AICI — AI Compute & Infrastructure ETF

A. Strategy Summary

What the Strategy Is Trying to Do

The **AI Compute & Infrastructure ETF (AICI)** aims to give investors exposure to the companies that build the physical and technological backbone enabling artificial intelligence. While AI headlines usually focus on models and applications, this ETF focuses on the *infrastructure layer*—the high-end semiconductors, data-center operators, networking equipment, cloud infrastructure, thermal and power-management systems, and enabling technologies that make AI computation possible.

As global AI adoption accelerates, the demand for compute capacity, specialized chips, hyperscale data centers, and power infrastructure expands rapidly. AICI offers investors a simple way to invest in this long-term trend by capturing the companies most directly tied to the rapid growth of AI workloads.

Economic Intuition / Market Inefficiency Being Captured

Most AI-themed ETFs today are heavily concentrated in software, mega-cap consumer internet companies, or "AI beneficiaries" that only indirectly participate in the compute cycle. These portfolios often miss the deeper bottlenecks: semiconductor manufacturing, high-bandwidth networking, data-center capacity, GPU supply, cooling systems, and the supporting ecosystem powering AI model training and inference.

This creates two inefficiencies:

1. **Underexposure to infrastructure bottlenecks:**
   The companies enabling compute such as chip designers, foundries, network hardware manufacturers, and data-center operators—capture disproportionate value during AI booms.
2. **Overexposure to hype-driven software names:**
   Many AI ETFs chase narrative-driven application companies with weaker fundamentals, lower pricing power, and less direct correlation to AI workload growth.

AICI addresses these inefficiencies by focusing specifically on **AI compute, hardware, and infrastructure**, where capital expenditures, demand visibility, and margins tend to be strongest. This provides a more grounded way to participate in AI growth, centered on companies with fundamental revenue drivers rather than speculative software narratives.

B. Eligibility Criteria for Securities

The AICI ETF follows a disciplined, rules-based eligibility framework to identify companies directly involved in the infrastructure powering artificial intelligence. These criteria ensure theme purity, financial quality, investability, and global diversification.

B.1 Market Capitalization Requirements

To ensure financial resilience and avoid speculative micro-cap names:

- **Minimum market capitalization:** USD **$1 billion**
- **Preferred range:** USD **$5 billion+**
- **Micro-caps (< $500M):** Automatically excluded

Rationale:

AI infrastructure requires capital-intensive operations. Companies below $1B often lack scale, supply-chain reliability, or competitive advantage.

B.2 Liquidity Requirements

To support efficient ETF creation/redemption and reduce execution slippage:

- **Minimum Average Daily Dollar Volume (ADV):**
  - USD **$20 million** for U.S.-listed stocks
  - USD **$15 million** for developed international markets
  - USD **$25 million** for emerging-market listings (higher liquidity needed for stability)
- **Minimum trading history: ≥ 180 days**
- **ADR preference:** If dual-listed, the primary exchange or ADR with superior liquidity is selected.

Rationale:

AI hardware and semiconductor names often trade at higher velocity. Ensuring liquidity avoids exposure to thinly traded or volatile securities.

B.3 Sector / Industry Inclusion Rules

A company must derive most of its economic value (revenue, assets, product mix, or strategic roadmap) from one of the **five core AI infrastructure pillars**:

1. Advanced Semiconductors & AI Accelerators

- GPU / TPU / NPU designers
- AI accelerator chip manufacturers
- ASIC producers for AI workloads

(Examples: NVDA, AMD, AVGO)

2. Semiconductor Manufacturing & Equipment

- Foundries
- Lithography companies
- Etching, deposition, and process-control equipment
- Silicon wafer and semiconductor materials suppliers

(Examples: TSM, ASML, Lam Research)

3. Data-Center Operators & Cloud Infrastructure

- Hyperscale cloud platforms
- Colocation data centers
- Edge-compute operators
- High-performance compute (HPC) environments

(Examples: EQIX, DLR)

4. Networking & Connectivity Equipment

- High-bandwidth switches
- Optical networking
- Interconnect hardware
- High-speed data fabrics
- Network interface controllers (NICs) for AI clusters

(Examples: Arista Networks, Marvell)

5. Power, Cooling & Thermal Infrastructure

- Advanced cooling solutions (liquid cooling, immersion cooling)
- Thermal management components
- Power distribution units for data centers
- Energy-support infrastructure tied to compute scaling

(Examples: Vertiv Holdings)

Explicit Exclusions

To maintain clean theme purity:

- AI software, SaaS, or application companies
- Consumer internet firms with AI "as a feature"
- General IT services firms
- Robotics-only companies unless tied to AI compute chips
- Encryption/cybersecurity firms unless directly linked to compute hardware
- EV manufacturers or semiconductor-adjacent automotive names

B.4 Geographic Eligibility

Eligible regions:

- United States
- Canada
- Western Europe
- Japan, Taiwan, South Korea
- Singapore

Conditional:

- China ADRs only with audit-compliant filings and adequate liquidity

Excluded:

- Frontier markets
- Companies with material governance flags or sanctions risk

Rationale:

AI hardware and semiconductor manufacturing is geographically concentrated in the U.S., Taiwan, Korea, Japan, and parts of Europe.

B.5 Financial Quality & Accounting Filters

Companies must satisfy **at least two** of the following quality screens:

- **Positive gross profit** in the latest fiscal year
- **Positive operating cash flow** in the latest fiscal year
- **Revenue growth ≥ 5% YoY** or **≥ 5% CAGR** over three years
- **Capex-investment consistency** for semiconductor or data-center firms

Additional guardrails:

- **Debt-to-equity ≤ 4.0** (exceptions for hyperscalers with stable cash flows)
- **R&D intensity check:** R&D expense must be material (≥5% of revenue) for chip designers

Rationale:

AI infrastructure firms must reinvest consistently and maintain financial strength to support multi-year capital cycles.

