initiatives signal a shift: Israel is moving from fragmented growth to strategic capacity building. These efforts are important but still focus mostly on compute access and software innovation. The national supercomputer project and discounted GPU access help with AI model training, but they don't address challenges in areas like cooling, power, water, or grid integration[2].

> **"Israel can turn its strengths in energy, water innovation, and deep-tech into a new strategic growth engine"**

Israel has the deep-tech foundation to go further — and now has the opportunity to extend its national AI compute initiatives into the infrastructure layer, where it holds a clear competitive edge. While recent programs have rightly focused on compute access and software, the next frontier lies in energy systems, advanced cooling, heat reuse, and integrated physical infrastructure — domains where Israeli innovation is already globally relevant.

1. Arizton Advisory & Intelligence. Israel Data Center Portfolio – Market Report. Arizton, 2024; https://www.arizton.com/market-reports/Israel-data-center-portfolio;
MedOne to Build Two Underground Data Centers in Israel. DataCenterDynamics, 2023; https://www.datacenterdynamics.com/en/news/medone-to-build-two-underground-data-centers-in-israel/;
Bynet Data Centers. Company Website and Facility Overview. Bynet; https://bynetdcs.co.il]
2. AI National Program – Program and Snapshot. Israel Innovation Authority, April 2025 ; https://innovationisrael.org.il/wp-content/uploads/2025/05/AI-National-Program-en-14.5.25.pdf

Key assets:

30 data centers, Tier III/IV underground

National AI supercomputer project

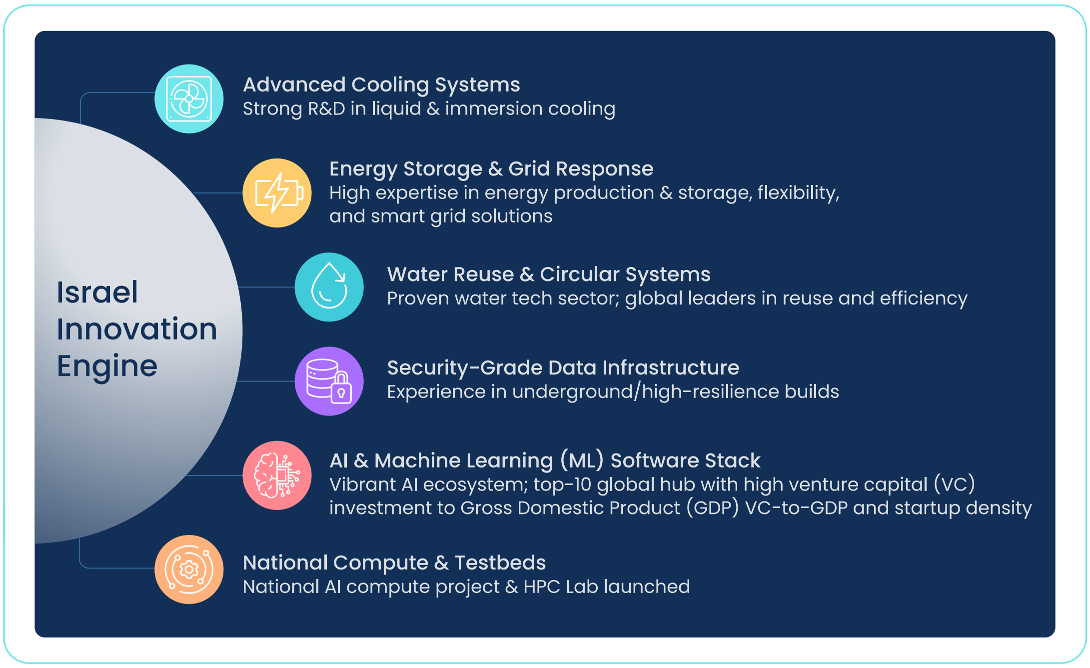
Deep-tech: 1,500 firms, $78B high-tech exports in 2024

By piloting these technologies at home, Israel can turn its engineering strengths into globally exportable solutions, positioning itself as a key provider in the rapidly growing AI infrastructure market, which attracts less than 2% of global investments despite Israel's high-value contributions.

In 2025, PLANETech collaborated with NPE, Goldfarb Gross Seligman and sector partners to run multi-stakeholder roundtables hosted by the Israel Innovation Institute. These sessions brought together government ministries, data center operators, hyperscalers, Original Equipment Manufacturers (OEMs), and Israeli startups to:

- Identify key bottlenecks across infrastructure, regulation, and deployment
- Co-design actionable solutions grounded in local capabilities
- Align innovation policy with national planning and grid strategy

Figure 4: Israel's Strategic Leverage Points in Data Centers Infrastructure



The result was a shared vision for unlocking Israel's opportunity — through a modular policy toolbox that includes innovation mechanisms, permitting reforms, interconnection frameworks, and performance-based incentives. This report reflects the insights and priorities that emerged from that process — and offers a roadmap to move from isolated progress to coordinated national leadership.

