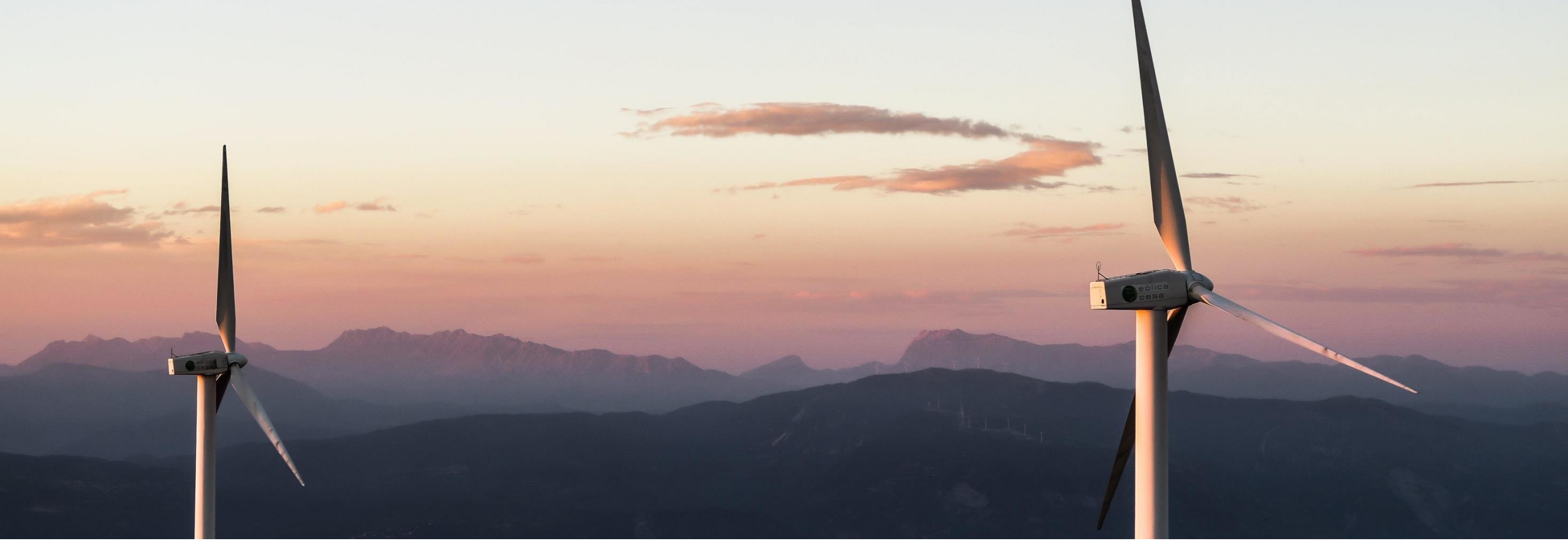


5-Year Growth Strategy for AI-in-ESG Company

2025 Bain Cup Case Competition | SPY POTATO

BAIN & COMPANY

Executive Summary: AI-in-ESG Co. should adopt *"IPSP"* strategy to integrate the entire VPP[1] chain, aiming to become a VPP industry leader by 2030.

Market Analysis

Market Overview	Consumer Analysis	Competitor Analysis
• Surging demand, RE growth, AI penetration, and policy supports drive the VPP boom • Midstream VPP is a **blue ocean** with vast growth potential	• The consumer market is split into upstream and downstream for staged expansion • Identify KPCs[2] across distinct consumer segments	• The distributed energy sector is still nascent, offering strong growth potential for startups • AI-in-ESG Co. emphasizes its flexibility in growth and integration

Purposed Strategy

***"IPSP" strategy** integrates the entire VPP value chain, building a closed-loop advantage for renewable energy AI SaaS*

***I**ntegration System*	***P**latform Services*	***SC**[4] Intelligence*	***P**rofiling Services*
Form DG[3] alliances, evaluate flexibility, and prioritize smart subsidies for efficient grid balancing	**Unlock aggregated supply**, provide AI-based siting and O&M services to enhance supplier loyalty and dispatch agility	**Break the bidding barrier**, drive market-oriented pricing by providing upstream visibility and actionable supplier insights	**Shape user profiles**, utilize smart meter data to create dynamic user response profiles and support upstream pricing

Impact

By 2030, net profit is projected to reach ***4.63M RMB***, and the AI-in-ESG Co.'s valuation will be ***2,111.73M RMB***.

Position the AI-in-ESG Co. as the leading AI-driven SaaS provider in the VPP industry, enabling consumers to achieve their ESG objectives.

Notes: [1]VPP stands for Virtual power plant; [2]KPC stands for key purchasing criteria; [3]DG stands for distributed generation; [4]SC stands for supply chain.

Agenda

Market Analysis

- *Market Overview*
- *VPP Industry Overview*
- *Consumer Analysis*
- *Competitor Analysis*

Strategy Recommendation

- *Strategy Overview*
- *S1T1 – Integration Platform Strategy*
- *S1T2 – Platform Services Strategy*
- *S2T1 – SC Intelligence Strategy*
- *S2T2 – Profiling Services Strategy*

Implementation

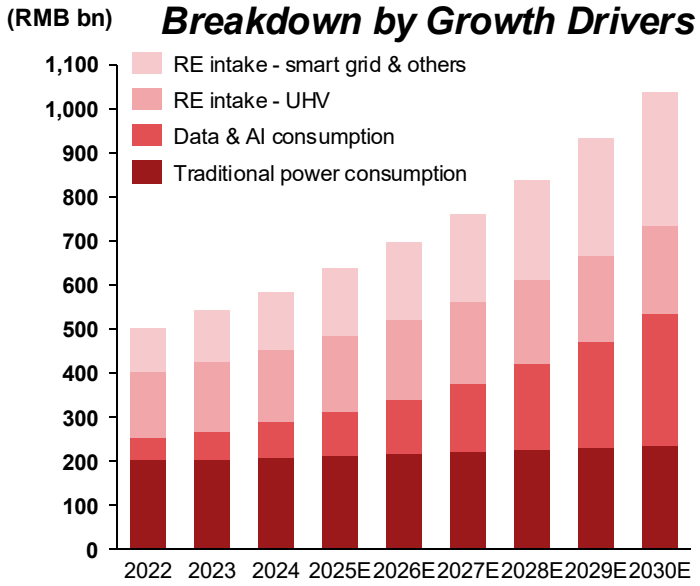
- *Financial Forecast*
- *Implementation Timeline & Risk Mitigation*

Market Overview: From RE-AI Fusion to VPP Scale, unlock 2035's 171bn RMB Grid Modernization Frontier.

Primary Contributors

Electricity Demand	RE Capacity (Supply)	AI Penetration	Policy Support
· **2023:** 9.2 TWh (***+6.7%*** YoY) · **2024:** 9.9TWh (***+6.8%*** YoY)	· **2023:** 151.6GW (***52%*** share[1]) · **2024:** 189.0GW (***+25%*** YoY) · **Q1 2025:** reach 196.6GW	· **Global CAGR:** ***24.54%*** (2024-2029E) · **CN Coverage:** hit ***40%*** (2025E)	Since 2017, China has enacted ***8+*** relative national policies and ***10+*** supplemental local policies。

China Grid Investment[2] Breakdown by Growth Drivers

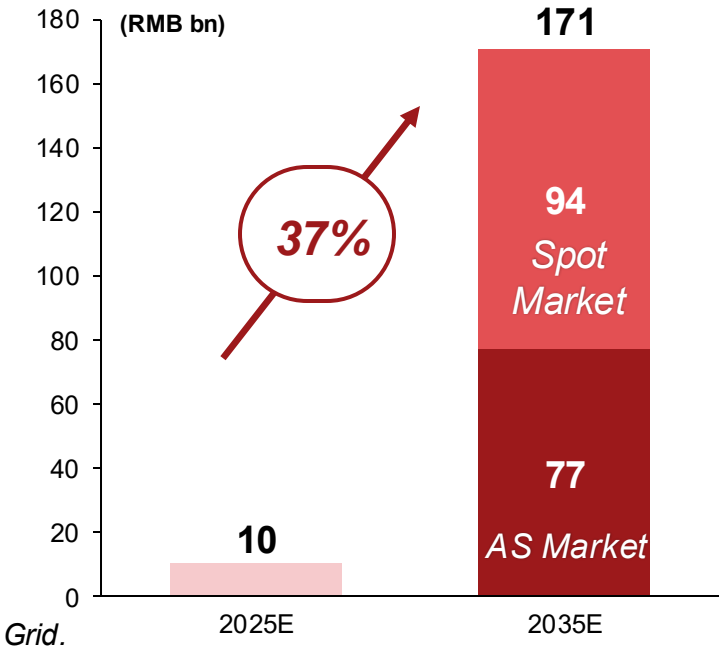


*RE & AI integrated solution captures **around 60%** of the total grid investment growth.*

	Adoption Constraints
Generation Side — *RE Power Plant*	• COPEX barriers • Compete with SOEs • Endemic Policy Flip Risks
Consumption Side — *Energy-Intensive Manufacturer*	• High CAPEX • Data silos Gaps • Weak policy enforcement
Adjustment Side ✓ — *Virtual Power Plant (VPP)*	**Segment Advantages** • 5-8 times lower CAPEX • Policy & ESG trend

With evolving AI techs and 15+ VPP policies as guidance…

2025E vs 2035E VPP Market Size



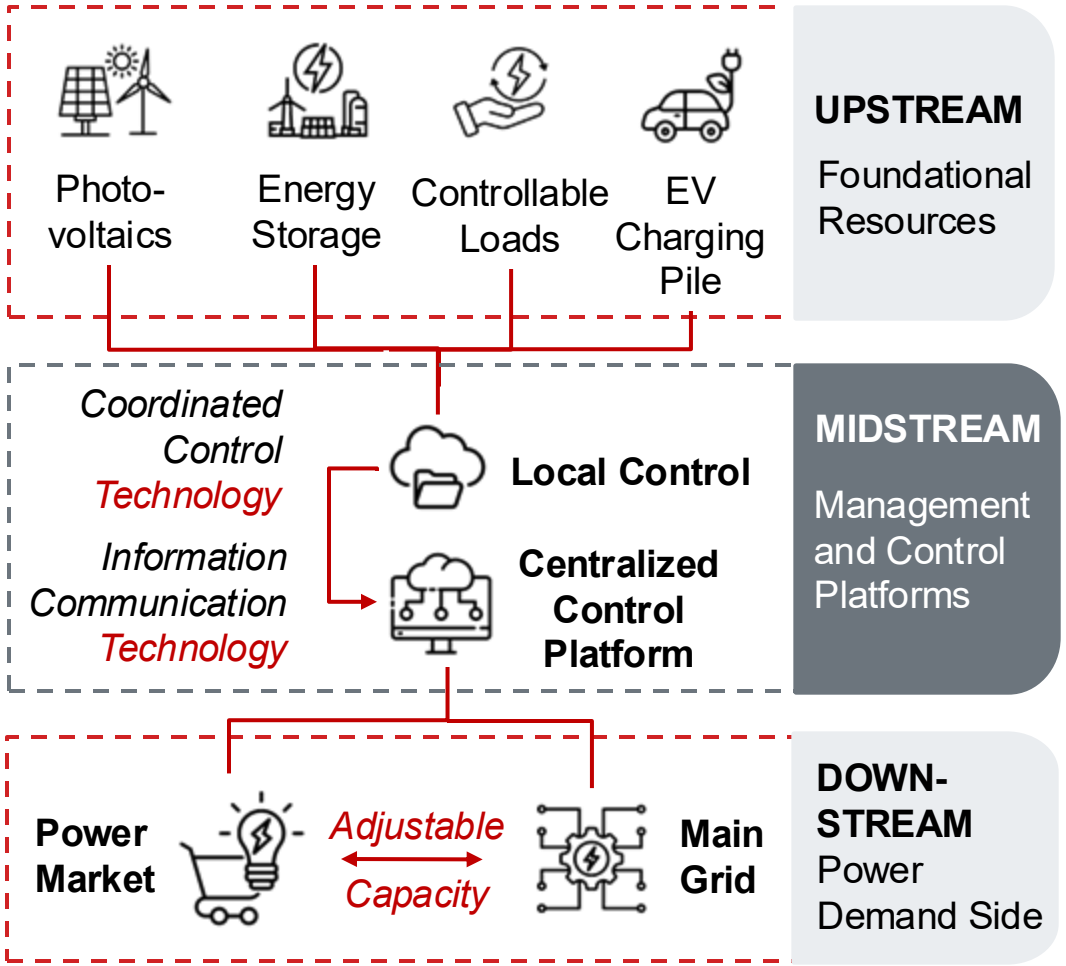
Notes: [1]Share refers to the percentage of total installed capacity; [2]China grid investment refers to the investment made by State Grid.

