Cooling Fan Industry

From:Ailand-Industry Date：2025-03-12

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Supply Chain Cost Analysis

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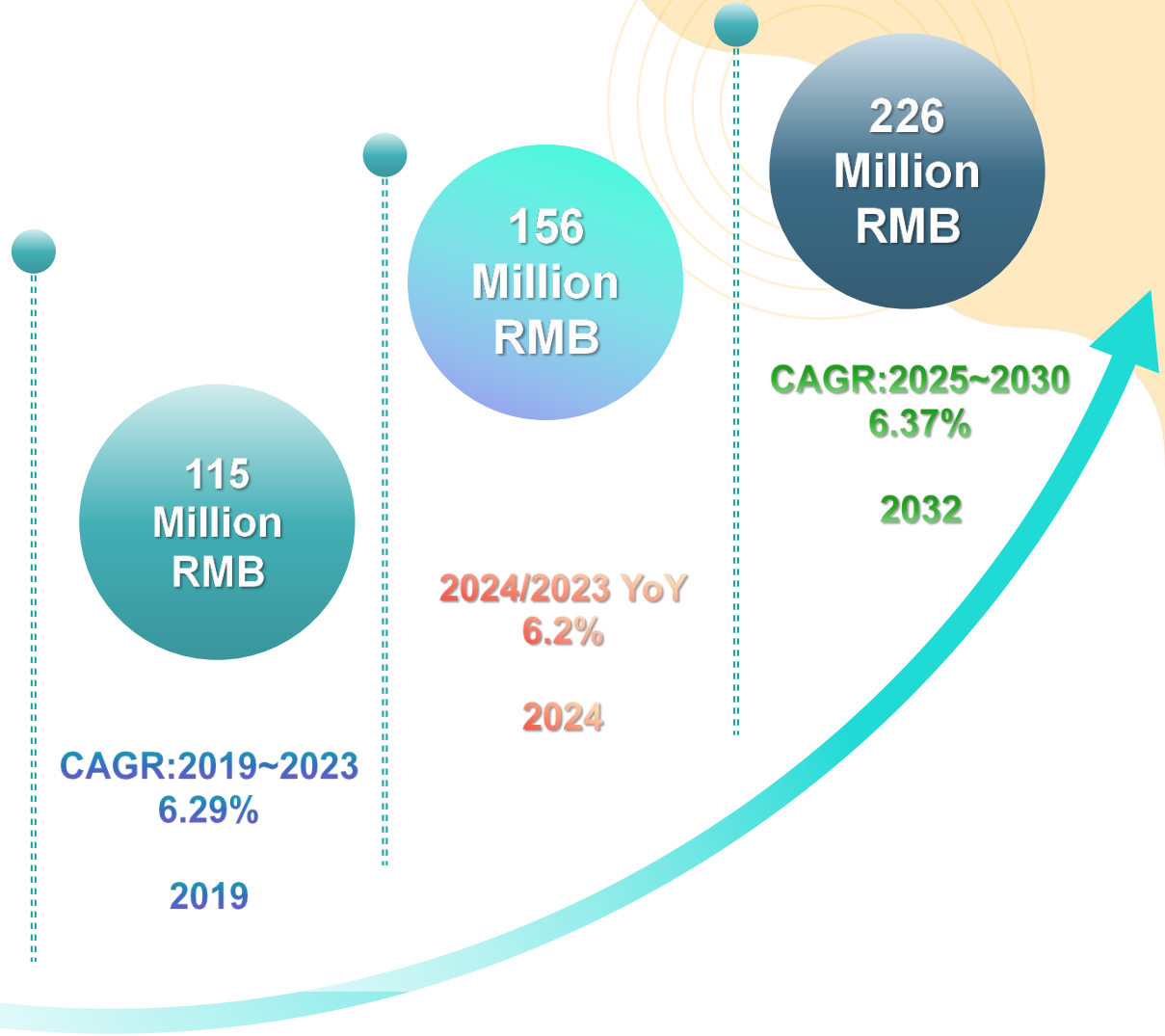
1.Where are the future trends of cooling fans happening?