3. Market Trends & Innovation Drivers

In the past three years, the intersection of AI and data centers has entered a new phase. Capital is rising sharply, technology is evolving quickly, and access to compute is now seen as critical for national competitiveness. At the same time, the innovation ecosystem is shifting. Hyperscalers, GPU cloud providers, and specialized colocation firms now handle most AI workloads. New players like CoreWeave have rapidly grown by leasing capacity years in advance — showing high demand, rising costs, and long wait times for energy infrastructure[1].

> **"Overall rack power has more than doubled in two years (from ~8 kW to ~17 kW) and may hit ~30 kW by 2027"**
>
> — McKinsey, 2024

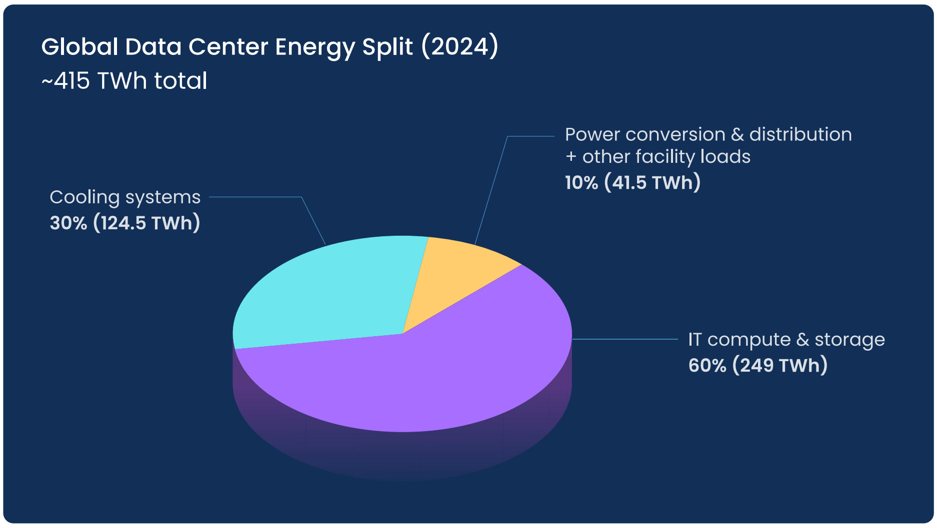
What's Driving Innovation.

Three main forces are pushing the need for new solutions:

- Higher power density and growing demand
- Grid constraints and climate targets
- Water and heat challenges

As illustrated in Figure 5, IT equipment and cooling dominate energy use in data centers, underscoring the innovation drivers for efficiency gains in high-density AI environments.

Figure 5: Breakdown of Energy Consumption in Data Centers (2024)[2]



1. AI Power: Expanding Data Center Capacity to Meet Growing Demand. McKinsey Technology, Media & Telecommunications Practice, October 2024; https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/ai-power-expanding-data-center-capacity-to-meet-growing-demand

2. Source: 2024 United States Data Center Energy Usage Report. Shehabi, A., Smith, S.J., Hubbard, A., et al. Berkeley, CA: LBNL, December 2024. LBNL-2001637; https://escholarship.org/uc/item/32d6m0d1; IEEE Spectrum (2025) — Ren, S.; Luers, A. The Real Story on AI's Water Use – and How to Tackle It. 10 Sep

Energy demand: Rack power has more than doubled in two years (from ~8 kW to ~17 kW) and may hit ~30 kW by 2027. AI racks using NVIDIA's GB200 already reach ~120 kW — levels that require liquid cooling.

Grid pressure: U.S. data centers alone could add ~460 TWh of new demand by 2030. But generation and grid upgrades aren't keeping up, creating reliability concerns and planning gaps.

Water and heat: Leading operators are moving to liquid cooling, renewable Power Purchase Agreements (PPAs), clean backup systems, and water-saving designs. These factors are becoming as important as traditional PUE/WUE metrics.

How the Tech Stack is Changing.

Power systems: Large campuses (200 MW+) are now the norm. This requires better energy sourcing, strong interconnections, grid-enhancing technologies, large-scale storage, and new backup models.

Thermal management: The move from air to liquid cooling is reshaping facility design. Direct-to-chip and immersion systems support dense racks and boost efficiency. New innovations include warm-water loops, dielectric fluids, no-leak connectors, and integrated racks that simplify installation.

Heat reuse: Cities like Stockholm use data center heat in district heating systems. Some industrial and agricultural users do the same. In warmer regions, heat can drive cooling systems through absorption chillers.