Source: NEA, CIRN, NDRC, Research & Markets, State Grid, Wind, Huatai Securities, S&P Analysis

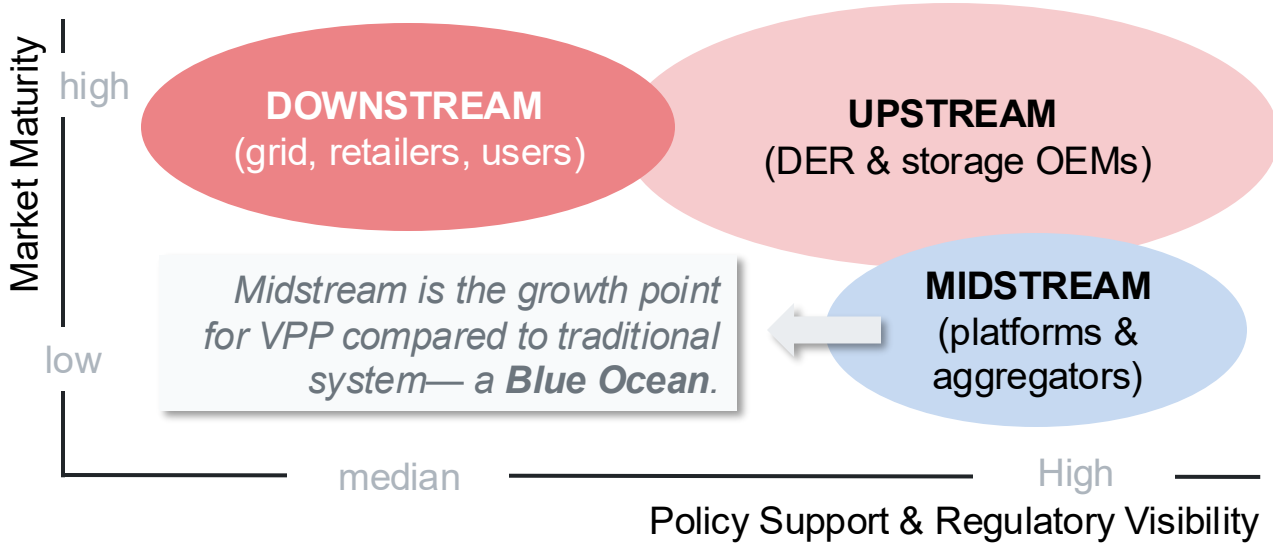
VPP Industry Insight: On the adjustment side, midstream in the VPP industry is positioned as the strategic business focus.

Definition: Virtual Power Plant (VPP) is an innovative system for the coordinated management of distributed energy resources.

VPP Industry Value Chain



VPP Industry Value Chain：Competitive Landscape



Profit Model

- Capacity tariff/subsidy for power infrastructure
- Distributed generation revenue
- Service fees earned through demand response dispatch participation

The Strategic Significance

- Facilitating electricity market liberalization
- Enhancing grid stability and operational flexibility
- Promoting ESG

Source: CMIF, S&P Analysis

Consumer Analysis: AI-in-ESG Co. should sequentially expand into UP and DW VPP segments based on their respective KPCs.

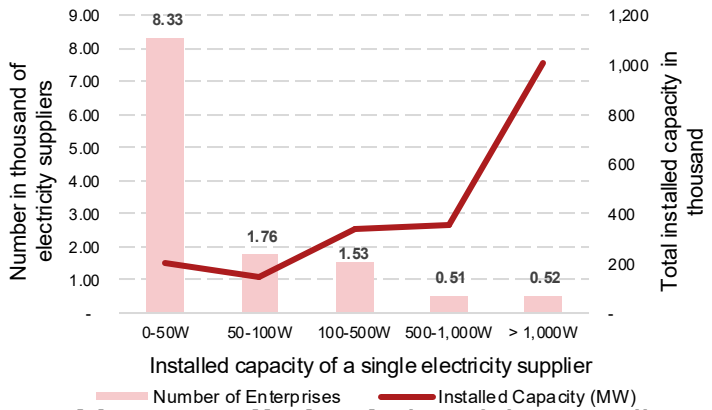
Current Target: UP Segment

As **cornerstone** of the SaaS platform, the upstream segment should be **prioritized** by AI-in-ESG company

- Business model more **straightforward**
- Technical implementation more **practical**

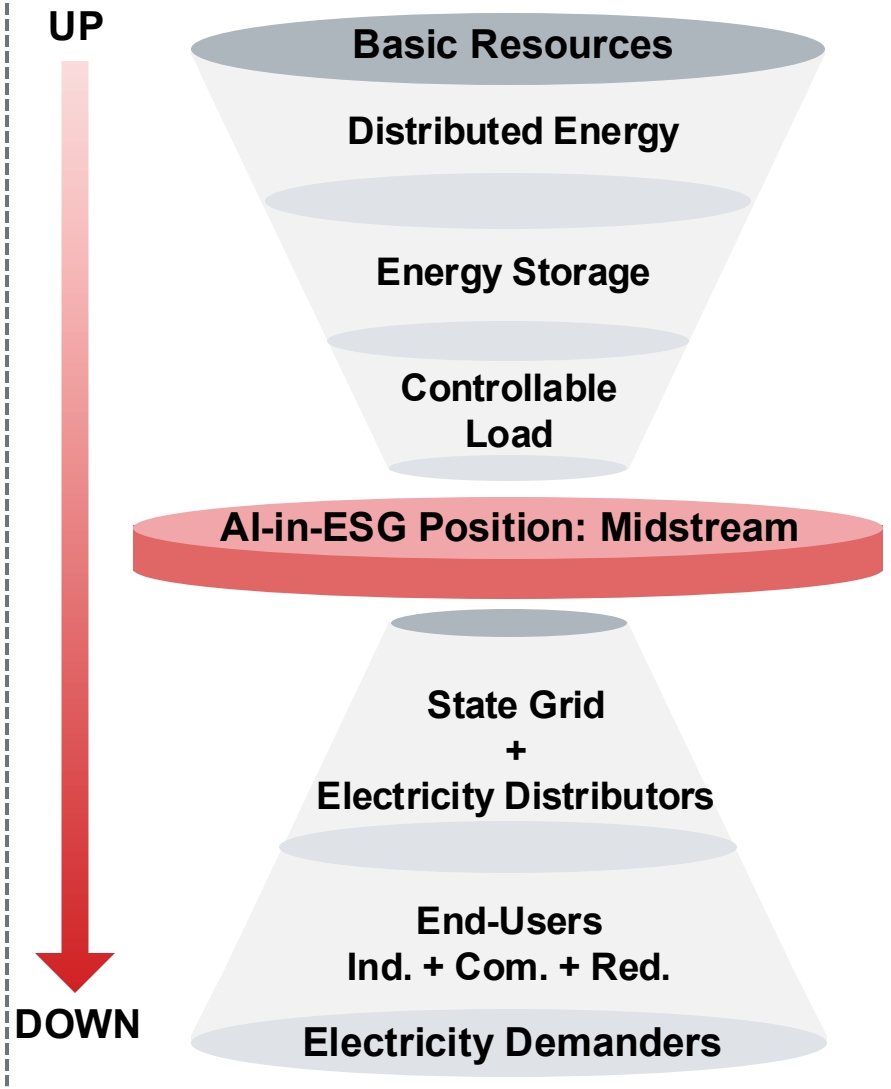
▶ UP Consumers Needs Analysis

KPC: Bargaining Power



- Many **small-sized** electricity suppliers
- But individual output is small, difficult to have **bargaining power**

AI-in-ESG Company Segments



Future Target: DOWN Segment

As the **strategic frontier** of scale and synergy, the downstream segment should be **actively developed**

- Business model more **lucrative**
- Closed-loop advantage for RE AI SaaS

▶ DOWN Consumers Needs Analysis

KPC: Latent Cost

- **Premium purchases** caused by inaccurate renewable supply forecasts
- **Costly dispatch** caused by demand misestimation

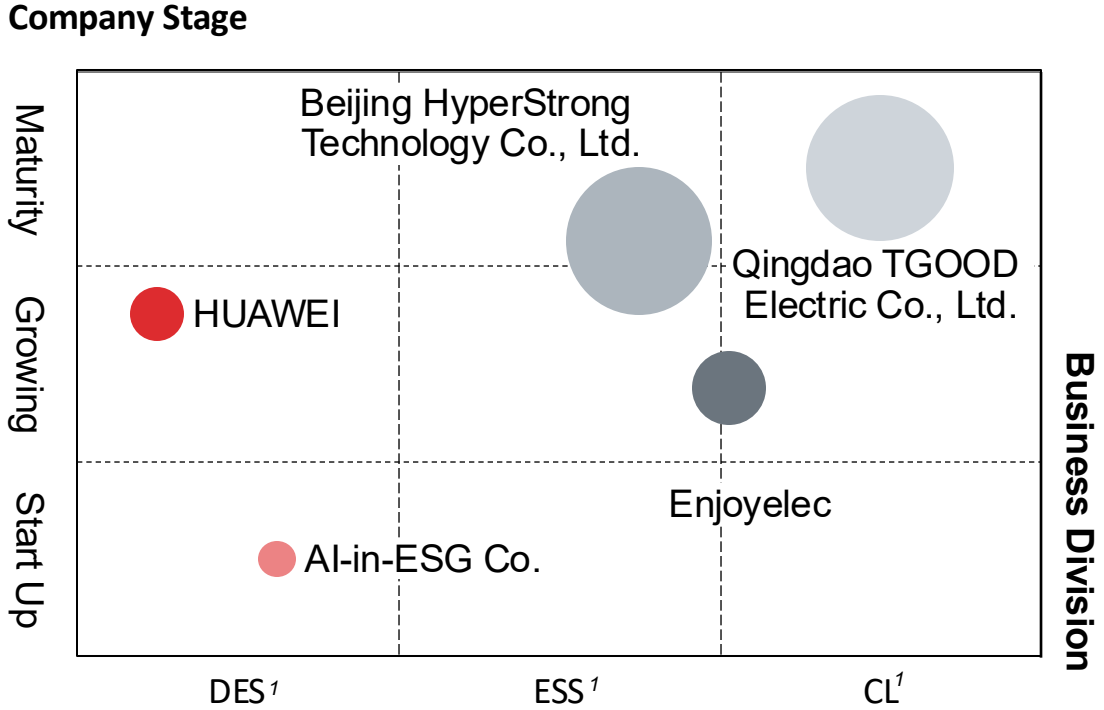
KPC: End User (EU) Data

- Smart meters with over ***95%* coverage**
- However, these data remain unused

Source: National Energy Administration, National Bureau of Statistics, Wind, 36Kr, S&P Analysis

Competitor Analysis: AI-in-ESG Co. has opportunity starting up in Distributed Energy System concerning its comparative features among competitors.