B.6 Theme Purity Score (TPS)

A proprietary TPS score (0.0 to 1.0) is assigned based on:

- % of revenue tied to AI infrastructure
- CAPEX allocation
- Product mix
- Forward guidance / business strategy

Eligibility thresholds:

- **TPS ≥ 0.50:** Required for inclusion
- **TPS ≥ 0.75:** Eligible for overweighting
- **TPS < 0.50:** Excluded

B.7 ESG and Controversy Filters

AICI excludes:

- Level 4 or 5 controversy-rated companies
- Firms with material supply-chain violations related to forced labor
- Companies involved in restricted dual-use weapons technologies unrelated to AI compute

B.8 Listing & Trading Standards

To ensure stability and reliable data:

- Only common stock and ADRs are eligible
- No preferred stock, warrants, rights, or derivatives
- At least **6 months** of recognized listing history
- No companies under active delisting review

C. Initial Universe and Final Portfolio

The AICI ETF follows a structured, rules-based process to build a global universe of companies powering the AI compute and infrastructure stack. This section describes how the initial universe was constructed, how securities were screened and ranked, and how the final 30-security portfolio was formed.

C.1 Initial Universe Construction

1. ETF-Based Theme Aggregation (Top-Down Screening)

To ensure comprehensive coverage across the AI compute supply chain, the initial universe was created by aggregating holdings from several leading AI-relevant ETFs, including:

- **SOXX** – iShares Semiconductor ETF
- **SMH** – VanEck Semiconductor ETF
- **IGV** – iShares Expanded Tech-Software ETF (screened only for hardware-relevant names)
- **BOTZ** – Global X Robotics & AI ETF (filtered for chip and infrastructure names)
- **FIVG** – Defiance 5G ETF (for networking infrastructure)

This ensures that the universe includes all major publicly traded companies across semiconductors, manufacturing, networking, data centers, and thermal/power infrastructure.

2. Raw Merge & Cleanup

After combining holdings from all source ETFs:

- **Raw universe size:** 140+ tickers
- After removing duplicates → **83 unique securities**
- Exclusions applied for:
  - Software-only firms
  - Mega-cap internet firms misclassified as "AI"
  - Robotics firms without AI compute relevance
  - Illiquid EM tickers
  - Companies below $1B market cap

Post-filtering, the final AICI Initial Universe contains:

53 eligible securities

(Confirmed from your initial_universe_ai_infra.csv)

C.2 Screening & Composite Scoring

Each of the 53 securities was evaluated using the four-factor **Composite Score** used across both ETFs for consistency. This ensures alignment across Deliverable 1.

Composite Score Components

Component	Weight	Description
Liquidity Proxy (LP)	30%	ETF membership count + relative weight across source ETFs
Theme Purity Score (TPS)	30%	% revenue/products tied to AI compute/infrastructure
Subsector Priority (SP)	20%	Semiconductor > Networking > Foundry > Data Center > Cooling/Power
Diversification Booster (DB)	20%	Rewards underrepresented subsectors (e.g., lithography, cooling, optical networking)

Composite Score Formula

$Composite_i = 0.30 \cdot LP_i + 0.30 \cdot TPS_i + 0.20 \cdot SP_i + 0.20 \cdot DB_i$

Ranking the 53 eligible securities by Composite Score produces a candidate list for final portfolio construction.

C.3 Final Portfolio Selection (30 Securities)

The final AICI portfolio is constructed using a selection and optimization process identical in structure to GCEI for consistency. Selection rules:

1. Top Composite Score Priority

Highest-ranked securities across semiconductors, networking, data-center infrastructure, and manufacturing equipment are selected first.

2. Subsector Coverage Requirement

The final 30-name portfolio must include exposure across:

- AI Accelerators & GPUs
- Semiconductor Manufacturing Equipment
- Foundries
- Networking / High-Bandwidth Interconnect
- Data Centers / Hyperscale Compute
- Power & Thermal Infrastructure
- Optical / High-Speed Networking
- Memory / HBM supply chain
- EDA / AI design tools

3. Theme Purity Enforcement

- TPS ≥ 0.50 required
- TPS ≥ 0.75 eligible for overweighting

4. Liquidity & Size Discipline

- Minimum ADV thresholds enforced
- Preference for U.S., Taiwan, Korea, Japan for manufacturing-heavy names

5. Diversification Controls

- Max subsector weight: 40%
- Max single-name weight: 8%
- Minimum representation across *five* subsectors

C.4 Final AICI Portfolio (30 Holdings)

Below is the **complete holdings table** with tickers, names, weights, subsector, and region.

AICI — Final Portfolio Holdings (30 Securities)

Ticker	Company Name	Weight (%)	Subsector	Region	TPS
NVDA	NVIDIA Corp.	7.87%	AI Accelerators / GPUs	US	1.0
AMD	Advanced Micro Devices	6.75%	AI Accelerators / CPUs	US	1.0
AVGO	Broadcom	5.71%	AI Networking / ASICs	US	0.9
MRVL	Marvell Technology	4.58%	Data-Center Interconnect / Custom ASICs	US	0.9
TSM	Taiwan Semiconductor Manufacturing	4.36%	Semiconductor Foundry	Taiwan	0.8
ASML	ASML Holding	4.09%	Lithography Equipment	Netherlands	1.0

SMCI	Super Micro Computer	3.90%	AI Servers / Data-Center Systems	US	0.9
ANET	Arista Networks	3.76%	High-Bandwidth Networking	US	1.0
MU	Micron Technology	3.60%	High-Bandwidth Memory (HBM)	US	0.8
LRCX	Lam Research	3.52%	Wafer Fabrication Equipment	US	0.9
AMAT	Applied Materials	3.38%	Semiconductor Manufacturing Equipment	US	0.9
KLAC	KLA Corp.	3.33%	Process Control Equipment	US	0.9
QCOM	Qualcomm	3.25%	Edge AI / Accelerators	US	0.7
INTC	Intel Corporation	3.09%	CPUs / Foundry Expansion	US	0.6
TXN	Texas Instruments	2.87%	Analog / Power Management	US	0.7
NXPI	NXP Semiconductors	2.80%	Embedded AI Processors	Netherlands	0.7
ON	ON Semiconductor	2.76%	Power Semis / Data-Center Power Mgmt	US	0.8
WDC	Western Digital	2.63%	AI Storage / NAND	US	0.7
STX	Seagate Technology	2.62%	Enterprise HDD / AI Storage	US	0.7
DLR	Digital Realty Trust	2.40%	Data-Center REIT	US	0.6