Software and orchestration: Hardware efficiency is improving, but data is often lacking. This opens the door for startups in measurement, reporting, and software orchestration. Smart workload scheduling can lower energy use and emissions.

Market Trends and Capital Flows.

Since 2022, global data center investment has nearly doubled, hitting ~$500 billion in 2025. The sector's electricity use is growing four times faster than the global average[3]. Multiple sources rank AI data centers among the top drivers of global power demand this decade[4].

New players are acting:

- China is building eight national hubs under its "Eastern Data, Western Computing" strategy
- Gulf countries are pairing cloud zones with land, clean power, and digital links.

2025; https://spectrum.ieee.org/ai-water-usage;
International Energy Agency. Energy and Artificial Intelligence: Towards Sustainable Data Centers. Paris: IEA, 2025; https://www.iea.org/reports/energy-and-ai].

3. International Energy Agency. Energy and Artificial Intelligence: Towards Sustainable Data Centers. Paris: IEA, 2025; https://www.iea.org/reports/energy-and-ai

4. AI: Five Charts That Put Data-Centre Energy Use – and Emissions – Into Context. Carbon Brief, 2025 ; https://www.carbonbrief.org/ai-five-charts-that-put-data-centre-energy-use-and-emissions-into-context/

Market structure is changing too. Colocation and hyperscale sites dominate, while small enterprise server rooms are fading. This affects how technologies spread: once major players adopt something (like liquid cooling), others tend to follow.

Financially, analysts describe the AI build-out as a multi-trillion-dollar infrastructure wave. This includes not just buildings, servers and GPUs but also:

- Grid upgrades
- Substations
- On-site energy generation (renewables, geothermal, nuclear)
- Storage
- Cooling systems
- Power electronics

Highlighted Trends:

- Drivers: Higher density, grid constraints, water/heat challenges
- Tech changes: Liquid cooling, heat reuse, software orchestration
- Market: Investments ~$500B in 2025

For policymakers, the key lessons are:

- How well countries manage siting and interconnection will shape how much investment they attract
- Nations that innovate in energy, thermal design, water reuse, and software efficiency can create technologies worth exporting — not just hosting

Israel can tap into this opportunity by aligning innovation with global needs in performance, sustainability, and scalability.

4. Global Policy Models That Work

To ground Israel's proposed strategy in proven practice, this chapter summarizes tested mechanisms from leading countries. These include governance models, innovation pipelines, performance incentives, and regulatory frameworks that have successfully scaled data center infrastructure while supporting energy goals.

> **"Countries that are successfully managing the AI-era growth... set clear rules, run innovation programs, and pay for real results"**

Countries that are successfully managing the AI-era growth in data centers are doing three things well:

- Setting clear rules (minimum performance and disclosure for data centers)
- Running innovation programs to turn new ideas into usable solutions
- Paying for real results like energy savings, flexibility, and heat reuse

The following examples show how this works in practice and what Israel can apply.

European Union: Visibility as the Foundation

The EU has made transparency the cornerstone. Article 12 of the revised Energy Efficiency Directive requires data centers over 500 kW IT load to report electricity and fuel use, PUE, renewable energy share, and water and heat metrics into a central registry[1].

This data backbone supports national procurement policies, local tenders, and investor decisions. It also speeds up the adoption of targets for PUE, WUE, and heat reuse across Europe.

Germany: Setting Clear minimums

Germany goes beyond disclosure. Its Energy Efficiency Act (EnEfG) sets firm PUE thresholds, requires sites to prepare for waste-heat reuse, and ties growth to renewable electricity. Because these are codified, investors can include them in business models and local authorities can enforce them[2].

This approach creates a clear and investable path for building low-impact, heat-ready data centers.

Singapore: Linking Testing to Market Access

Singapore lifted its moratorium in 2019 and replaced it with a "Green Data Centre Roadmap". New capacity is only awarded to proposals that meet top-tier criteria for PUE, WUE, and liquid

1. Directive (EU) 2023/1791 of the European Parliament and of the Council of 13 September 2023 on Energy Efficiency (recast). Official Journal of the European Union, L 231, 20.9.2023; https://eur-lex.europa.eu/eli/dir/2023/1791/oj

2. Energieeffizienzgesetz (EnEfG) — Energy Efficiency Act. Bundesgesetzblatt, 2023; https://www.gesetze-im-internet.de/enefg/

cooling. These criteria are shaped by testbeds and industry groups, which means they evolve with technology[3].

The process forms a loop: test new ideas » update standards » allocate capacity to projects that meet them.

United States: Structured Testing and Funding

The U.S. Department of Energy (DOE) Better Buildings Data Center Accelerator worked directly with operators and shared toolkits. Partners achieved ~36% gains in infrastructure energy efficiency. In parallel, the NREL + Wells Fargo IN² program gave ~$250k lab vouchers to startups for early validation. California's EPIC program funded full-scale liquid-cooling pilots with verified results.