Competitor positioning – Entry Point



Segmentation Insight:

- In distributed energy system (DES), no monopoly corporation
- Less competitors in the DES market
- There are **a lot of potential business opportunities in the DES direction for start-up companies to chase**.

Note: [1]DES, ESS, CL stand for distributed energy system, energy storage system, and controllable load.

Comparative features of Competitors

		AI-in ESG Co.	HYPER STRONG	Enjoyelec 电享
Internal	Expenditure	Low	High	High
	Unit[2] Price	Low	High	Medium
	Expansion speed	Fast (Light Asset)	Slow (Heavy Asset)	Slow (Heavy Asset)
External	Market	Medium	Mid-to-High	Mid-to-Low
	Competition	Medium	Fierce	Fierce
	Policy	Support	Weakening	Support
	Environment	Low Constraint	Heavy Constraint	Medium Constraint

Core Comparative Advantage:

Light assets and high growth rate accelerate the integration and expansion of the industrial chain.

Note: [2]Unit refers to single service terminal sales for service users.

Source: S&P Analysis

Strategy Overview: The core service is to facilitate seamless coordination for the UP and DOWN markets, thereby supporting the marketization of VPPs.

Vision

AI-in-ESG Co.

Leverage the advanced AI tools to improve the operating efficiency and sustainability

Growth Strategy

S1 Aggregation
Scale AI's impact by aggregating supply-side players into a unified, intelligent dispatch system

S2 Profiling
Distill demand-side behavior through real-time transparency and user-specific profiling tools

Tactic Focus	***S1T1:*** Build a renewable energy aggregator of distributed power producers	***S1T2:*** Provide AI siting, storage, and maintenance services to upstream	***S2T1:*** Drive marketization with supply chain coorperation and agile policy alignment	***S2T2:*** Use smart meter a to build user segmentation for adaptive load and pricing
Rationale	· Leverage scale advantages for grid negotiation · Filtrate responsive suppliers for market-based dispatch	· Reduces O&M costs for suppliers · Deepens stickiness and data-sharing incentives	· Reduces information asymmetry in procurement · Enhances up & down readiness for policy	· Enables personalized incentive structures · Feeds demand signals upstream for smarter dispatch
	Improvement	Added Value & Innovation	Improvement	Improvement
Expected Outcome	**Expand supplier network** **Optimize system flexibility**	**Enhance upstream retention** **Accuracy & Controllability**	**Resolve pricing barriers** **Boost electricity marketization**	**Improve dispatch flexibility** **Raise pricing efficiency**

Source: S&P Analysis

S1T1 – Integration System: Integrate upstream distributed RE data to enhance bargaining power and improve supplier responsiveness.

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Supply Unify

FLOW: MID ← Aggregate ← Upstream

TECH:

- **Blockchain Platform**
  - *Smart contract*
  - *Automatic allocation algorithm*
  - *Hyperledger Fabric platform*
- **In-Out Cluster Evaluation**
  - *24/7 data tracking*
  - *NMI, RI, DBI indicators*
  - *Fuzzy clustering algorithm*

AI-Driven Integration Platform

▶ **Key pain points**

1. Inefficient distribution causing waste
2. Diminished bargaining power

Cross-Regional Power Generator Alliance
via AI-driven SaaS Platform

Built-in AI-assisted pricing

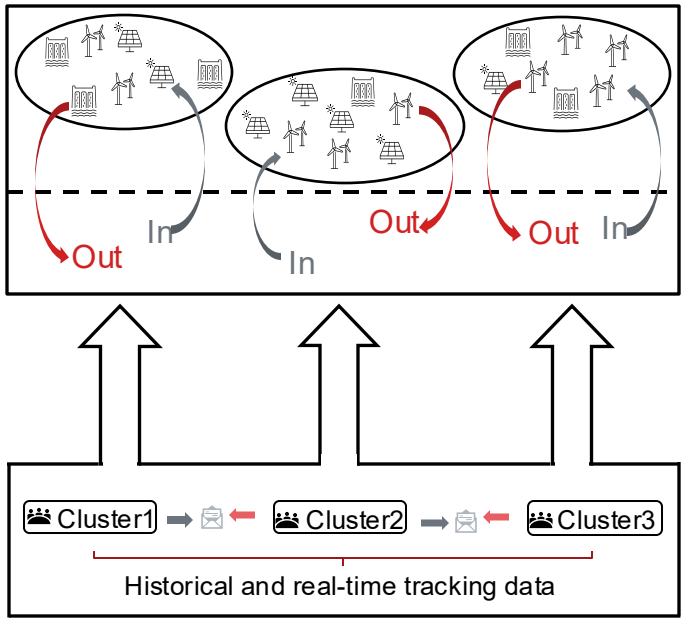
- Non-linear fitting
- Sample Learning
- Deep Learning

→

- Pricing **Reasonable**
- Downstream **acceptable**
- Upstream **profitable**

Provide the **better price** for suppliers

Dynamic Performance Evaluation System



1 In-Cluster Optimization

dynamic evaluation system

Target:

- **Elimination mechanism**
- Reliable electricity **output forecast**

2 Between-Cluster Optimization

Smart contract system driven by AI

Target:

- Total demand **satisfaction**
- **Volatility minimization**
- **Risk-reduction**

Maximize the **system's flexibility** for market demand

Source: Southeast University, STATE GRID, AVIC SECURITIES CO., LTD., S&P Analysis

S1T2 - Platform Services: Provide value-added service support for AI-driven site selection, energy storage maintenance, and operational trading.

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GridOps AI

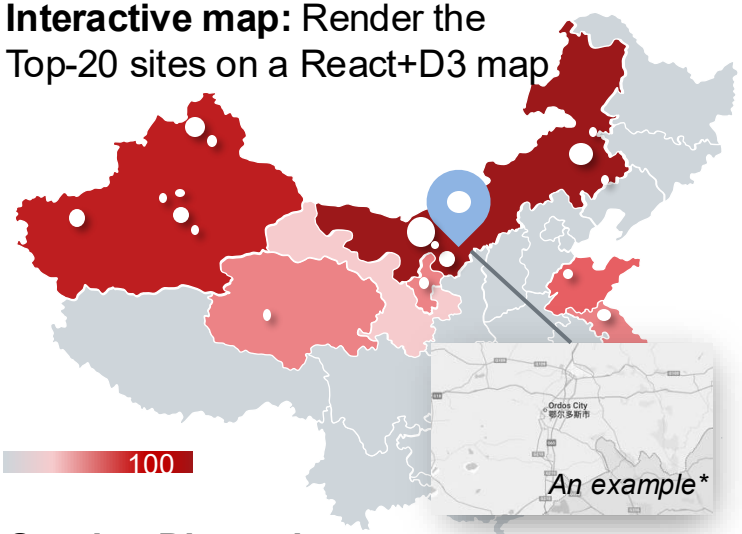
FLOW: MID → service → Aggregate → UP-RE Company

TECH:

- **Energy storage siting** — *GIS + Deep Regression*, *LSTM + XGBoost*
- **Predictive dispatch** — *Real-Time Data Fusion*, *Bayesian Neural Network*
- **Maintenance** — *GRU–VAE Anomaly Detection*

AI-driven Site Selection

Interactive map: Render the Top-20 sites on a React+D3 map



Scoring Dimensions:

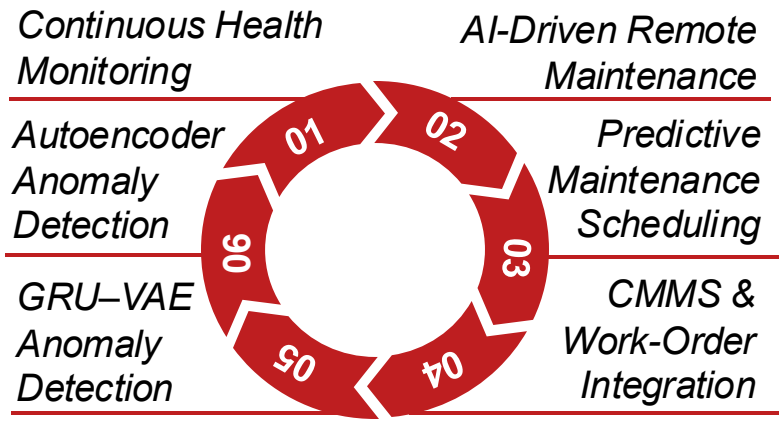
- Accessibility
- Land Cost
- Policy Incentives
- Revenue Potential

Report export:

- Download of Excel/PDF Reports (IRR forecast)

Energy Storage Maintenance

- **Timely identify potential faults, assign them to local O&M teams, and track** resolution progress.
- **Lifecycle modeling**
- **Maintainance assistant :** Built-in virtual



Operational Trading

Scientific Capacity Sizing	Calculate a cost-effective battery size	Saving Arbitrage Costs
Automated Dispatch	Optimal charge schedules	More Profitable
Sub-second Response	Continuously pulls market-price data	Phone Notifica-tions
Grid-access “Pass”	Evaluate interconnection risk	Avoiding approval delays

Source: arxiv, SpringOpen, researchgate, S&P Analysis

S2T1 - SC Intelligence: Deliver timely upstream and policy signals to downstream buyers, promoting upstream collective bargaining to advance marketization reforms.

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SC Bridge

FLOW: Aggregate UP-RE Company → Information → MID → Information → Grid

TECH:

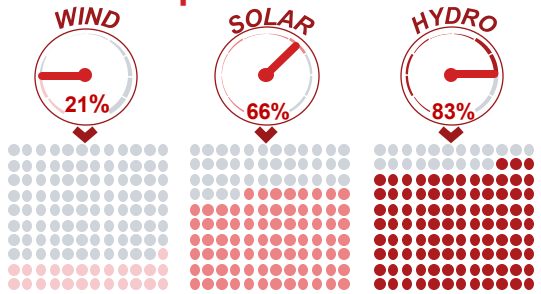
- **Gather & Scan**: *IoT, Blockchain NLP (LDA, BERT)*
- **Predictive Training**: *Deep Learning (Time Series Model, LSTM/GRU), ML*

▶ **Latent Costs from SC Bottlenecks:** Not only procurement contract price but also the following implicit expenditures need to be considered.