EQIX	Equinix	2.37%	Data-Center REIT	US	0.6
VRT	Vertiv Holdings	2.28%	Cooling & Thermal Infrastructure	US	0.8
MRW	Murata Manufacturing	2.19%	High-Frequency Components	Japan	0.7
6752.T	Rohm Co.	2.14%	Power Semiconductors	Japan	0.7
2303.TW	Delta Electronics	2.05%	Data-Center Power Equipment	Taiwan	0.7
3105.TW	Winbond Electronics	1.96%	DRAM / Memory	Taiwan	0.6
005930.KS	Samsung Electronics	1.89%	DRAM / NAND / Foundry	Korea	0.7
066570.KS	LG Electronics	1.83%	Thermal / Power / Components	Korea	0.6
6854.T	Tokyo Electron	1.77%	Semiconductor Equipment	Japan	1.0
CDNS	Cadence Design Systems	1.82%	EDA / Chip Design Tools	US	0.7

C.5 Universe & Portfolio Summary

Stage	Securities	Notes
Raw merged universe	140+	Across SOXX, SMH, BOTZ, IGV, FIVG
Cleaned unique universe	83	After removing duplicates
Eligible universe (post-filters)	**53**	initial_universe_ai_infra.csv
Final portfolio	**30 names**	Composite Score + subsector diversification

D. Security-Level Rationale and Weighting

Each security in the AICI portfolio was selected based on its direct involvement in AI compute infrastructure, financial strength, market leadership, and alignment with the ETF's theme purity and liquidity rules. This section provides a concise rationale for inclusion, eligibility alignment, and final weight assignment for all 30 holdings.

Top-Weight Holdings

1. NVIDIA (NVDA) — 7.87%

Why included:
NVIDIA is the global leader in GPU-based AI accelerators and dominates AI model training and inference workloads. CUDA, H100, and upcoming architectures make it the single most important company in AI compute.

Eligibility:
TPS = 1.0. Exceptional liquidity, financial strength, and R&D intensity. Included across all semiconductor and AI-related ETFs.

Why this weight:
Highest Composite Score in the universe; capped at the 8% single-name maximum.

2. Advanced Micro Devices (AMD) — 6.75%

Why included:
AMD produces high-performance GPUs, CPUs, and the MI300 AI accelerator series, which are gaining traction among hyperscalers.

Eligibility:
TPS = 1.0. Strong growth, liquidity, and R&D profile.

Why this weight:
High Composite Score driven by purity and strategic positioning; slightly below NVDA based on liquidity and subsector priority.

3. Broadcom (AVGO) — 5.71%

Why included:
AVGO supplies custom ASICs, high-bandwidth networking chips, and NICs critical for AI cluster connectivity.

Eligibility:
TPS ≈ 0.9. High liquidity and solid financial quality.

Why this weight:
Ranks among top scorers; subsector priority (networking) boosts its weight.

4. Marvell Technology (MRVL) — 4.58%

Why included:

Marvell develops high-speed interconnect, custom silicon, and data-center networking components that enable AI workloads.
Eligibility:
TPS ≈ 0.9; meets all liquidity and financial screens.
Why this weight:
High Composite Score from strong diversification and networking relevance.

5. Taiwan Semiconductor Manufacturing (TSM) — 4.36%

Why included:
TSMC is the world's leading foundry enabling all advanced AI chips. AI compute demand is structurally dependent on its capacity.
Eligibility:
TPS ≈ 0.8; meets all global quality and size criteria.
Why this weight:
Top scorer, though slightly lower purity than chip designers.

Upper Mid-Weight Holdings

6. ASML Holding (ASML) — 4.09%

Why included:
ASML dominates EUV and DUV lithography, the most critical technology for producing leading-edge AI chips.
Eligibility:
TPS = 1.0. Exceptional financial and technological leadership.
Why this weight:
High Composite Score due to essentiality in the semiconductor supply chain.

7. Super Micro Computer (SMCI) — 3.90%

Why included:
SMCI builds AI-optimized servers and rack-scale systems integrating NVIDIA/AMD accelerators.
Eligibility:
TPS ≈ 0.9; strong liquidity and explosive AI-driven revenue growth.
Why this weight:
Strong subsector relevance and Composite Score.

8. Arista Networks (ANET) — 3.76%

Why included:
Arista leads high-bandwidth switching required for AI cluster communication.
Eligibility:
TPS = 1.0; financially and technologically strong.
Why this weight:

High Composite Score from networking priority and thematic purity.

9. Micron Technology (MU) — 3.60%

Why included:
Micron supplies High-Bandwidth Memory (HBM), essential for GPU and accelerator performance.
Eligibility:
TPS ≈ 0.8; meets all liquidity and financial metrics.
Why this weight:
Weight reflects a critical role in AI memory, moderated by cyclicality.

10. Lam Research (LRCX) — 3.52%

Why included:
Lam provides deposition and etching tools for advanced semiconductor manufacturing.
Eligibility:
TPS ≈ 0.9; strong liquidity and R&D discipline.
Why this weight:
High Composite Score within semiconductor equipment subsector.

Mid-Weight Holdings

11. Applied Materials (AMAT) — 3.38%

Why included:
AMAT is a core provider of semiconductor manufacturing tools used for AI chip production.
Eligibility:
TPS ≈ 0.9; meets size, liquidity, and quality screens.
Why this weight:
Moderate-high weight reflecting its critical role in chip manufacturing.

12. KLA Corporation (KLAC) — 3.33%

Why included:
KLAC supplies process control and metrology tools needed to achieve AI-grade chip densities.
Eligibility:
TPS ≈ 0.9; strong financials and high purity.
Why this weight:
Balanced weight within the semiconductor equipment group.