These tools helped move innovations from lab to market faster[4].

Ireland: Paying for Grid Flexibility

Ireland's DS3 program shows how to monetize flexibility. Operators like Microsoft and Digital Realty used grid-interactive UPS systems to provide fast-frequency response (FFR). The system operator measured and paid for it, just like any grid service[5].

Nordics and UK: Monetizing heat and efficiency

In Stockholm, Open District Heating pays for usable waste heat from data centers. This turns a cost into a revenue stream.

Denmark lifted a price cap on surplus heat to enable more projects. **The UK** uses Climate Change Agreements (CCAs) to offer tax discounts when centers meet specific efficiency targets[6].

Japan: Making Procurement Clear and Predictable

Japan's Government Cloud program centralizes vendor pre-qualification and publishes clear technical standards. This reduces confusion for suppliers and ensures buyers get secure, efficient systems[7].

Israel could adopt a similar approach for its national pre-qualification and "Open Doors to Hyperscalers" process.

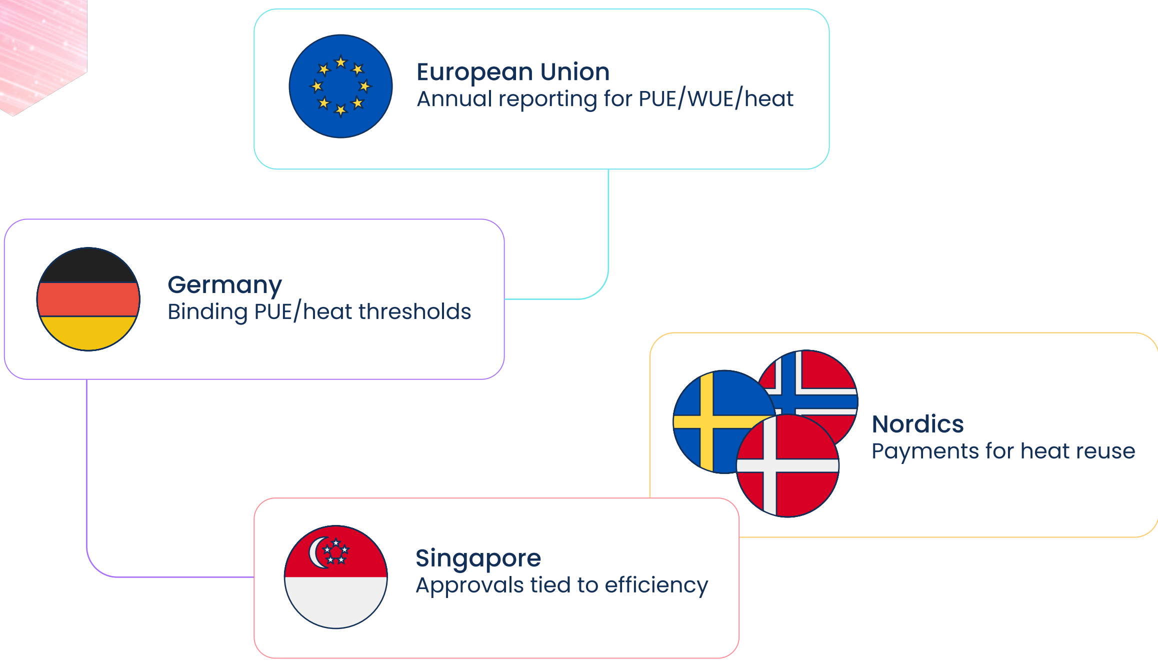
3. Green Data Centre Roadmap. Singapore: IMDA, 2024; https://www.imda.gov.sg/resources/press-releases-factsheets-and-speeches/factsheets/2024/charting-green-growth-for-data-centres-in-sg

4. Innovation Incubator (IN2) Program. Wells Fargo & NREL ; https://in2ecosystem.com ; California Energy Commission (CEC). EPIC Program — Electric Program Investment Charge. https://www.energy.ca.gov/programs-and-topics/programs/electric-program-investment-charge-epic-program

5. EirGrid. DS3 Programme - Delivering a Secure Sustainable Electricity System; https://www.eirgrid.ie/ds3-programme-delivering-secure-sustainable-electricity-system

6. Invest in Denmark. Green Data Centers in Denmark — Policy & Investment Overview. Ministry of Foreign Affairs of Denmark, 2025; https://investindk.com/set-up-a-business/cleantech/green-data ;
techUK. Innovating Regulation for AI Infrastructure. techUK, 2025; https://www.techuk.org/resource/industrial-strategy-2025-what-does-it-mean-for-ai.html

7. Digital Agency (Japan). Government Cloud — Architecture Guidelines. Digital Agency, 2021—present; https://www.digital.go.jp/en/resources/standard_guidelines]



Key Learnings from Use Cases.