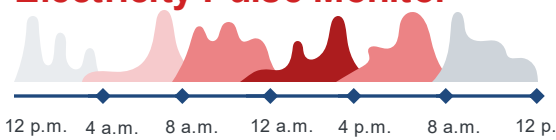
▷1. Fragmented Procurement ▷2. Upstream Blind Spots ▷3. Policy Response Lag ▷4. Misalignment with Up & Down

Power Generation Panel

Smart Dispatch Hub



Electricity Pulse Monitor



i. Enable **ML forecasts** with real-time & historical data.

ii. Deliver **dynamic panels** to grid dispatchers.

iii. Build **Energy Management System** for real-time grid health monitoring.

iv. Enable **edge-automated controls** (threshold alerts + AI dispatch actions).

Benefits

- Closed loop from data to action
- Stability & resilience in aligned operation

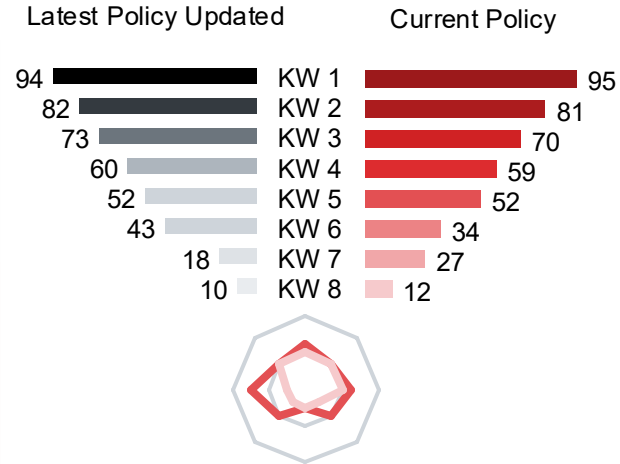
Policy Pulse Engine

i. Slice policy texts and **score urgency & impact**.

ii. **Map** policy signals to the VPP supply chain.

iii. **Simulate scenarios** in a digital sandbox to identify risk and catch opportunities.

iv. Generate **actionable** insights reports.



Note: [1]KW refers to the top several keywords ranking in different dimensions.

Benefits

- Agility & risk-aversion in proactive response
- Cross-tier synergy through the whole supply chain

Source: S&P Analysis

S2T2 – Profiling Services: Based on EU data, profile end users to enable precise demand control and pricing optimization.

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Demand DNA

FLOW:

MID ← service ← EU

TECH:

·EC Volatility Analysis
Spectral Analysis
Clustering Preprocessing
Hidden Markov Models

·End-User Clustering
K-Means
Hierarchical Clustering
Spectral Clustering

·Public Opinion Analysis
Natural Language Learning
Apache Kafka + Flink
Machine Learning

Dynamic EU Behavior Profiling

1. **Data Analysis**: Analyze smart meters data to extract load features and quantify consumption volatility

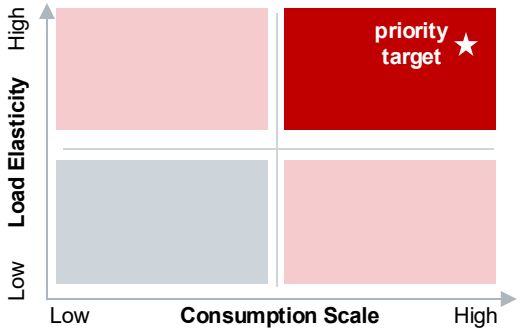
2. **User Profiling**: Generate concise load profiles from data analysis

   Key Features:
   - Load Elasticity
   - …

3. **EU Clustering**: Use AI for dynamic EU segmentation to cluster EU profiles under different feature criteria

4. **Precise Allocation**: During power shortages, target specific EU in different situation with subsidies

✓ **Target:** Precisely cut demand and ease shortages



Reverse-driven Dynamic Pricing Criteria

Data Collection

Historical Price → **Corresponding EU Response**

Price-related Indicators
- Price
- Fluctuation Range
- Volatility

Public Opinion
Sentiment signals on social media and news comments

Churn & Complaints
Complaint frequency, late payments, and sudden drops in usage

Quantified EU acceptance and satisfaction

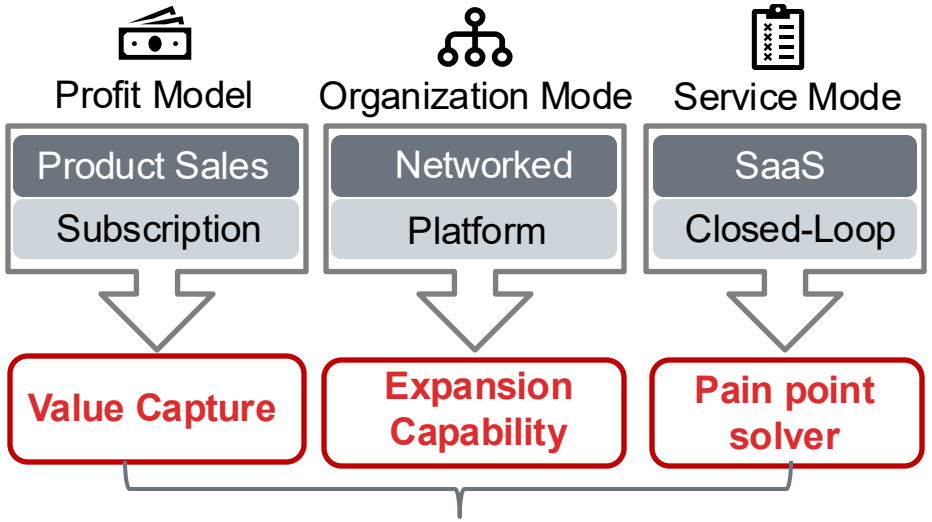
EU price sensitivity modeling to identify acceptable **price ceilings** and tolerance for the **slope of change**

✓ **Target:** Build an upward channel for dynamic EU price sensitivity modeling to **inform reverse pricing decisions**

Source: ACEEE, S&P Analysis

Financial Forecast: Optimistic phased growth based on excellent business model, achieving 12x revenue growth in 5 years.

Key Assumptions For Business Model



Excellent Sustainability & Efficiency

Predicted Market Expansion

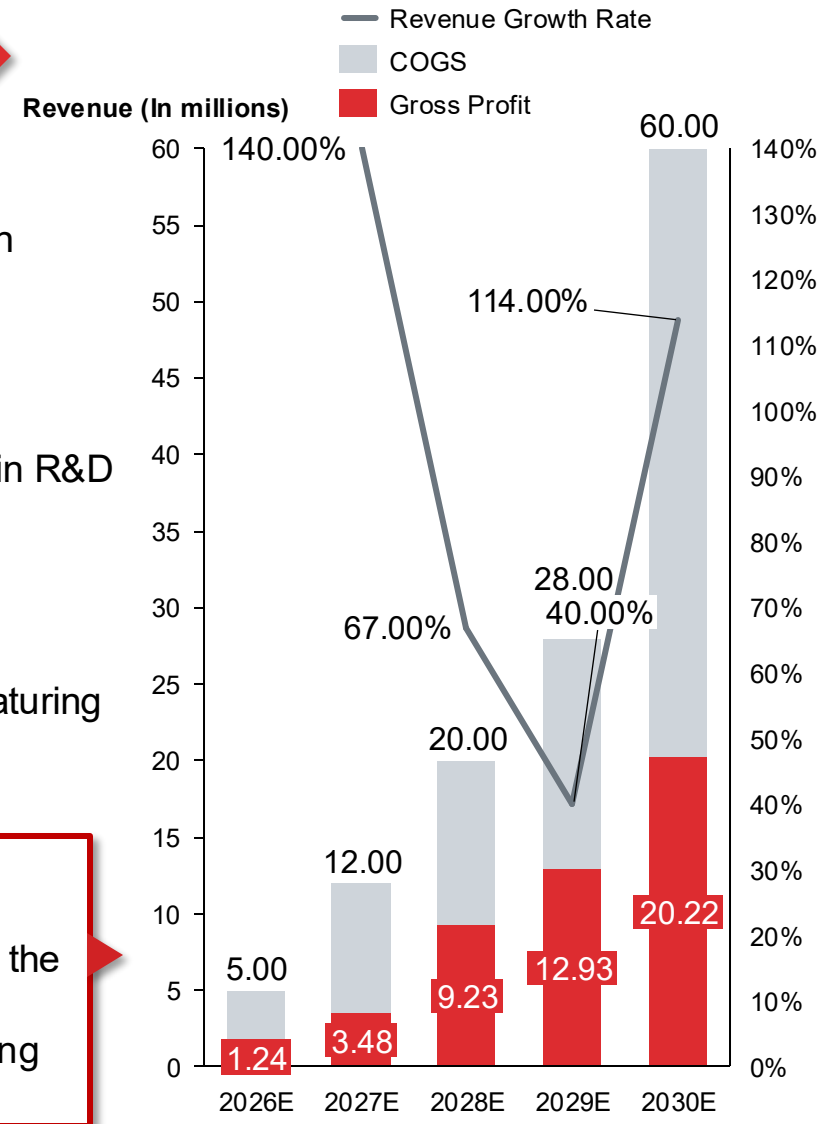
	2026E	2027E	2028E	2029E	2030E
Upstream	1000+	2400+	3600+	4000+	5000+
Downstream	-	-	100+	350+	1750+

5 Year Financial Performance

1 ***High-Growth Stage:***
Year 1-2 (2025-2027)
· Expand quickly with AI-driven targeting

2 ***Pleteau Stage:***
Year 3-4 (2027-2028)
· Due to the large investment in R&D and expansion

3 ***Matured Stage:***
Year 4-5 (2029-2030)
· Regain hypergrowth after maturing in operation & cooperation

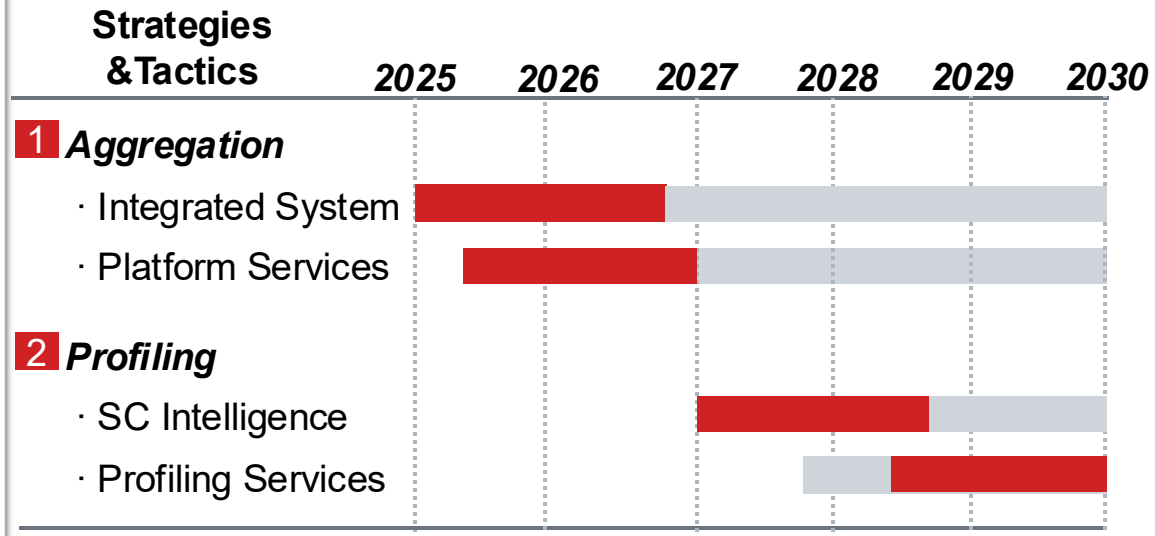


- Annual CAGR reaches ***64.37%***
- Achieved profitability for the company
- Top players in aggregating upstream DES

Source: S&P Analysis

Implementation: Utilizing a Three-Phase Value Capture Pattern From Aggregation to EU for Market Domination.