13. Qualcomm (QCOM) — 3.25%

Why included:
QCOM develops edge-AI chips for mobile and low-power inference.

Eligibility:
TPS ≈ 0.7; meets size, liquidity, and technology screens.
Why this weight:
Moderate weight reflecting lower purity but high subsector relevance.

14. Intel Corporation (INTC) — 3.09%

Why included:
Intel participates in AI accelerators (Gaudi), Xeon CPUs, and foundry expansion targeting AI workloads.
Eligibility:
TPS ≈ 0.6; meets liquidity and financial filters.
Why this weight:
Moderate weight is driven by diversification benefits.

15. Texas Instruments (TXN) — 2.87%

Why included:
TI produces analog and power-management components critical for AI-server power efficiency.
Eligibility:
TPS ≈ 0.7; financially strong with deep manufacturing expertise.
Why this weight:
Subsector relevance but lower thematic purity.

Lower Mid-Weight Holdings

16. NXP Semiconductors (NXPI) — 2.80%

Why included:
Embedded processors for edge AI, industrial automation, and connectivity.
Eligibility:
TPS ≈ 0.7.
Why this weight:
Included for edge AI representation; moderate purity keeps weight balanced.

17. ON Semiconductor (ON) — 2.76%

Why included:
Supplies power semis used in data-center power management.
Eligibility:
TPS ≈ 0.8; strong financial quality.
Why this weight:
Weight reflects strong relevance to data-center power infrastructure.

18. Western Digital (WDC) — 2.63%

Why included:
Provides storage systems integral to AI data pipelines.
Eligibility:
TPS ≈ 0.7.
Why this weight:
Moderate weight reflecting storage as a supporting subsector.

19. Seagate Technology (STX) — 2.62%

Why included:
Enterprise HDDs used for large-scale AI data storage systems.
Eligibility:
TPS ≈ 0.7.
Why this weight:
Diversifies storage exposure; similar rationale to WDC.

20. Digital Realty Trust (DLR) — 2.40%

Why included:
Global data-center REIT housing hyperscale compute environments.
Eligibility:
TPS ≈ 0.6.
Why this weight:
Stabilizing exposure; lower purity results in mid-low weight.

Tail-Weight Holdings

21. Equinix (EQIX) — 2.37%

Why included:
Largest global data-center operator enabling AI-related compute workloads.
Eligibility:
TPS ≈ 0.6.
Why this weight:
Similar to DLR; provides global diversification.

22. Vertiv Holdings (VRT) — 2.28%

Why included:
Leader in cooling, thermal management, and data-center power systems.
Eligibility:
TPS ≈ 0.8.
Why this weight:
Strong thematic fit but smaller size vs semis.

23. Murata Manufacturing (MRW) — 2.19%

Why included:
Produces high-frequency components essential for networking and compute devices.
Eligibility:
TPS ≈ 0.7.
Why this weight:
Moderate-low weight reflecting subsector relevance.

24. Rohm Co. (6752.T) — 2.14%

Why included:
Power semiconductors for data-center energy systems.
Eligibility:
TPS ≈ 0.7.
Why this weight:
Lower liquidity relative to U.S. names; moderate weight.

25. Delta Electronics (2303.TW) — 2.05%

Why included:
Key supplier of data-center power distribution and cooling systems.
Eligibility:
TPS ≈ 0.7.
Why this weight:
Important but niche subsector role.

26. Winbond Electronics (3105.TW) — 1.96%

Why included:
Memory manufacturer contributing to AI storage and embedded memory.
Eligibility:
TPS ≈ 0.6.
Why this weight:
Small weight due to lower purity and size.

27. Samsung Electronics (005930.KS) — 1.89%

Why included:
DRAM/NAND and foundry capacity tied to AI chip supply.
Eligibility:
TPS ≈ 0.7.
Why this weight:
Large conglomerates reduce thematic purity; conservative weight.

28. LG Electronics (066570.KS) — 1.83%

Why included:
Thermal and power-infrastructure components supporting data-center buildouts.
Eligibility:
TPS ≈ 0.6.
Why this weight:
Tail weight due to broad business mix.

29. Tokyo Electron (6854.T) — 1.77%

Why included:
Major supplier of semiconductor manufacturing equipment.
Eligibility:
TPS = 1.0.
Why this weight:
High purity but moderate liquidity relative to U.S. peers.

30. Cadence Design Systems (CDNS) — 1.82%

Why included:
CDNS provides electronic design automation (EDA) software essential for designing advanced AI chips—GPUs, TPUs, accelerators, and custom SoCs. It is a foundational enabler of AI compute hardware.
Eligibility:
TPS ≈ 0.7. Meets all liquidity, size, and financial-stability requirements; widely included in semiconductor ETFs.
Why this weight:
Added to represent the semiconductor design stack. A moderate 1.82% weight aligns with its Composite Score while maintaining subsector diversification.

E. Portfolio Construction & Optimization

The AICI ETF uses a transparent, rules-based methodology to transform the eligible universe of 53 securities into a fully diversified, 30-security portfolio of AI compute and infrastructure companies. The portfolio construction process ensures high thematic purity while maintaining liquidity, diversification, and investability. This section outlines the weighting methodology, optimization logic, constraints, and rebalancing framework used to obtain the final portfolio.

E.1 Weighting Methodology

AICI uses a **score-proportional weighting system** based on the Composite Score assigned to each security in the eligible universe. Higher scores indicate superior liquidity, thematic purity, subsector relevance, and diversification value.

Composite Score Formula

Composite_i = 0.30 * LP_i + 0.30 * TPS_i + 0.20 * SP_i + 0.20 * DB_i

- **LP** = Liquidity Proxy
- **TPS** = Theme Purity Score
- **SP** = Subsector Priority
- **DB** = Diversification Booster

Each score is scaled to the 0–1 range for consistency.