1. Sequenced innovation works

The best programs use stages:

- Quick Tests (lab/bench trials)
- POC grants with independent Measurement and Verification (M&V) (even without an operator)
- In-production pilots with operators

The U.S. and Ireland show how each stage serves a distinct purpose. Together, they reduce time-to-contract.

2. Pay for outcomes, not inputs

Jurisdictions that pay based on real results (e.g., verified PUE/WUE savings, certified flexibility, or usable heat) attract better projects. These systems reward effective solutions and help the average facility improve over time.

3. Transparency helps procurement

Publishing design standards, telemetry formats, and acceptance tests allows startups to build toward what buyers need. Singapore and Japan both show the value of this.

4. **One office must own the rulebook**

The same agency should develop and manage:

- National Policy for data centers
- Disclosure standards
- Performance thresholds
- Buyer-facing frameworks

Singapore and Germany prove that when someone is in charge of updating rules and linking them to incentives or permits, the market adapts quickly.

Relevance to Israel.

These examples directly support the strategies proposed in the next chapters of this report:

- The U.S. and Ireland move from quick tests to in-production pilots with strong evidence
- Singapore links testing to capacity approval
- Japan streamlines buyer access with clear templates
- EU and Germany show how disclosure and clear thresholds attract investors

By adapting these principles to its unique context including its innovation strength, security-grade facilities, and deep-tech talent, Israel can:

- Secure its own AI compute
- Commercialize deep-tech in energy, water, and heat management
- Turn infrastructure constraints into a global export advantage

Takeaway:

- **Sequenced innovation**
  (tests » POCs » co-funded pilots)
- **Pay for outcomes**
- **Transparency aids procurement**

5. Strategic Pathways for Growth

"With the market expected to exceed $1 trillion by 2032, the question is... whether Israel will capture value as a global supplier"

Israel has the key ingredients to lead in sustainable, AI-ready digital infrastructure:

- Deep-tech talent and more than 1500 active deep-tech firms
- World-class water and energy engineering
- Security-grade data center expertise
- A national AI program targeting compute and software bottlenecks

High-tech exports hit $78 billion in 2024 (around 57% of total exports in H1 2025), with $28.6 billion raised by deep-tech firms since 2019 and 39 unicorns and centaurs now operating in Israel[1]. The country ranks as the 5th largest VC hub globally, with $10.6 billion raised in 2024 alone.

However, venture funds remain relatively small, and startup formation has slowed — with ~500 new companies founded in 2024, roughly half the annual pace of a decade ago. While Israel maintains high VC-to-GDP ratios and AI startup density, it trails the U.S. and EU in capturing the recent GenAI and AI-infrastructure investment surge[2].

Yet most of this global investment is bypassing Israel. In 2024, over $300 billion was deployed globally into AI-driven infrastructure — but the lion's share flowed to countries with aligned innovation tools, fast-track permitting, and performance-based incentives. With the market expected to exceed $1 trillion by 2032, the question is no longer whether this sector will grow — but whether Israel will capture value as a global supplier of solutions, or remain a consumer of imported systems.

What's now needed is a coordinated execution toolbox — the same set of mechanisms used by top countries to scale innovation into impact:

- Fast and credible test paths to validate early-stage technologies
- Outcome-linked pilots and performance-based incentives to reward measurable results
- Clear rules and public disclosure to reduce uncertainty and accelerate adoption

PLANETech and partners ran three national roundtables with ministries, regulators, the national utility, operators, hyperscalers, and startups. These sessions, along with targeted research,

1. Israel Innovation Authority (IIA), Status of Israeli High-Tech 2025 and Deep-Tech 2025 (Dealroom); https://innovationisrael.org.il/en/press_release/innovation-report-2025/
2. Israel Innovation Authority (IIA). Status of Israeli High-Tech 2025. Israel Innovation Authority, 2025; https://innovationisrael.org.il/en/report/the-state-of-high-tech-2025/

surfaced the practical bottlenecks: grid connection delays, limited testing environments, lack of outcome-based payments, and no unified vendor-prep process.

The result is a practical 7-part mechanism set that can:

- Secure public-sector and industrial AI compute
- Turn energy, water, and heat constraints into exportable tech
- Unlock Israeli innovation in energy, cooling, storage, electronics, and integration

The seven mechanisms proposed in this chapter are grouped below by function — each addressing a specific barrier and opportunity in the data center and AI infrastructure ecosystem.

