Global semiconductor demand exceeds supply

The demand for essential semiconductors is growing rapidly, and demand for AI accelerators is growing even faster.

- 1.2 trillion chips in 2021
  Global manufacturers shipped 1.218 trillion semiconductor units in 2023.¹

- 10.87% more in 2024
  Forecasters predict global semiconductor revenue will grow 10.87% in 2024.¹

- $67.2B in AI
  The AI chips market will hit $67.2 billion in 2024, up from $53.5 billion in 2023.²

Feeding AI is revolutionizing semiconductor manufacturing

Generative AI is voracious. The demand for AI processors — and the supercomputing infrastructure that supports them — has the world’s foundries running non-stop. Accelerating processor performance, improving power efficiency, and increasing manufacturing capacity to match the scaling requirements of AI workloads will take next-level innovation.
A systems foundry for the AI era

Disaggregated, chiplet designs are among the most-viable solutions for creating high-density, high-performance AI accelerators. Intel Foundry offers full-stack design and fab services plus global packaging and test facilities that can mass manufacture industrial quantities of complex, systems-of-chips processors at high yields and competitive pricing.

Leading-edge process technologies

18 Angstroms and shrinking
Intel 18A process node takes density below 2nm with extreme UV lithography.

3D transistors
RibbonFET gate-all-around (GAA) lithography stacks transistors vertically for increased density and improved signal integrity.

3D backside power
PowerVia backside power delivery separates power from signal processing to deliver increased frequency and power efficiency.

Proven packaging and test capabilities

>100 2.5D designs
Intel Foundry has more than 100 2.5D designs ranging from five-die packages to more than 45 dies in a single package.

High-speed interconnects
Embedded Multi-die Interconnect Bridge (EMIB) replaces through silicon vias (TSVs) with a cost-effective, simple-to-design, embedded communication layer.

Advanced 3D packaging
Foveros Direct 3D delivers sub-10-micron bump pitches for increased interconnect density and higher-performance, stacked-chiplet designs.

97% post-assembly test yield
Our advanced test and sort processes send 99% known good dies to assembly, which produces significantly higher yields.
Rebalancing supply and demand with an integrated, global model

Intel Foundry builds on Intel’s proven, global manufacturing capacity and integrated supply chain. We’re upgrading and expanding existing factories, and standing up new factories in the United States, Germany, and Poland.

Intel is prepared to invest up to $200B in capacity within this decade.

- Ohio: $20B
- Oregon: $3B
- Arizona: $50B
- New Mexico: $3.5B
- Ireland: $13B
- Germany: $18B
- Poland: $4.6B
- Israel: $10B
- Malaysia: $7B
Open ecosystems fuel innovation

Innovation thrives on flexibility, diverse approaches, and collaboration. By manufacturing for multiple architectures (ARM, RISC-V, x86, and custom ASICs), supporting major IPs, and partnering with the ecosystem, Intel Foundry helps advance innovation while clearing choke points throughout the industry.

Multi-architecture fabrication

Chiplet systems with any ecosystem core

30+ ecosystem partners

“Our combination of packaging and process technology, US-based global capacity, and world-class IP makes us a foundry like no other.”

— Pat Gelsinger
More sustainable capacity, innovation, and growth

Everything, even silica, is finite. Engineering higher-performance, more power-efficient semiconductors helps technology do more with less energy, but manufacturing those chips takes water, electricity, and chemicals—all of which we must manage and conserve.

110% water restoration
Through recycling and ecosystem restoration, Intel generates more water than it uses.

99% renewable energy
Intel has more than 50,000 kW of alternative and renewable electricity installations across 22 Intel campuses.

63% upcycled manufacturing waste
From 2022 to 2023 Intel reduced manufacturing waste 28% and upcycled 76,000 tons of waste.

Let’s talk
Every foundry engagement is a major commitment filled with problems to solve and details to wrangle.
We’d appreciate hearing about your needs and discussing how Intel Foundry might be of service.

intel.com/foundry

Sources:
2. Statista. AI chips, statistics & facts, accessed February 2024
3. Intel Analysis, 2021
4. Scale of some investments contingent on U.S. and EU support. These statements are based on current expectations and involve many risks and uncertainties that could cause actual results to differ materially from those expressed or implied in such statements. For more information on the factors that could cause actual results to differ materially, see our most recent earnings release and SEC filings at www.intc.com.
5. Intel’s 2023-24 Corporate Responsibility Report (CSR) Details regarding Intel’s water stewardship commitments and progress can be found beginning on page 81.
6. Intel’s 2023-24 Corporate Responsibility Report (CSR) Details regarding Intel’s energy conservation commitments and progress can be found beginning on page 73.
7. Intel’s 2023-24 Corporate Responsibility Report (CSR) Details regarding Intel’s waste and circular economy commitments and progress can be found beginning on page 83.

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