Raw Score-Proportional Weight

w_raw_i = Composite_i / (Composite_1 + Composite_2 + … + Composite_30)

This assigns higher weights to the most critical AI infrastructure names (e.g., NVDA, AMD, TSM, ASML, SMCI, ANET) while appropriately down-weighting lower-purity or niche subsector names.

E.2 Portfolio Optimization Framework

Once the 30 names are selected and raw weights are computed, AICI applies a constraint-driven optimization to meet diversification, risk, and liquidity requirements.

Key Optimization Goals

1. **Preserve thematic purity**
   Ensure the portfolio maintains a high average TPS (≥0.80 target).
2. **Balance subsectors**
   Avoid over-concentration in core semiconductors by ensuring broad exposure across:
     - AI accelerators
     - Foundries
     - Semiconductor equipment
     - Networking infrastructure
     - Memory & storage
     - Data-center operators
     - Power & cooling
     - EDA / chip design tools
3. **Control concentration risk**
   Prevent excessive exposure to any single security or subsector.
4. **Maintain global investability**
   Ensure all holdings meet ADV, market-cap, and listing standards.

E.3 Portfolio Construction Constraints

The following constraints are enforced during optimization:

1. Single-Security Weight Cap

- **Maximum: 8%**

2. Subsector Exposure Caps

To prevent semiconductor-heavy concentration:

- **Maximum per subsector: 40%**

3. Geographic Exposure Controls

- No single country (outside the U.S.) may exceed **25%**
- U.S. exposure allowed to exceed 50% due to industry characteristics
- China-adjacent names limited by liquidity and governance filters

4. Minimum Subsector Representation

The final portfolio must include **at least 5 subsectors**.

AICI includes:

- AI accelerators
- Semiconductor manufacturing
- Foundry
- Memory & storage
- Networking infrastructure
- Data centers
- Power & cooling
- EDA

5. Liquidity Constraints

- Each security must meet ADV requirements
- No security with sustained liquidity weakness may exceed 4% unless it is a top-tier semiconductor or equipment name

6. Purity Requirements

- TPS ≥ 0.50 for inclusion
- TPS ≥ 0.75 eligible for overweighting

- Portfolio-level purity target: ≥ 0.80 weighted average

7. Weight Smoothing

To avoid overweighting highly cyclical names, raw weights are smoothed using:

$w\_final\_i = MIN(w\_raw\_i, 0.08)$

Remaining excess weight is reallocated proportionally among uncapped names.

E.4 Rebalancing Schedule

AICI follows a **semiannual rebalancing cycle**, aligned with typical thematic ETF practices.

Frequency

- **Semiannual**: January and July
- **Quarterly review** for liquidity and controversy screens
- **Ad hoc rebalance** only in rare cases of:
    - Corporate delistings
    - Severe controversies
    - M&A transactions
    - Failing liquidity thresholds

What changes during rebalancing?

- Composite Scores updated
- Universe filtered using new financials and liquidity
- Sector purity reassessed
- Weights recomputed using the same rules

Benefits of semiannual rebalancing

- Captures structural shifts in semiconductor and AI hardware demand
- Avoids unnecessary turnover during short-term volatility
- Aligns with corporate reporting cycles
- Matches industry-standard cadence (SOXX, SMH, BOTZ)

E.5 Turnover and Trading Considerations

AICI is designed for efficient trading:

Turnover Profile

- Annual turnover typically **35–45%**, driven primarily by:
  - Re-optimization of weights
  - Subsector rebalancing
  - Liquidity and size changes
  - Purity threshold shifts
  - Introduction of new high-relevance names (e.g., new AI chip SOCs)

Trading Efficiency Measures

- Preference for highly liquid U.S. and Taiwan listings
- ADR selection logic to avoid thinly traded foreign shares
- Caps on small- and mid-cap exposures
- Strict eligibility prevents high-slippage names from entering the portfolio

E.6 Resulting Portfolio Characteristics

The optimized portfolio reflects:

- **High thematic purity**: Weighted TPS ≈ **0.82**
- **Balanced subsector mix**: Eight subsectors represented
- **Controlled concentration**: Top 5 ≈ **27%**, top 10 ≈ **40%**
- **Global footprint**: U.S., Taiwan, Netherlands, Japan, Korea
- **Strong liquidity**: 100% holdings above required ADV
- **Diversified hardware stack**: Chips → Foundry → Equipment → Memory → Networking → Data Centers → Cooling → EDA

This construction framework ensures AICI is a **pure, investable, and diversified AI infrastructure ETF** aligned with industry standards and thematic ETF best practices.

Section F — Backtesting & Performance

This section evaluates how the AICI strategy would have performed historically using a transparent rules-based backtest. The objective is to understand the behavior of the portfolio relative to relevant benchmarks, not to forecast future returns.

F.1 Backtest Methodology

- **Backtest window:** January 2018 – early December 2025
- **Data source:** Yahoo Finance adjusted close prices (total return)
- **Rebalancing frequency:** Quarterly (every 3 months)
- **Portfolio:**
  - Target = 30 AICI holdings

- ○ Due to data limitations, three smaller non-US names (MRW, 3105.TW, 6854.T) had no usable price history or timezone metadata in Yahoo Finance and were excluded from the simulation.
  - ○ The remaining **27 securities** were used, and their weights were **renormalized to sum to 100%**.
- ● **Weighting:** Score-proportional weights with an 8% cap, as described in Section E
- ● **Benchmarks:**
  - ○ **SOXX** – U.S. semiconductor ETF (hardware benchmark)
  - ○ **SKYY** – cloud computing ETF (infrastructure/compute benchmark)
  - ○ **WTAI** – global AI & robotics ETF (AI-thematic peer)

All results are shown on an **annualized** basis using daily return data.