Category	Mechanisms	Purpose
Governance	National Hub + Data Centers Code	Coordinate rules, track performance, and reduce friction for new entrants
Innovation	Quick Tests + POC Grants + Co-funded Pilots	Validate and deploy new solutions inside real data centre environments
Incentives	Outcome-Based Payments	Reward data center operators measurable performance (e.g., PUE, WUE, heat reuse, (renewable energy matching
Regulation	Disclosure + Thresholds + Fast Permits	Signal market expectations and accelerate investment into best-in-class projects

Mechanism 1
National "Data Center Spark" Innovation Hub

What: A permanent, neutral execution hub for data centets and AI infrastructure policy. It authors the Israeli Data Centers Code, runs vendor pre-qualification, maintains disclosure dashboards, convenes hyperscalers, and coordinates public instruments.

Who funds: **Government »** Hub operator (core grant);
Hub » Labs/experts (outsourced services)

Why: Today's data centers development is fragmented. This hub aligns rules, funding, and buyer access — like CyberSpark, but for data centets and AI infrastructure.

Precedent: Singapore's Green Data Centre Roadmap; Israel's CyberSpark.

Mechanism 2
Quick Tests (Startup Testbed for Early Feasibility)

What: A fast-entry testbed for TRL 3–4 startups to answer "does it basically work?" via scoped, low-cost technical trials.

Who funds: **Government »** Program;
Program » Startups (micro-grants);
Program » Labs

Why: Founders often lack access to credible metrology or neutral sites. Quick Tests provide standardized early evidence.

Precedent: Singapore Sustainable Tropical Data Centre Testbed (STDCT)[3]; U.S. DOE National Renewable Energy Laboratory (NREL)[4]; Ofgem Energy Regulation Sandbox[5].

Mechanism 3
Targeted POC Grants (for data cetner-critical technologies)

What: Ring-fenced grants for POCs in energy/cooling/storage/controls. No operator host required; tests can run in accredited labs or digital twins.

Who funds: **Government »** Startups (competitive grants)

Why: Israel's general POC support lacks data center-specific M&V and expert review. This program closes that gap.

Precedent: Precedents: U.S. DOE Accelerator[6]; IN^2 Innovation Incubator Voucher Program[7]; CEC EPIC Data Center Energy Efficiency Pilots[8]; Singapore Green Data Centre Programme Grant Call[9].

3. https://cde.nus.edu.sg/stdct/
4. https://www.nrel.gov
5. https://www.ofgem.gov.uk/energy-regulation-sandbox
6. https://www.aceee.org/files/proceedings/2014/data/papers/6-186.pdf
7. https://in2ecosystem.com
8. https://www.energy.ca.gov/programs-and-topics/programs/electric-program-investment-charge-epic-program
9. https://www.imda.gov.sg/proposal-submission/green-data-centre-programme-grant-call

Mechanism 4
"Pilots-with-Operators" Vouchers

What: In-production pilots inside Israeli data centers (e.g., MedOne, Bynet), co-funded with outcome bonuses tied to verified ΔPUE, WUE, Energy Reuse Factor (ERF), and grid flexibility.

Who funds: **Government + Operator »** Startup (matched voucher + top-ups)

Why: The last step before procurement. Vouchers de-risk operator trials and give startups real-world, buyer-grade evidence.

Precedent: Dublin UPS pilots[10]; ReUseHeat, Brunswick, Germany[11]; CEC pre-commercial liquid cooling pilots[12].

Mechanism 5
"Open Doors to Hyperscalers" Council

What: A standing council extending Project Nimbus, with quarterly roadmap sessions (rack specs, telemetry formats) and a clear vendor intake lane.

Who funds: **Government »** Program office (within the hub); Hyperscalers contribute engineering time

Why: Startups need specs and streamlined access; operators want ready vendors.

Precedent: Singapore's capacity allocation model[13]; Japan's Government Cloud architecture guidelines[14].

10. https://initiatives.weforum.org/energy-and-industry-transition-intelligence/case-study-details/microsoft-dublin:-grid-interactive-ups-for-frequency-regulation/aJYTG0000000Y4v4AE
11. https://cordis.europa.eu/project/id/767429
12. https://www.energy.ca.gov/sites/default/files/2024-06/CEC-500-2024-061.pdf
13. https://www.imda.gov.sg/resources/press-releases-factsheets-and-speeches/factsheets/2024/charting-green-growth-for-data-centres-in-sg
14. https://aws.amazon.com/blogs/publicsector/japans-digital-agency-accelerates-government-cloud-migration-with-aws-generative-ai-powered-architecture-reviews/

Mechanism 6
Outcome-Based Incentives

What: Financial rewards for data centers operators that achieve certified outcomes:

- Tariff credits for DR/FFR
- Bonuses for hourly renewable energy usage or matching
- Rebates for verified ΔPUE/WUE
- Payments for heat exported ($/MWh(th))

Who funds: Government (rebates), Regulator / Transmission System Operator (TSO) (tariff credits), Utilities (heat co-funding)

Why: Turns verified performance into revenue. Crowds in high-efficiency builds, crowds out laggards.