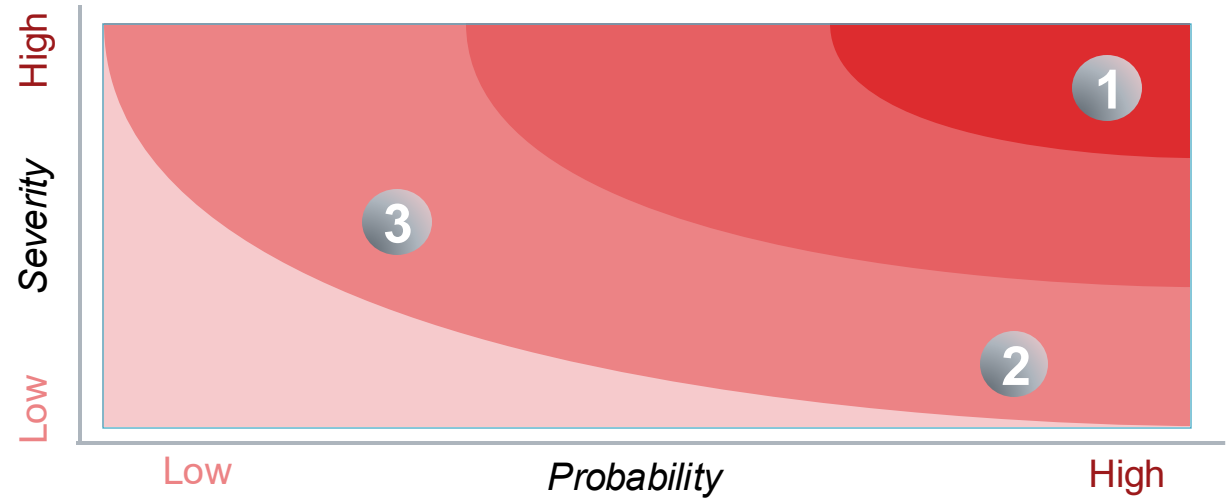
Implementation Timeline



Strategic Three-Phase Model

- Short Term: Year 1-2 (2025-2027)
  - · Rapidly Scale the Upstream Client Ecosystem
- Medium Term: Year 3 (2027)
  - · De-Bottleneck Value Chain and secure grid partnership
- Long Term: Year 4-5 (2028-2030)
  - · Penetrate end customers to capture mutually accretive value

Risk Mitigation



Risk	Mitigation
1 *Data Sovereignty & Privacy Compliance*	· Form an ESG Data Ethics Monitor Committee · Implement Opt-In Consent Mechanisms
2 *Competition with traditional SOEs*	· Speed up scale via private sector partnerships · Build barriers with patents and core tech
3 *Complexity from DER to connection infrastructure*	· Prioritize intra-cluster energy balancing · Advocate for *"VPP-Friendly Zones"* with streamlined interconnection approvals.

Source: S&P Analysis

Appendix Agenda

Appendix 1

VPP Industry Specific Nomenclature

Appendix 2 (ABCDE)

Primary Contributors in AI+ESG Market

Appendix 3

Investment in RE

Appendix 4

Regional Distribution Map of Energy Storage

Appendix 5

EU Profiling Standard and Process

Appendix 6 (ABC)

Financial Projection Model

Appendix 1: VPP Industry Specific Nomenclature

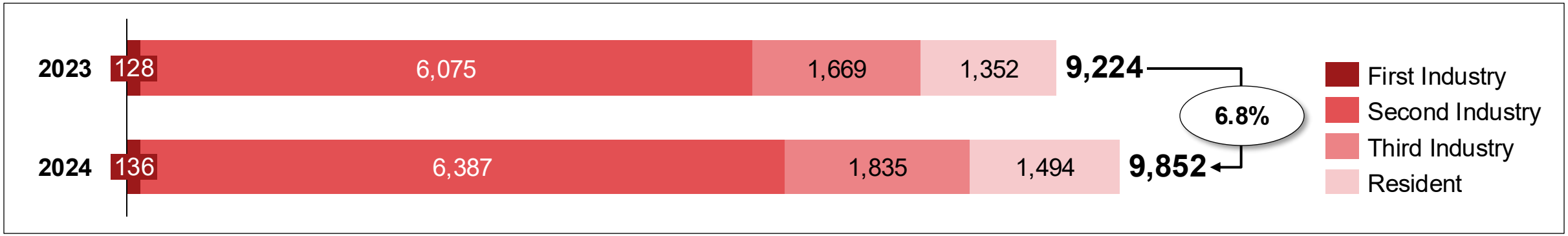
- **AS**: Auxiliary Service
- **CIRN**: China Industrial Research Net
- **Com.**: Commercial
- **CL**: Controllable Load
- **DBI**: Davies-Bouldin Index
- **DES**: Distributed Energy System
- **DG**: Distributed Generation
- **EC**: Electricity Consumption
- **ES**: Electricity Supplier
- **ESS**: Energy Storage System
- **EU**: End-Users
- **Ind.**: Industry
- **KPC**: Key purchasing criteria
- **NDRC**: National Development and Reform Commission
- **NEA**: National Energy Administration
- **NMI**: Normalized Mutual Information
- **O&M**: Operation and Maintenance
- **PGC**: Power Grid Company
- **PT Ltd.**: Power Trading Ltd.
- **RE**: renewable energy
- **Red.**: Resident
- **RI**: Rand Index
- **SaaS**: Software as a service
- **SOE**: State-Owned Enterprise
- **VPP**: Virtual power plant

Source: S&P Analysis

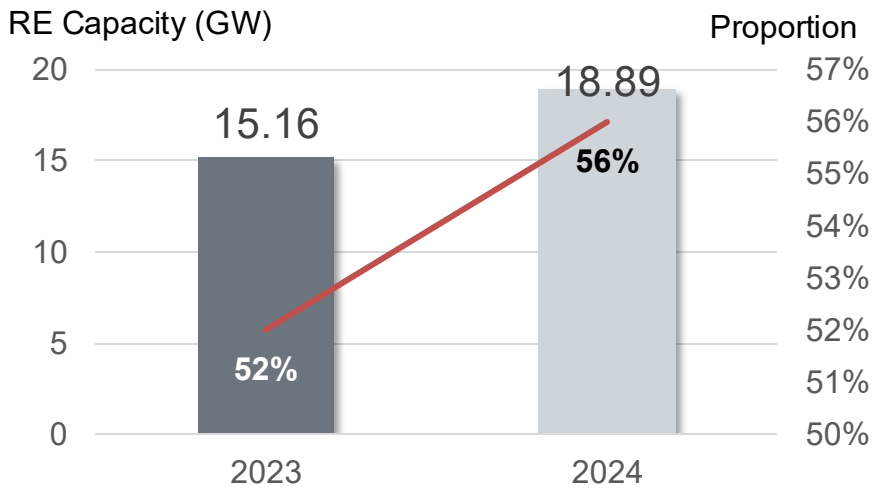
Appendix 2A: Primary Contributors in AI+ESG Market
(Market Overview)

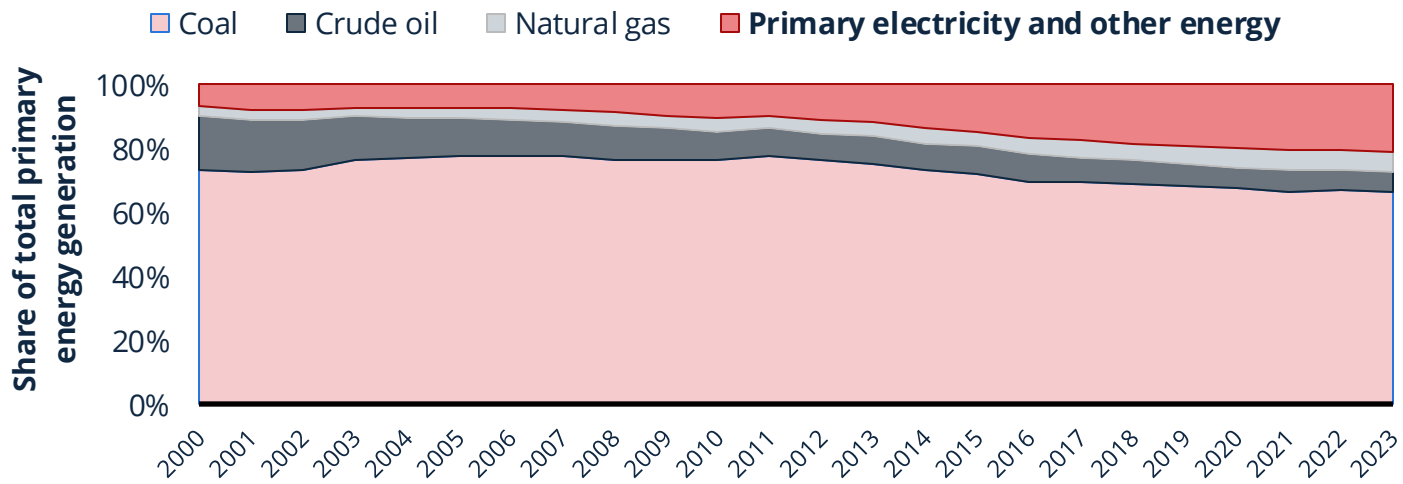
We started by analyzing the AI+ESG market, the 4 primary contributors…

Electricity Consumption in 2023 & 2024 (billion kW)