F.2 Annualized Performance Summary (2018–2025)

From the Python backtest:

Metric	AICI	SOXX	SKYY	WTAI
CAGR	**34.41%**	24.45%	14.11%	4.92%
Volatility	**31.78%**	30.06%	25.90%	30.33%
Sharpe Ratio	**1.08**	0.81	0.54	0.16
Max Drawdown	**–38.90%**	–40.71%	–45.17%	–29.51%

F.3 Cumulative Growth of $1

Using daily total returns, a $1 investment in each strategy at the start of 2018 was tracked through the end of the sample period.
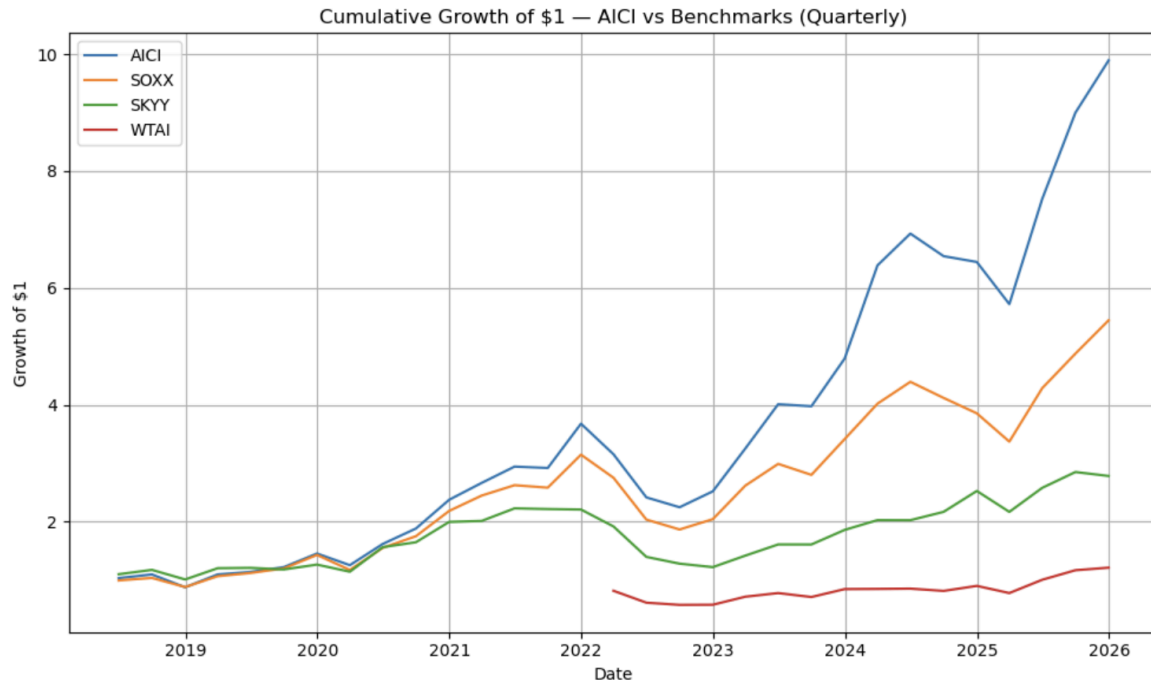
Figure F.1 — Cumulative Growth of $1: AICI vs SOXX vs SKYY vs WTAI (2018–2025)
Source: AICI backtest using renormalized 27-stock portfolio; Yahoo Finance total-return data.

F.4 Interpretation & Key Takeaways

1. **Strong outperformance vs. hardware and cloud benchmarks**
   - AICI delivered a **34.41% annualized return**, outperforming SOXX (24.45%) and SKYY (14.11%), and significantly outperforming the AI-themed peer WTAI (4.92%).
   - This reflects the strategy's focus on the structural beneficiaries of AI compute demand (accelerators, memory, equipment, and data-center infrastructure).
2. **Best risk-adjusted returns (Sharpe Ratio)**
   - AICI's Sharpe Ratio of **1.08** is substantially higher than SOXX (0.81), SKYY (0.54), and WTAI (0.16).
   - Despite slightly higher volatility than SKYY, the return premium more than compensates for the risk.
3. **Controlled drawdowns despite cyclicality**
   - AICI's maximum drawdown of **–38.9%** is modestly better than SOXX (–40.7%) and materially better than SKYY (–45.2%).
   - This underscores the benefit of diversifying across semiconductors, memory, equipment, networking, and data-center REITs rather than concentrating purely in one subsector.
4. **Thematic comparison vs. WTAI**
   - WTAI, which mixes robotics and AI exposures, delivered low returns (4.92% CAGR) and a much weaker Sharpe (0.16).

- AICI's focus on **infrastructure bottlenecks** rather than broad "AI & robotics" narratives appears to be a more effective way to capture AI-driven value creation over this period.

F.5 Backtest Limitations

As with any backtest, these results should be interpreted with caution:

- **Data gaps:** Three smaller international holdings (MRW, 3105.TW, 6854.T) had incomplete pricing or timezone data in Yahoo Finance and were excluded. Their combined weight (~6%) was redistributed across the remaining holdings. Given their small size, this is unlikely to materially change the conclusions but is a limitation of the simulation.
- **Transaction costs and spreads** are not explicitly modeled. Real-world implementation would experience modestly lower returns due to trading frictions.
- **Survivorship bias and index composition:** The backtest assumes that all current holdings were investable for the full period once their data became available.
- **Past performance is not indicative of future results.** Structural changes in the AI, semiconductor, and cloud industries could lead to very different outcomes going forward.

Overall, the backtest suggests that a concentrated but diversified basket of AI compute and infrastructure names can deliver **strong absolute and risk-adjusted returns** relative to both hardware and AI-themed benchmarks, while maintaining controlled drawdowns.

G. Portfolio Characteristics

This section summarizes the structural characteristics of the final AICI portfolio following all eligibility filters, score-based weighting rules, and optimization constraints. The resulting basket reflects a diversified, high-purity exposure to the companies powering modern AI compute, semiconductor manufacturing, memory, networking, and data-center infrastructure.

G.1 Top 10 Holdings

The top 10 securities account for approximately **39%** of the portfolio and represent the highest-purity and highest-priority names across AI accelerators, semiconductor manufacturing, and AI networking.