Precedent: Stockholm Open District Heating Programme[15], UK Government and Environment Agency Climate Change Agreements (CCA) Scheme[16], Denmark/French pricing reforms[17].

Mechanism 7
Data Centers Code for New Builds

What: Binding requirements for new data centers:

- Annual disclosure (energy usage and sources, PUE/WUE, heat reuse)
- Minimum performance (e.g., PUE ≤ 1.25, WUE caps, ≥90% clean energy pathway, heat-reuse readiness)
- Projects meeting the code get permitting fast-tracks and interconnection priority

Who funds: No direct grants;
Government offers regulatory and timeline certainty.

Why: Creates a performance-based market. Investors, operators, and startups all benefit from clear signals.

Precedent: EU Article 12[18]; Germany's EnEfG[19];
Singapore's Green Data Centers rules[20].

15. https://www.stockholmexergi.se/en/
16. https://www.gov.uk/guidance/climate-change-agreements--2
17. https://investindk.com/set-up-a-business/cleantech/green-data
18. https://eur-lex.europa.eu/eli/dir/2023/1791/oj
19. https://www.gesetze-im-internet.de/enefg/
20. https://www.imda.gov.sg/resources/press-releases-factsheets-and-speeches/factsheets/2024/charting-green-growth-for-data-centres-in-sg

6. Policy Tools & Implementation Pathways

This chapter supports a clear strategic aim: to turn Israel's deep-tech talent, infrastructure expertise, and innovation into a national growth engine.

The tools outlined here are designed to:

- Secure sovereign AI compute capacity
- Upgrade data centers to best-in-class performance
- Translate Israeli innovation into globally exportable infrastructure solutions

The tools presented in this chapter draw on proven international policy models, adapted to Israel's context. These include:

- Disclosure frameworks from the European Union that require transparency on energy, water, and heat reuse
- Structured innovation pipelines used in the U.S. to move technologies from testing to pilots and deployment
- Outcome-based incentives seen in Nordic and UK markets, where payments are tied to verified performance of data centers such as grid flexibility, and heat reuse
- Governance-linked market access from Singapore, where capacity is awarded only to "best-in-class" proposals
- Minimum performance thresholds and heat obligations

> **"These tools are modular, proven, and ready for deployment"**

These precedents show how modular, targeted interventions can unlock investment, accelerate deployment, and improve infrastructure outcomes — without requiring massive public spending or long institutional delays.

Governance & Market Infrastructure.

Set up a permanent, neutral "Data Center Spark" Innovation Hub to act as Israel's program office for data center and AI infrastructure.

Core responsibilities:

- Draft and launch the national Data Centers Code (disclosure + minimum performance)
- Operate a transparent pre-qualification framework tied to tests/POCs/pilots
- Maintain a national registry and dashboard of data centers performance
- Coordinate all innovation programs and instruments (see below)
- Convene "Open Doors to Hyperscalers" and stakeholder sessions

Practical Outcomes:

- Data Centers Code consultation draft aligned with EU Article 12
- Registry schema (electricity/fuel, PUE, WUE, ERF, exported heat, renewable share)
- Pre-qualification rules; KPIs and first-year roadmap

Innovation Tools & Early Testing.

Quick Tests

A fast, low-barrier testbed for early-stage technologies at TRL 3—4, allowing startups to validate core functionality.

- Feasibility track for TRL 3—4 innovations (bench/rack scale)
- ≤30-day intake, metered trials with published Feasibility Notes

Targeted POC Grants

Competitive grants designed to support POC work on critical infrastructure challenges (cooling, energy production and storage, and circular water/heat systems).

- Competitive grants for startups working on cooling, M&V, energy/storage, circularity
- Includes lab-hosted POCs (no operator required)

Pilots-with-Operators

A mechanism to deploy and validate solutions inside operational data centers, supported by co-funding (e.g., 50:50 model). These "in-production" pilots use matched vouchers and optional top-ups for verified performance — providing real-world results that accelerate procurement and scale-up.

- Co-funded in-production deployments with DC operators
- Includes matched vouchers and outcome top-ups

Performance-Linked Incentives.

Launch payments/rebates for verified outcomes of data centers (M&V certified):

- Tariff credits for Disaster Recovery (DR) and Fractional Flow Reserve (FFR)
- Rebates for PUE/WUE improvements
- Bonuses for verified heat exports ($/MWh converted to Joules)
- Hourly-matching bonuses (24/7 Carbon-Free Energy)

These tools align investment with performance and crowd in private capital. Payments are only released upon certified delivery.