RE Capacity & Energy

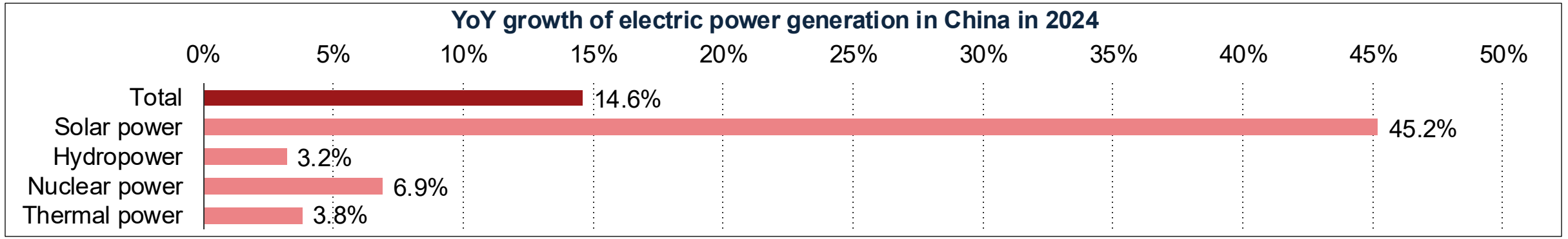


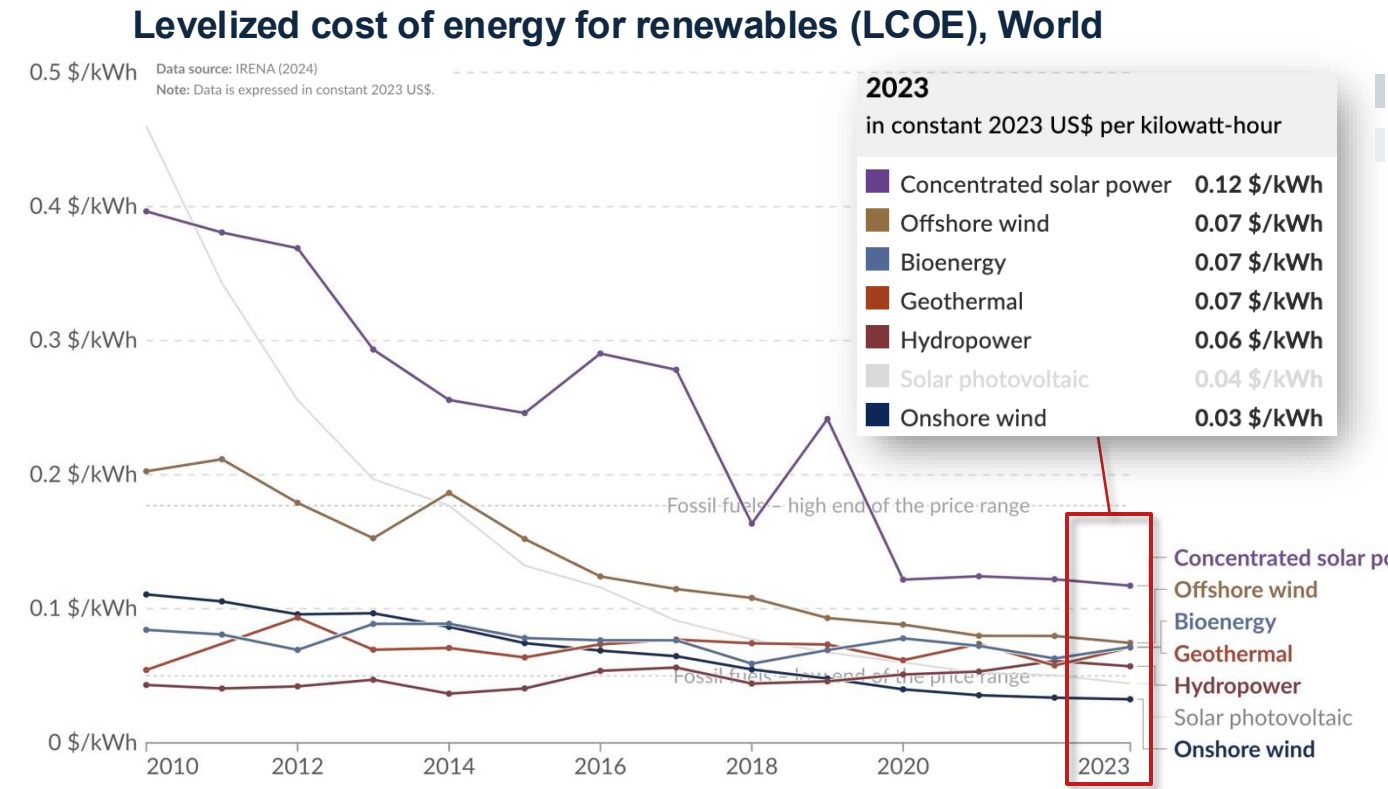


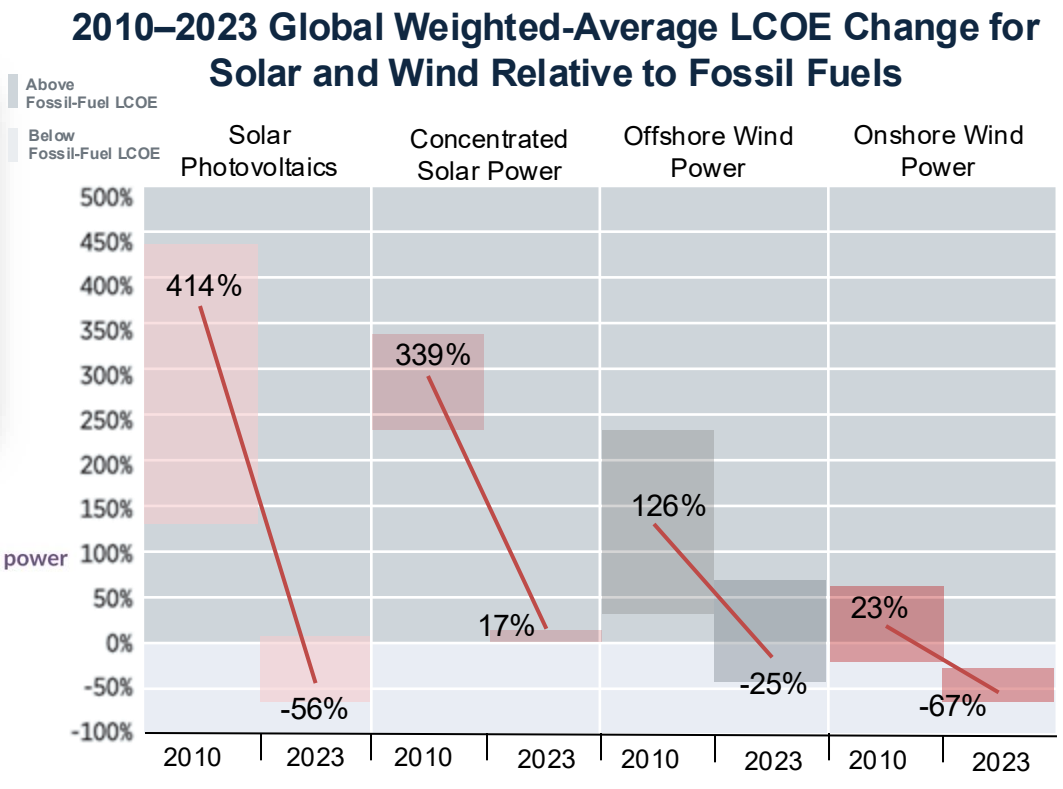
Source: National Energy Administration, National Bureau of Statistics of China, S&P Analysis

Appendix 2B: Primary Contributors in AI+ESG Market

(Market Overview)





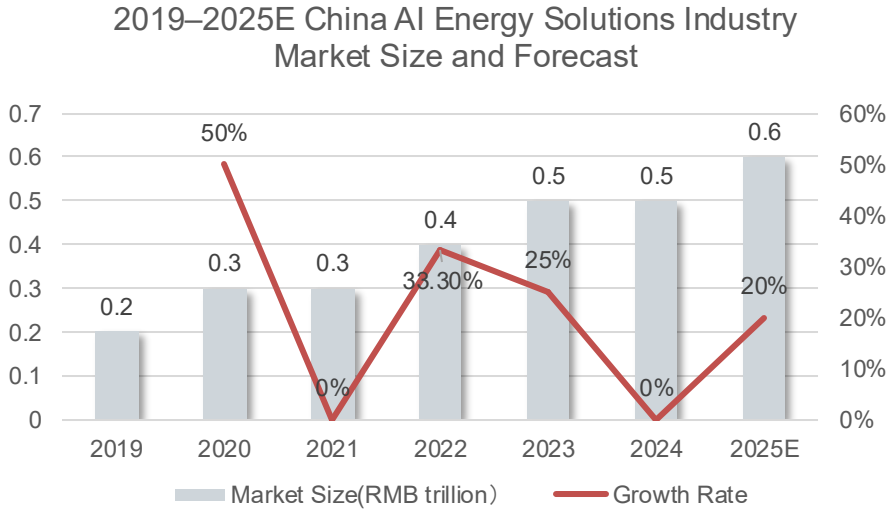


Source: National Energy Administration, IRENA, S&P Analysis

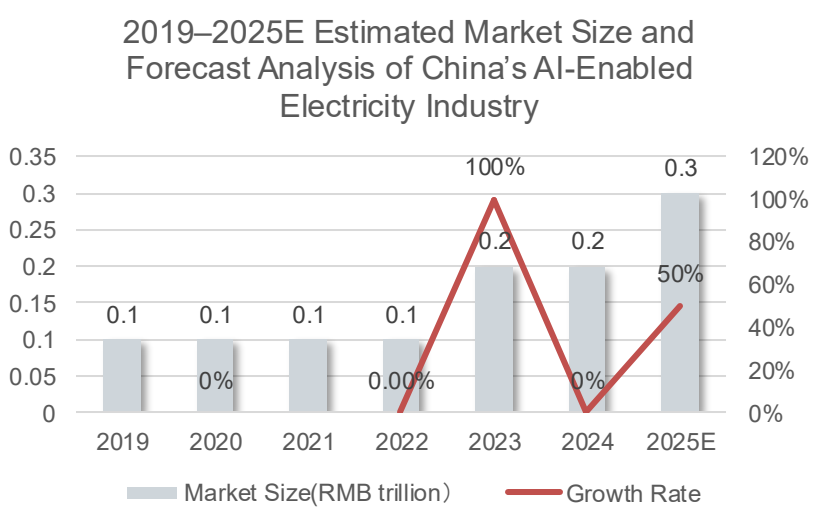
Appendix 2C: Primary Contributors in AI+ESG Market

(Market Overview)

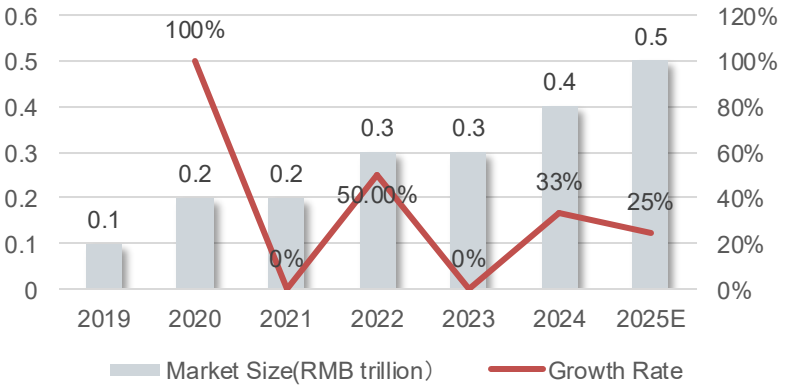
AI Penetration



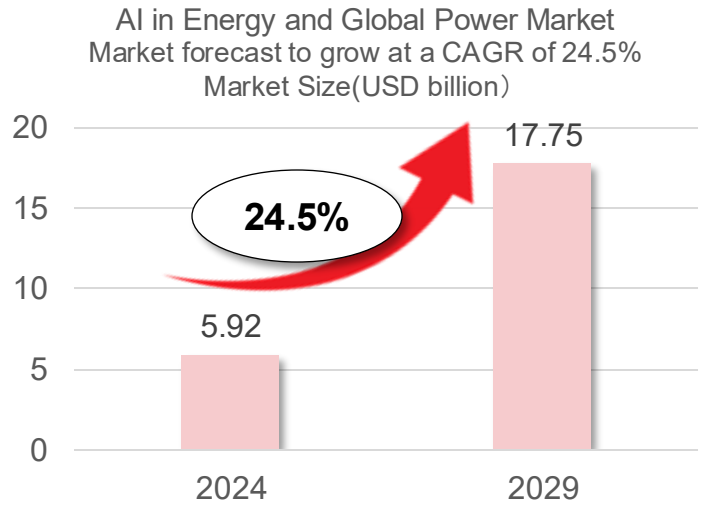
The market size shows an overall upward trend; although growth is projected to be zero in 2021 and 2024, the market continues to expand.