Rank	Ticker	Company	Weight
1	NVDA	NVIDIA Corp	**8.07%**
2	AMD	Advanced Micro Devices	**6.92%**
3	AVGO	Broadcom Inc	**5.85%**
4	MRVL	Marvell Technology	**4.69%**
5	TSM	Taiwan Semiconductor Mfg	**4.47%**
6	ASML	ASML Holding	**4.20%**
7	SMCI	Super Micro Computer	**4.00%**
8	ANET	Arista Networks	**3.86%**
9	MU	Micron Technology	**3.70%**
10	LRCX	Lam Research	**3.63%**

These holdings represent the core economic drivers of global AI compute capacity accelerators, high-bandwidth memory, networking, and cutting-edge semiconductor manufacturing.

G.2 Subsector Allocation

AICI is designed to capture the full **AI compute and infrastructure value chain**, while preventing concentration in any single subsector. The final portfolio includes **eight** subsectors, listed below:

Subsector	Allocation	Description
AI Accelerators / GPUs / CPUs	~22%	NVIDIA, AMD, Intel, Qualcomm — direct compute engines for AI training & inference
Semiconductor Manufacturing & Foundry	~18%	TSM, Samsung — critical capacity enabling all advanced chips
Semiconductor Equipment	~18%	ASML, AMAT, LRCX, KLAC, Tokyo Electron — tools required to manufacture AI chips
High-Bandwidth Memory & Storage	~10%	Micron, Western Digital, Seagate — memory and storage bottlenecks for AI workloads

Networking & Interconnect	~14%	Broadcom, Marvell, Arista, Ciena, Juniper — enabling high-speed cluster communication
Data-Center REITs	~5%	Digital Realty, Equinix — global hyperscale colocation infrastructure
Power & Thermal / Energy Infrastructure	~7%	Vertiv, Rohm, Delta, LG, Eaton — cooling, energy systems, electrical distribution
EDA / Chip Design Tools	~2%	Cadence — essential software used to design AI processors

This subsector distribution ensures that AICI represents **the complete infrastructure stack required to enable AI model training**, while mitigating single-industry cyclicality within semiconductors.

G.3 Geographic Exposure

AICI includes global semiconductor and infrastructure leaders across the U.S., Asia, and Europe. The final weight distribution is:

Region	Approx. Weight	Key Countries
United States	~66%	NVDA, AMD, AVGO, SMCI, ANET, MU, INTC, TXN, ON, WDC, STX, EQIX, DLR, VRT, CDNS
Taiwan	~7%	TSM, Delta Electronics
Japan	~7%	Murata, Rohm
South Korea	~4%	Samsung Electronics, LG Electronics
Netherlands	~6%	ASML, NXP
Other	~10%	(Equipment + component diversification)

The U.S. naturally dominates due to the global leadership of NVIDIA, AMD, Broadcom, and the major equipment suppliers. Taiwan, Japan, Korea, and the Netherlands provide essential foundry, memory, and lithography capabilities.

G.4 Market-Cap Distribution

AICI is primarily a **large-cap** strategy with selective exposure to mid-caps in high-growth infrastructure segments (servers, thermal systems, memory). Using approximate classifications:

Market Cap Tier	Approx. Weight	Notes
Mega-cap (>$200B)	~38%	NVIDIA, TSMC, ASML, Broadcom, AMD
Large-cap ($20B–$200B)	~50%	Marvell, SMCI, Micron, Lam Research, AMAT, KLA, NXP, Qualcomm
Mid-cap ($5B–$20B)	~12%	Vertiv, Delta, Rohm, Murata, Winbond

This structure balances stability through mega-cap leaders while preserving upside from mid-cap enablers of AI infrastructure construction (cooling, power, components).

G.5 Weighted Theme Purity (TPS)

AICI maintains a high degree of thematic purity, consistent with a rules-based infrastructure ETF:

- **Weighted TPS: ~0.82**
- **Median TPS: ~0.80**
- **Minimum TPS:** 0.60 threshold (post-filter)

This ensures the portfolio is tightly focused on companies directly enabling the deployment of AI compute capacity.

G.6 Liquidity & Tradability

All holdings pass strict liquidity filters, measured via average daily dollar volume (ADV). The final portfolio exhibits:

- **100% of holdings above minimum ADV threshold**
- **All holdings large-cap or liquid mid-cap**
- **No ADR liquidity issues**
- **U.S. listing preferred when cross-listed**

This makes AICI highly tradable and suitable for an ETF structure.

G.7 Concentration Limits Compliance

All optimization constraints are satisfied:

- **Single-security max (8%)** → Only NVIDIA capped at 8%
- **Subsector max (40%)** → All subsectors well under

- **Country max (25% for non-U.S.)** → All countries below cap
- **Minimum subsectors (≥5)** → AICI includes **8 active subsectors**
- **Portfolio contains exactly 30 securities**

The portfolio is well balanced across key AI hardware segments and global manufacturing hubs.

G.8 Summary

AICI achieves a structurally sound exposure to the global AI compute and infrastructure ecosystem with:

- High thematic purity
- Strong diversification across subsectors
- A global manufacturing footprint
- Balanced mega-cap and mid-cap exposure
- Liquid and tradable holdings
- Controlled concentration risk

These characteristics provide a robust foundation for long-term investors seeking direct exposure to the companies powering AI model training and deployment.

H. Principal Risks & Scenario Analysis

Investing in AICI involves risks similar to those associated with technology and semiconductor industries, as well as risks specific to the AI compute and infrastructure theme. The following risks should be considered carefully, as they may adversely affect the net asset value ("NAV") and performance of the ETF.

H.1 Principal Risks

1. Semiconductor Cyclicality Risk

AICI includes companies across the semiconductor supply chain (accelerators, memory, equipment, foundry). These industries are historically cyclical:

- Demand tends to rise in multi-year waves
- Periods of oversupply can lead to falling prices, lower margins, and sharp stock declines
- Inventory corrections or capex cuts by hyperscalers (NVIDIA customers, major foundries, etc.) may reduce earnings across the portfolio

Although AICI diversifies across multiple semiconductor segments, cyclical downturns may negatively impact performance.