Practical outcomes:

- Rulebook and payout system in place
- First payments settled
- Cost curves published ($/ΔPUE, $/FFR MW, $/m^3/MWh)

Regulatory Signals & Fast-Track Permitting.

Enact mandatory disclosure and minimum thresholds for all new data cetner builds/major retrofits:

- PUE ≤1.25, WUE caps by source, ERF readiness
- Renewable energy share targets and heat reuse provisions
- Offer permitting and interconnection priority for compliant projects

Practical Outcomes:

- Data Centers Code
- Permitting circulars issued; first “code-plus” projects approved

Market Access & Demand Signaling.

- Institutionalize Open Doors to Hyperscalers
- Quarterly briefings and roadmap sharing
- Transparent pre-qualification for Israeli vendors

KPIs & Transparency.

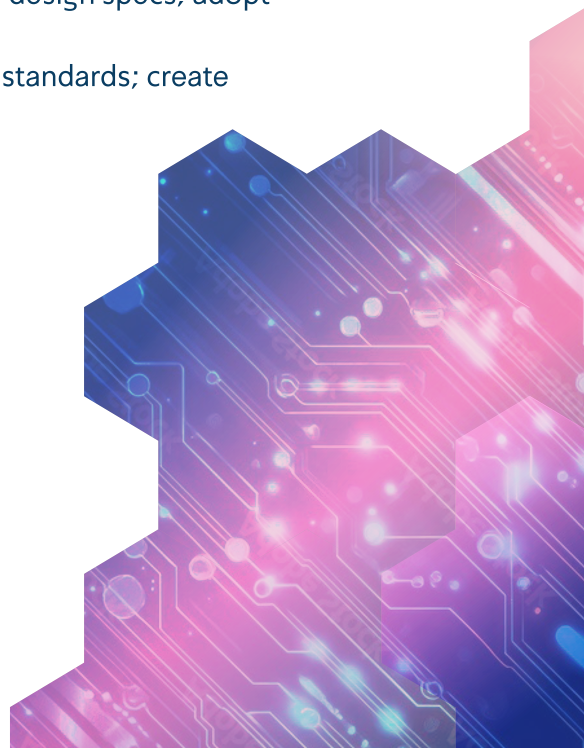
- Facility impact: ΔPUE ≥0.05; ΔWUE ≥0.3 m^3/MWh; ERF metrics
- Innovation pipeline: ≥40 Quick Tests, ≥25 POCs, ≥10 pilots annually
- Market adoption: ≥50% conversion to deployment
- Disclosure: 100% of new builds reported; national dashboard published

Roles & Responsibilities.

- Government & Regulators: Set rules; fund hub, POC grants and pilots; enforce incentives; coordinate permitting
- Utilities & Municipalities: Implement tariffs, heat contracts, interconnection
- Operators & Hyperscalers: Host and co-fund pilots; co-design specs; adopt code-plus models
- Startups & Academia: Deliver POCs/Pilots; co-develop standards; create export Intellectual Property (IP)

Strategic Impact.

- Domestic AI compute secured
- PUE/WUE top quartile data centers
- Verified exports in energy, cooling, power, circularity



"Israel has a strategic opportunity to lead... powering the future of AI, energy, and export leadership"

7. Closing Reflections

Israel has a strategic opportunity to lead the next wave of digital infrastructure — not just as a user of global technologies, but as a provider of high-performance, export-ready solutions. The tools outlined in this report are modular, proven, and ready for deployment. By aligning innovation incentives with measurable performance, Israel can unlock investment, accelerate deployment, and generate new engines of economic growth.

It is not a question of capacity — the talent, the technologies, and the urgency are already here. It is a question of coordination, targeted innovation support, and the right public tools to activate deployment.

With hyperscalers expanding in Israel and demand for compute growing globally, now is the time to act. A well-designed policy toolbox can transform data centers from silent infrastructure into a strategic innovation platform — powering the future of AI, energy, and export leadership.

Acknowledgments.

We thank the many domain experts, partners, and members of our ecosystem who contributed to this report. Their participation in roundtables, feedback, and shared expertise were instrumental in shaping the analysis and recommendations presented here. We are especially grateful for the continued collaboration across public, private, and academic sectors, which enables Israel's leadership in digital infrastructure.

Disclaimer.

This report is provided for informational purposes only and does not constitute legal, financial, investment, or professional advice. All data, projections, and analyses presented are based on publicly available sources or third-party inputs deemed reliable; however, PLANETech, NPEG, Goldfarb Gross Seligman do not guarantee the accuracy, completeness, or timeliness of the information provided.

Any forward-looking statements or estimates reflect assumptions as of the date of publication and are subject to change without notice. Readers are advised to conduct their own due diligence before making any decisions based on this material.