Cooling Fan Market Forecast Data

2025~2032 (CAGR)	10.4%
2024 Forecast	79 billion USD
2025 Forecast	88 billion USD
2032 Forecast	212 billion USD
Demand Growth Factors	●The increasing demand for cooling fans in industries such as new energy vehicles, consumer electronics, wind and solar power generation, IT communications, network communication base stations, smart homes, and high-end medical equipment is a key factor driving the global market forward. ●It is predicted that by 2032, the development of environmentally friendly and innovative advanced cooling solutions will further boost sales in the cooling fan industry



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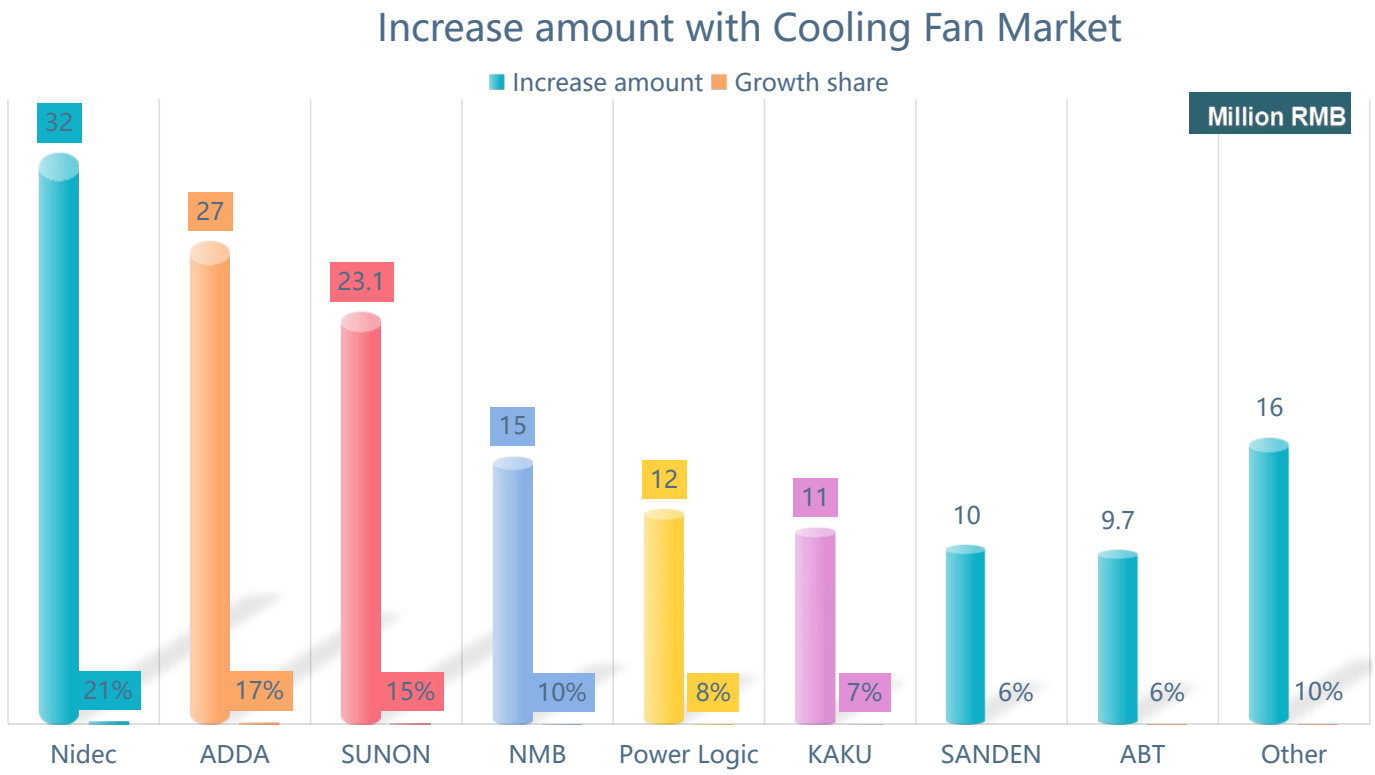
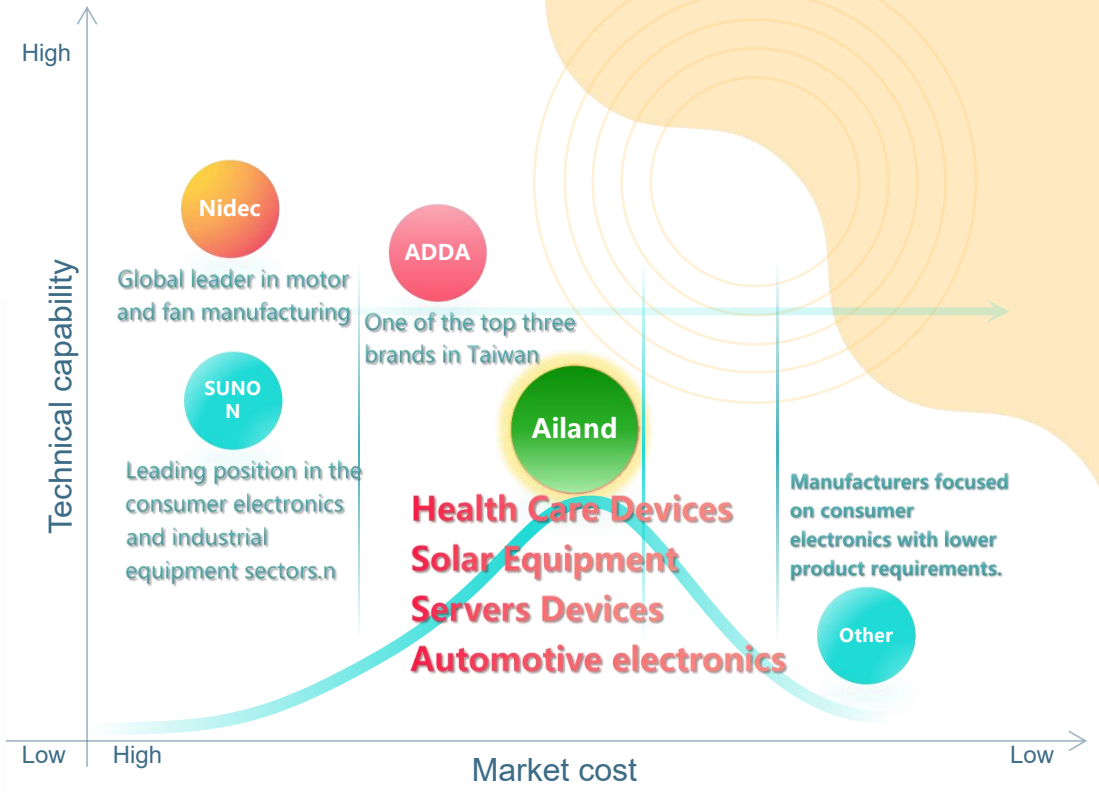
2.What is our price position in the industry?