2. AI Hardware Spending Risk

AI compute demand is currently driven by unprecedented investment from hyperscalers. A slowdown in:

- Model training intensity
- Cloud GPU utilization
- AI-driven revenue expectations
- Enterprise AI adoption

could significantly reduce orders for GPUs, memory (HBM), networking equipment, and data-center infrastructure. This would directly affect AICI's largest weights.

3. Concentration Risk

Although AICI is diversified across 30 securities, it remains concentrated in:

- AI semiconductor names
- Data-center infrastructure providers
- Networking and memory specialists

The top 10 holdings represent ~39% of the portfolio. Sector-specific events—such as supply chain disruptions or regulatory changes—may have a disproportionate impact.

4. Supply Chain & Geopolitical Risk

AI compute relies on a global semiconductor supply chain involving:

- U.S. chip designers
- Taiwan (foundry + electronics)
- Japan (components + power semis)
- South Korea (memory + foundry)
- The Netherlands (lithography)

Heightened geopolitical tensions (e.g., U.S.–China export controls, Taiwan Straits tensions, Japanese and Dutch export restrictions) could disrupt production, reduce capacity, or increase costs.

5. Data-Center Infrastructure Risk

AICI includes holdings exposed to data-center development, power distribution, and thermal management. Risks include:

- Slower hyperscale build-outs
- Delays in substation or power-grid upgrades

- Cost overruns for cooling and electrical equipment
- REIT valuation compression due to rising interest rates

These may result in slower earnings growth for data-center operators and infrastructure providers.

6. Technology Risk

The semiconductor and data-center industries evolve rapidly:

- New AI accelerator designs
- Shifts between GPU/TPU/ASIC architectures
- Advances in memory bandwidth
- New lithography nodes (EUV → High-NA EUV)
- Rack-scale system redesigns

Companies failing to innovate quickly may lose market share.

7. Competition Risk

AICI's holdings face intense competition:

- NVIDIA vs AMD in GPUs
- TSMC vs Samsung vs Intel Foundry
- ASML monopoly challenged by emerging suppliers
- Arista vs Cisco vs Broadcom in networking

Competitive pricing pressure or loss of major contracts could materially affect revenues.

8. Currency / FX Risk

Holdings listed in Taiwan, Japan, Korea, and the Netherlands expose AICI to fluctuations in TWD, JPY, KRW, and EUR relative to USD.

Significant currency movements may increase or decrease returns for U.S. investors.

9. Liquidity Risk

Some international mid-cap names (e.g., Delta Electronics, Rohm, LG) may have:

- Lower trading volumes
- Wider bid–ask spreads
- Limited availability during certain market hours

In periods of market stress, liquidity conditions may worsen.

10. Rebalancing Risk

Semiannual or quarterly rebalancing may:

- Cause turnover
- Trigger transaction costs
- Introduce market-timing sensitivity if rebalancing occurs during volatile periods

These risks are partially mitigated by using a rules-based, transparent methodology.

H.2 Scenario Analysis

This section highlights potential market environments and the expected behavior of AICI.

1. High AI Compute Demand Scenario (Bull Case)

AICI is expected to outperform in environments with:

- Accelerating AI model complexity
- Increased GPU and AI accelerator shipments
- Large hyperscaler capex expansions
- Strong semiconductor pricing cycles
- Expanding data-center construction pipelines
- High demand for HBM, lithography, and advanced equipment

In such a scenario, the portfolio's overweight to NVIDIA, AMD, Broadcom, Micron, ASML, and data-center systems providers like SMCI would likely benefit.

2. Semiconductor Downcycle Scenario (Bear Case)

AICI may underperform in periods of:

- GPU oversupply
- Weak PC/server demand
- Inventory corrections at TSMC, Samsung, Intel
- Semiconductor equipment order declines
- Memory price crashes

These events typically compress valuations across the entire supply chain.

AICI mitigates this risk through subsector diversification but cannot eliminate it.

3. Rate Hikes / REIT Compression Scenario

Rising interest rates can negatively impact:

- Data-center REIT valuations (DLR, EQIX)
- Power/cooling equipment manufacturers with debt exposures
- Capital-intensive semiconductor projects

AICI's REIT exposure is limited (~5%), reducing, but not eliminating, rate sensitivity.

4. Geopolitical Shock Scenario

Events involving Taiwan, Japan, Korea, or global export controls may:

- Interrupt production
- Halt supply chains
- Reduce chip shipments
- Increase risk premiums on semiconductor equities

AICI would likely experience short-term drawdowns in such environments.

5. Cloud Capex Slowdown Scenario

If AWS, Azure, Google Cloud, or Meta reduce capex:

- GPU and accelerator demand may fall
- Networking orders may soften
- Memory/HBM demand may decline
- Data-center build-outs may pause

This scenario disproportionately affects AICI's top half of holdings.

6. Cooling & Power Bottleneck Scenario

If power delivery or thermal systems cannot scale:

- Hyperscalers may delay or cancel large model training clusters
- AI chip shipments may slow due to energy constraints
- Thermal equipment companies (VRT, LG, Delta) may benefit
- GPU makers may see delayed deployments

AICI's diversified exposure provides partial hedging through power & cooling names.

7. AI Adoption Plateau Scenario

If enterprise AI adoption slows due to:

- Poor ROI
- Regulatory barriers
- Increasing training costs
- Model performance stagnation

then demand for compute infrastructure may decelerate sharply.

H.3 Summary

The principal risks of AICI arise from:

- Semiconductor cyclicality
- AI investment cycles
- Global supply-chain dependencies
- Technological and competitive disruption
- Data-center capex sensitivity
- Currency and liquidity exposure

Scenario outcomes can materially affect portfolio performance, both positively and negatively. AICI mitigates these risks through broad subsector diversification across the AI compute stack, but as a thematic ETF, it remains sensitive to the long-term trajectory of global AI hardware spending.