From 2019 to 2022, the market size remained steady at CNY 0.1 trillion; it grew to CNY 0.2 trillion in 2023, and is projected to reach CNY 0.3 trillion in 2025.



Market size was CNY 0.1 trillion in 2019, increased to CNY 0.3 trillion during 2020–2023, and is projected to reach CNY 0.4 trillion in 2024 and CNY 0.5 trillion in 2025.



AI adoption in this field is growing by 24.6% annually as power generation companies steadily embrace AI solutions for higher productivity.

Source: DongfangQB, Research and Market, S&P Analysis

Appendix 2D: Primary Contributors in AI+ESG Market

(Market Overview)

Policy & VPP Market

Virtual Power Plant Market Space Forecast

Unit / Metric	2021	2022	2023	2024	2025E	2026E	2027E	2028E	2029E	2030E
Total electricity consumption (100 million kWh)	83,128	86,374	91,500	96,000	98,000	103,390	109,076	115,076	121,405	128,082
VPP curtailed volume as % of total	0.30%	0.50%	1.00%	1.50%	2.00%	2.50%	3.00%	3.50%	4.00%	5.00%
VPP curtailed volume (100 million kWh)	249	432	915	1,440	1,960	2,585	3,272	4,028	4,856	6,404
A. Government Subsidies										
(1) Peak-shaving subsidy scale (CNY 100 million)	60	104	220	346	470	558	628	677	699	768
(2) Valley-filling subsidy scale (CNY 100 million)	30	52	110	173	235	279	314	338	350	384
Total subsidy revenue (CNY 100 million)	90	155	329	518	706	837	942	1,015	1,049	1,153
B. Market Trading										
Electricity traded via market (%)	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%
Trading spread (CNY/kWh)	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Revenue from trading (CNY 100 million)	0	4	18	43	78	129	196	282	388	576
A + B: Total VPP Market Space (CNY 100 million)	**90**	**160**	**348**	**562**	**784**	**967**	**1,139**	**1,297**	**1,437**	**1,729**
VPP aggregator's share of revenue (%)	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
Aggregator revenue market space (CNY 100 million)	**45**	**80**	**174**	**281**	**392**	**483**	**569**	**648**	**719**	**865**

Source: Huaan Securities, S&P Analysis

Appendix 2E: Primary Contributors in AI+ESG Market

(Market Overview)

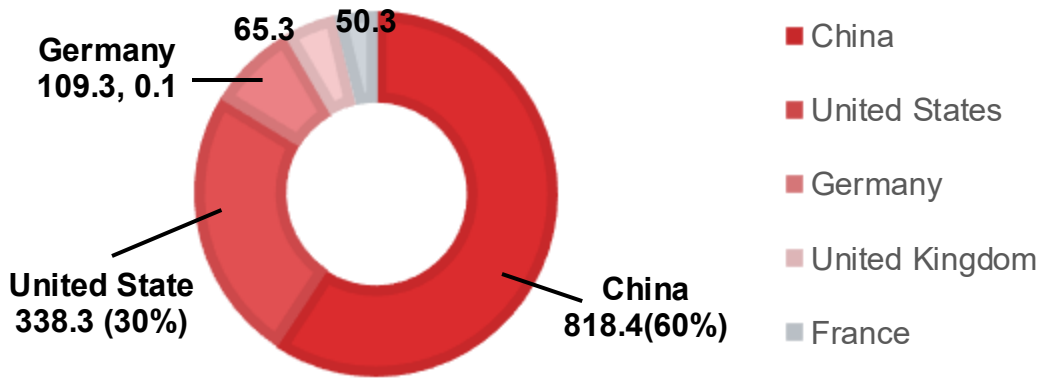
Policies Related to the Development of Virtual Power Plant (VPP) Industry

Policy Name	Issuing Authority	Year	Key Contents
Blueprint for the Development of New Power Systems *《新型电力系统发展蓝图》*	National Energy Administration (NEA)	2023	Outlines the development vision, characteristics, and roadmap for new power systems across China. Emphasizes enhanced coordination among power generation, grids, loads, and storage. Promotes market mechanisms and the digitalization of energy systems.
Guiding Opinions on Accelerating the Digital and Intelligent Development of Energy Systems *《关于加快推进能源数字化智能化发展的指导意见》*	National Energy Administration (NEA)	2023	Supports data resource aggregation, intelligent regulation, and the development of new load resources like electric vehicles. Promotes VPPs and demand-side aggregators to improve the flexible regulation capability and intelligence of energy systems.
Implementation Rules for Guangdong's Demand Response Market (Trial) *《广东省市场化需求响应实施细则（试行）》*	Guangdong Energy Bureau; South China Energy Regulatory Office, NEA	2022	Encourages participation of demand aggregators and VPPs, promotes multi-type flexibility assets like industry, commerce, electric vehicles, and distributed energy. Supports load-side participation in peak shaving and market-based electricity pricing.
Work Plan for Strengthening Power Market Regulation in Southern China in 2022 *《2022年南方区域电力市场监管工作要点》*	South China Energy Regulatory Office, NEA	2022	Promotes flexible resources like VPPs and aggregators; supports two-tiered power markets and VPP participation in dispatch. Emphasizes improving dispatch coordination, enhancing inter-provincial trading, and enabling energy digital infrastructure.
14th Five-Year Plan for Modern Energy System Development *《"十四五"现代能源体系规划》*	National Development and Reform Commission (NDRC); National Energy Administration (NEA)	2022	Strengthens flexible load development, improves demand response mechanisms, encourages smart and market-based coordination of power system operations, and supports VPP integration in grid and market. Promotes intelligent interaction of distributed resources.
Guiding Opinions on Accelerating the Development of a Unified National Power Market *《关于加快建设全国统一电力市场体系的指导意见》*	Central Committee for Deepening Overall Reform	2021	Encourages participation of VPPs as independent market entities in the unified national electricity market. Supports their integration into electricity transactions and ancillary service markets. Emphasizes full market participation and fair competition.

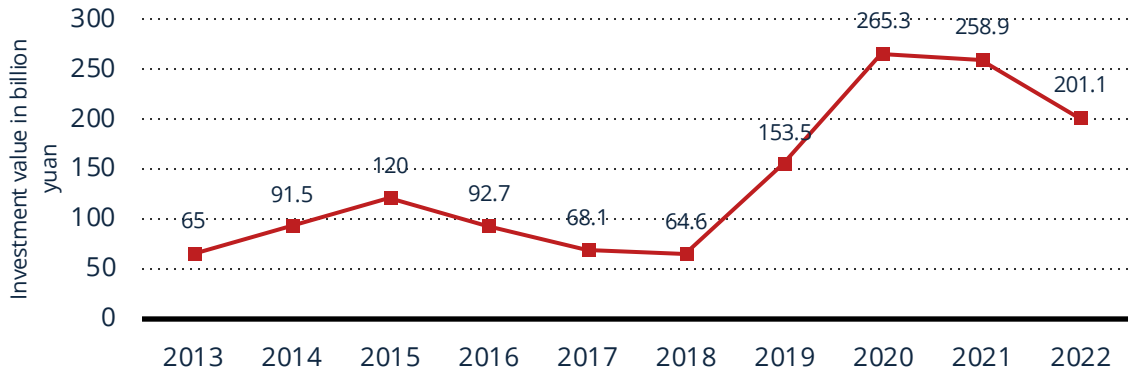
Source: Huaon, S&P Analysis

Appendix 3: Investment in RE
(Competitor Analysis)

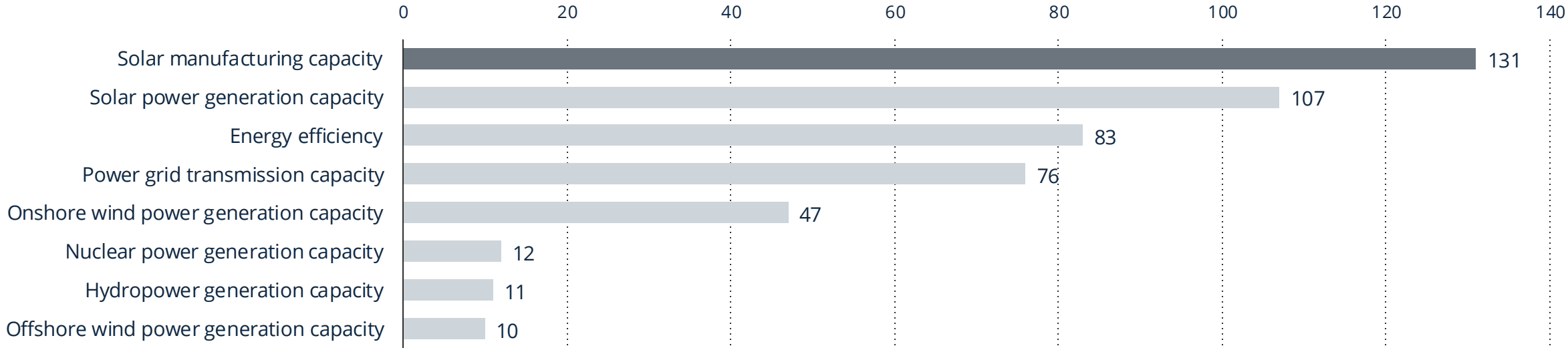
Investments in the energy transition worldwide in 2024, by leading country (in billion U.S. dollars)



Value of investments into wind energy in China from 2013 to 2022 (in billion yuan)



Leading clean energy segments in China in 2023, based on investment value (in billion U.S. dollars)