This data comes from the China Economic Database and is for market analysis reference only.





Ailand regularly collaborate with our material suppliers to develop new materials and improve manufacturing processes, enhancing our price competitiveness.

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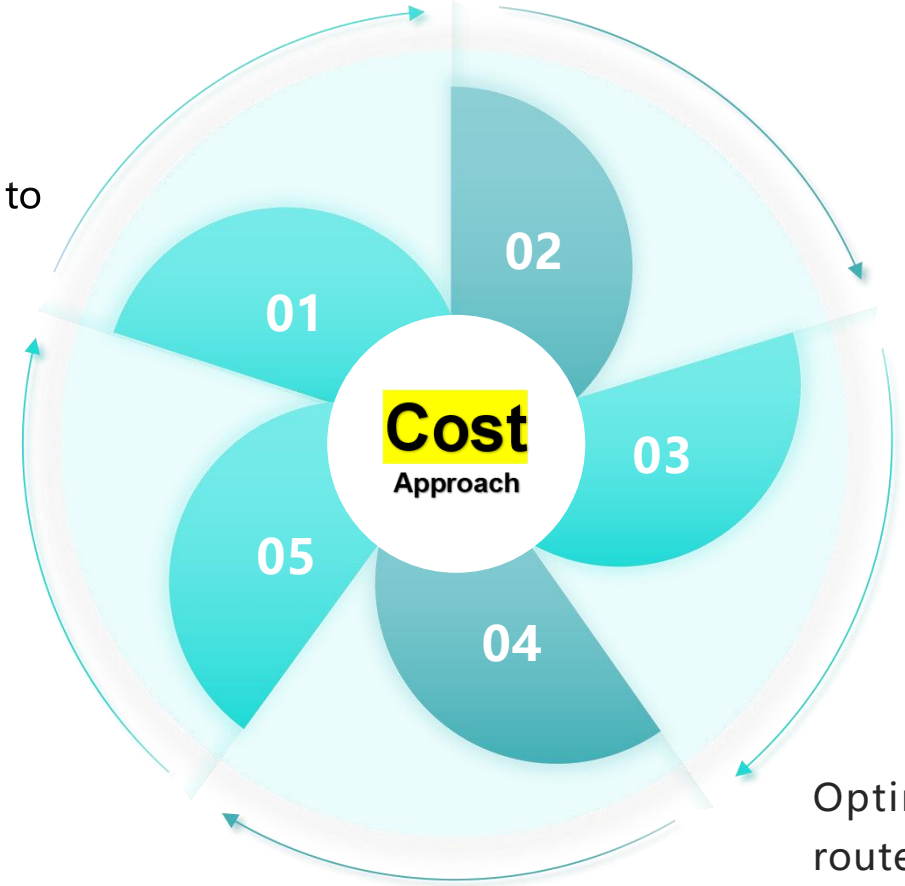
3.How do we reduce costs?

People, machines, materials, and methods are the breakthrough points for our cost reduction.
Competitiveness comes from continuous challenges and experimentation.

1.Material cost

Regularly collaborate with suppliers to develop and replace materials with new environmentally friendly characteristics.



2.Production process

The company sets process improvement KPIs for each stage,

3.Production Efficiency

Allocate annual investments in automation production and testing equipment to reduce product

4.Logistics cost

Optimize material and product transportation routes to reduce logistics costs while enhancing transportation quality assurance and lowering the product compensation rate.

5.Labor cost

Optimize management processes by implementing AI systems to reduce indirect labor costs.

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4.How should engineers choose cooling fans?

Cost Category	Main Components	Estimated Percentage (%)
Motor	Copper wire, rotor, stator, iron core	30% - 40%
Fan Blades (Impeller)	PBT/PC plastic or aluminum alloy	10% - 15%
Fan Frame	PBT plastic, aluminum alloy, SPCC steel	10% - 15%
PCB Control Board	Chips, capacitors, resistors, inductors	10% - 15%
Bearing	Sleeve bearing, ball bearing, FDB bearing	10% - 20%
Wires & Terminals	UL electronic wires, JST/Molex terminals	5% - 10%
Others (Assembly & Testing)	Labor, testing, packaging	5% - 10%

Motor

Copper Coil,
Aluminum Coil

Fan Blades

PBT, ABS, PC,
Aluminum Alloy

Frame

PBT, ABS, Aluminum
Alloy, Steel

Bearings

Sleeve Bearings, Ball
Bearings, FDB

Electric Wires

Tinned Copper
Tinned Copper Wire
Aluminum Wire

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5.What factors affect the cost of cooling fans??

* Factors Affecting Cost

1 ☐ **Fan Size:** Larger fans require more materials, increasing costs.
2 ☐ **Bearing Type:** Ball bearing > FDB bearing > Sleeve bearing (cost increases in this order).
3 ☐ **Motor Quality:** Pure copper coils are more expensive but provide better stability and longer lifespan.
4 ☐ **PCB Control Functions:** Features like PWM speed control, FG speed signal, and RD alarm function add to the cost of electronic components.
5 ☐ **Special Requirements:** Waterproof **(IP55/IP68)**, high-temperature resistance, and flame-retardant features will increase costs.
6 ☐ **Production Process & Volume:** Mass production lowers unit cost by reducing fixed expenses such as molds and equipment depreciation.

If you have specific models or cost optimization needs, I can help analyze how to reduce costs or improve cost-effectiveness! 😊

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6.What does IP55~IP68 mean?

Each increase in IP rating raises the cost *+10% to 15%.*

IP55
Protected against low-pressure water jets
01

IP56
Protected against strong water jets
02

IP57
Can withstand immersion in water up to 1m depth
03

IP58
Can withstand long-term immersion beyond 1m depth
04

VS

IP65
Protected against low-pressure water jets
05

IP66
Protected against strong water jets
06

IP67
Can withstand immersion in water up to 1m depth
06

IP68
Can withstand long-term immersion beyond 1m depth
06

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7.How do products switch between competitors?

Size (L*W*H)mm	Rated Voltage	Rated Current	AILAND (China)	Ni* (Japan)	SA* (Japan)	AD* (Taiwan)	SU* (Taiwan)
L20*W20*H06	12	0.25	**AFD2006XS12**	D30E-12PL (K)	9GA0212P3K001	AD02012LX******	MF20061V1-1000C-A99
L15*W15*H04	12	0.3	**AFD1504XM12**	D30E-12PM (K)	9GA0512P3M001	AD01512MX******	MF15041V2-1000C-A99
L30*W30*H10	12	0.45	**AFD3010XH12**	D30E-12PH (K)	9GA0312P3J001	AD03012HX******	MF30101V3-1000C-A99
L30*W30*H15	24	0.17	**AFD3015XS24**	D30E-24PL (K)	9GA0324P3K001	AD03024LX******	MF30152V1-1000C-A99
L40*W40*H10	24	0.2	**AFD4010XM24**	D30E-24PM (K)	9GA0424P3M001	AD04024MX******	MF40102V2-1000C-A99
L40*W40*H15	24	0.2	**AFD4015XM24**	D30E-24PM (K)	9GA0424P3M001	AD04024MX******	MF40152V2-1000C-A99
L50*W50*H10	24	0.37	**AFD5010XS12**	D30E-24PG (K)	9GA0524P3J001	AD05012LB******	MF50102V1-1000C-A99
L50*W50*H20	12	0.25	**AFD5010XM12**	D40E-12PL (K)	9GT0512P3J001	AD05012MB******	MF50201V2-1000C-A99
L50*W50*H15	12	0.3	**AFD5010XS12**	D40E-12PM (K)	9GT0512P3J001	AD05012LB******	MF50151V1-1000C-A99
L60*W60*H10	12	0.45	**AFD6015XH12**	D40E-12PH (K)	9GT0612P3K001	AD06012HB******	MF60121V3-1000C-A99
L60*W60*H25	12	0.7	**AFD6025XM24**	D40E-12PG (K)	9GT0612P3M001	AD06012MB******	MF60121V2-1000C-A99
L70*W70*H15	24	0.17	**AFD7010XH24**	D40E-24PL (K)	9GT0712P3K001	AD07024HB******	MF70102V3-1000C-A99
L70*W70*H25	24	0.2	**AFD7025XH24**	D40E-24PM (K)	9GT0712P3K001	AD07024UB*******	MF70252V0-1000C-A99
L80*W80*H10	24	0.27	**AFD8010XH24**	D40E-24PH (K)	9GT8024P3K001	AG080024DB*******	MF80122V0-1000C-A99
L80*W80*H25	24	0.37	**AFD8025XL24**	D40E-24PG (K)	9GT8024P3J001	AG080024LB*******	MF80242V1-1000C-A99
L90*W90*H10	24	0.37	**AFD9025XM24**	D40E-24PH (K)	9GT9024P3M001	AG090024MB*******	MF90242V2-1000C-A99
L92*W92*H25	24	0.37	**AFD9225XH24**	D40E-24PG (K)	9GT9224P3K001	AG090024HB*******	MF90242V3-1000C-A99
L120*W120*H25	24	0.37	**AFD12025XL24**	D40E-24PH (K)	9GT12024P3K001	AG120024UB*******	MF120242V1-1000C-A99
L120*W120*H38	24	0.37	**AFD12038XH24**	D40E-24PG (K)	9GT12024P3K001	AG120024XB*******	M120242V3-1000C-A99

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