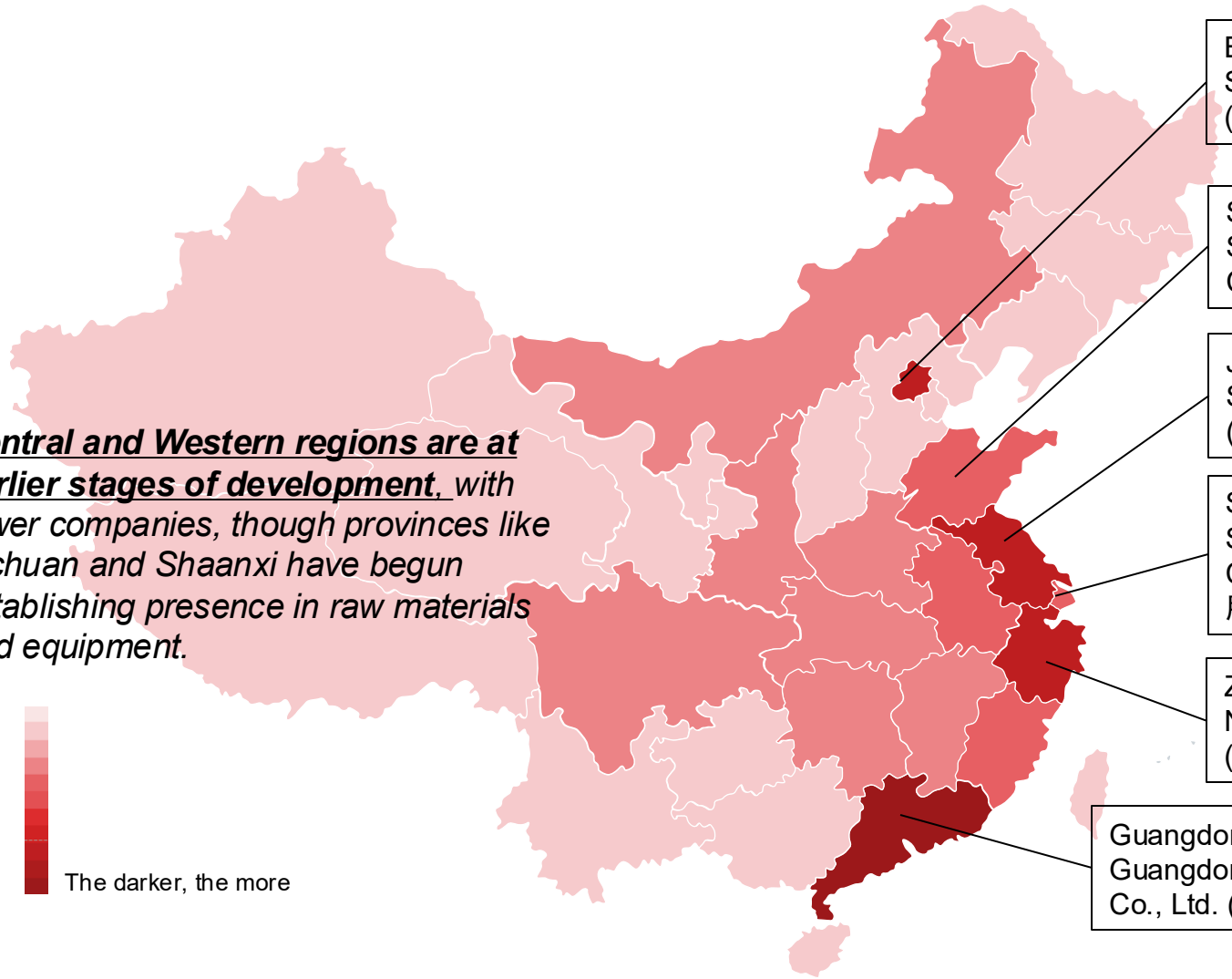


Source: BloombergNEF, Carbon Brief, Cpnn, S&P Analysis

Appendix 4: Regional Distribution Map of Energy Storage

(Strategy1 T2 Platform Services)

Regional Distribution Map of Energy Storage Projects in China (2023)



***Central and Western regions are at earlier stages of development**, with fewer companies, though provinces like Sichuan and Shaanxi have begun establishing presence in raw materials and equipment.*

The darker, the more

Beijing:
State Grid Corporation of China (国家电网有限公司)

Shandong:
Shandong Electric Power Corporation (山东省电力公司)

Jiangsu:
Sungrow Power Supply Co., Ltd. (阳光电源股份有限公司)

Shanghai:
Shanghai Electric Group Company Limited (上海电气集团股份有限公司)

Zhejiang:
Narada Power Source Co., Ltd. (浙江南都电源动力股份有限公司)

Guangdong:
Guangdong Electric Power Development Co., Ltd. (广东电力发展股份有限公司)

***Overall, the pattern is one of "strong east, weak west; more in the south, fewer in the north"**, reflecting regional differences in industrial bases and energy market liberalization.*

Guangdong hosts numerous leading companies

Enterprises are heavily concentrated in South and East China

Guangdong:
BYD Company (比亚迪)
Penghui Energy (鹏辉能源)
Shenzhen Sinexcel Electric Co., Ltd.(盛弘股份)
Kstar (Shenzhen Kstar Science & Technology Co., Ltd.) (科士达)
Hopewind Electric Co., Ltd.(禾望电气)
EVE Energy Co., Ltd.(亿纬锂能)

Source:Chnci, S&P Analysis

Appendix 5: EU Profiling Standard and Process

(Strategy2 T2 Profiling Services)

Data-Driven Feature Extraction → **Individual Behavioral Profiling** → **Cluster EU by Profile**

Internal Data Resources

Smart Meter Interval Data

15-minute smart meter load data

- Timestamp
- EU ID
- Consumption

Demand Response & Pricing Log

EU historical data for demand response event

- DR Event ID
- EU Response
- Load Shed
- Response Delay
- Price Signal

External Data Resources

Weather & Environmental Data

Key natural factors affecting load changes

- Temperature
- Humidity
- Wind Speed
- Solar Irradiance

Calendar & Temporal Data

Key time factors affecting load changes

- Clock
- Day of Week
- Holiday Flag
- Season

Based on Internal and External data, use "**load dictionary**" to encode each EU from **7 dimension** (genes)

Cluster the constructed user profiles and divide users into different EU behavior categories

Some Common Categories and Corresponding Control

- **Peak-Concentrated EU**: **Prioritize** for peak shaving incentives and smart load shifting
- **Stable Baseline EU**: Use **pre-adjusted** loads and off-peak scheduling
- **Seasonally Driven EU**: Design seasonal DR packages, trigger post-peak recovery
- **Night-Focused EU**: Use TOU pricing and controlled EV/smart device load shifting
- **All-Day EU**: Maintain stable power, limit active curtailment, use for emergency backup
- **Responsive Flexible EU**: Deploy real-time pricing, VPP participation, AI-based load optimization
- **Inertial EU**: Apply gradual education & subsidies, not suitable for aggressive DR

Source: ACIEEE, essex, Kwac, S&P Analysis

Appendix 6A: Financial Projection Model – Income Statement
(Financial Forecast)

Income Statement for 5-Year

Income Statement (in million RMB)						
		Resource Integration Stage		Downstream Docking Stage		Industry Expansion Stage
		2026	2027	2028	2029	2030
Operating Income	Upstreams	5	12	18	21	25
	Downstreams	0	0	2	7	35
	Total revenues	**5**	**12**	**20**	**28**	**60**
Operating Cost[1]	Cost of good sold	3.758	8.524	10.775	15.073	39.777
	Taxes and surcharges	0.048	0.098	0.184	0.262	0.549
	Selling expenses	0.325	0.723	3.310	3.769	5.871
	Management fees	0.135	0.310	0.693	1.939	3.682
	R&D expenses	0.220	0.675	2.375	3.194	4.993
	Total Operating Cost	**4.485**	**10.330**	**17.337**	**24.237**	**54.872**
Profit	Gross Profit	1.24	3.48	9.23	12.93	20.22
	Total Operating Profit	0.51	1.67	2.66	3.76	5.13
	EBIT	**0.51**	**1.67**	**2.66**	**3.76**	**5.13**
	Less: Income tax expense	0.08	0.25	0.40	0.56	0.77
	Net profit	**0.44**	**1.42**	**2.26**	**3.20**	**4.36**

Notes: [1]See Appendix 6B for details.

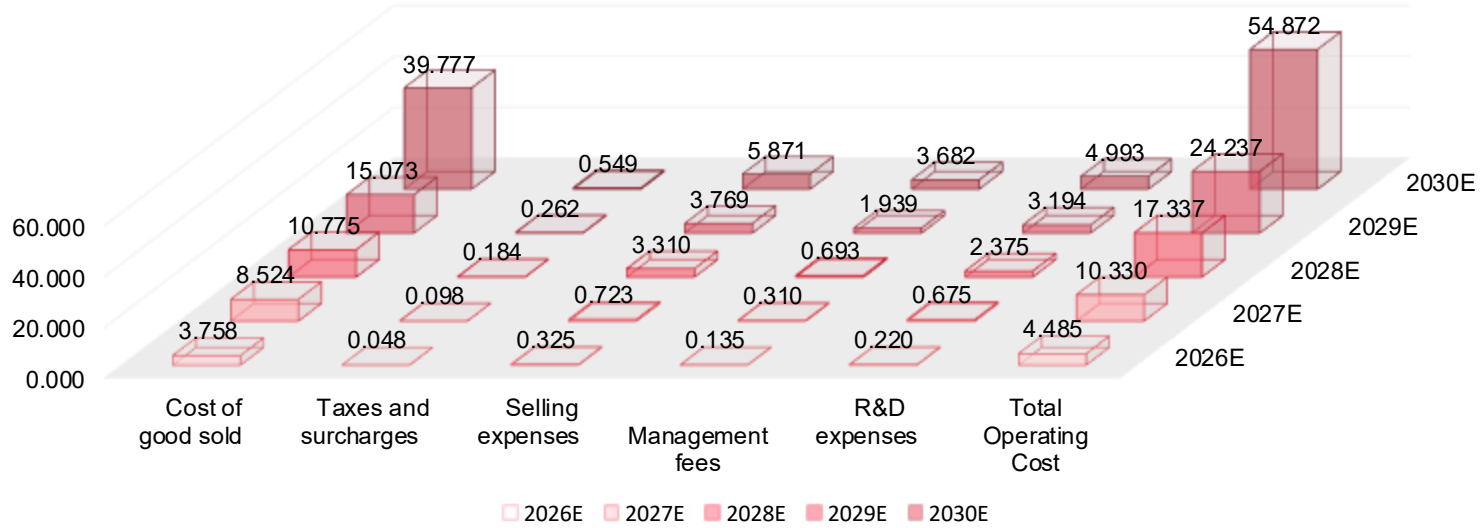
Source: S&P Analysis

Appendix 6B: Financial Projection Model – Operating Cost
(Financial Forecast)

Expenditure Rate for 5-Year

Expenditure Rate	2026	2027	2028	2029	2030
Cost of good sold	83.79%	82.52%	62.15%	62.19%	72.49%
Taxes and surcharges	1.06%	0.95%	1.06%	1.08%	1.00%
Selling expenses	7.24%	7.00%	19.09%	15.55%	10.70%
Management fees	3.00%	3.00%	4.00%	8.00%	6.71%
R&D expenses	4.91%	6.53%	13.70%	13.18%	9.10%

Cost Proportional Allocation



Source: S&P Analysis

Appendix 6C: Financial Projection Model - Intrinsic Valuation

(Financial Forecast)

AI-in-ESG Co. EBIT After 5-Year

Stage 1: High Growth (Y0-Y5)

- **Expected WACC**: 60%
- **Expected WACC**: 35%

	PV of FCFF (in Million RMB)
Year 0	4.63
Year 1	5.49
Year 2	6.50
Year 3	7.71
Year 4	9.14
Year 5	10.83

Stage 2: Slower growth (Year 6-20)

- **Expected WACC**: 35%
- **Expected WACC**: 12%

	PV of FCFF (in Million RMB)
Year 6	13.05
Year 7	15.73
Year 8	18.96
…	…
Year 19	9.14
Year 20	10.83

Stage 3: Perpetuity growth (Year 20-)

- **Expected WACC**: 7.4%
- **Expected WACC**: 5.0%

Terminal Value: **7,430.84** Million RMB

PV of Terminal Value: **533.57** Million RMB

Total Value of AI-in-ESG Co.

2,111.71 Million RMB

Source: S&P Analysis