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## 4Q 2023 Earnings Release

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February 14, 2024

# Table of Contents

## I ▪ 4Q 2023 Earnings Release

## II ▪ Thermal Management Systems for Electric Vehicle

***Disclaimer***

*Hanon Systems does not undertake any obligation to update or revise publicly any forward-looking statements, whether as a result of new information, future events or otherwise. Any information expressed herein on this date is for understanding purposes before the audit, and may be subject to change without notice.*

# 4Q 2023: Key YoY Financial Metrics

Unit: KRW in billions

	4Q 2023	4Q 2022	YoY Variance	
<b>Revenue</b>	<b>2,463</b>	<b>2,345</b>	<b>118</b>	<b>5.0%</b>
<b>COGS</b>	<b>2,241</b>	<b>2,081</b>	<b>160</b>	<b>7.7%</b>
% of Sales	91.0%	88.8%	2.2%pt	
<b>SG&amp;A (Incl. R&amp;D)</b>	<b>168</b>	<b>160</b>	<b>8</b>	<b>5.2%</b>
% of Sales	6.8%	6.8 %	0.0%pt	
<b>EBITDA</b>	<b>212</b>	<b>249</b>	<b>(37)</b>	<b>(14.9%)</b>
Margin (%)	8.6%	10.6%	(2.0%pt)	
<b>Operating Income</b>	<b>53</b>	<b>104</b>	<b>(51)</b>	<b>(48.9%)</b>
Margin (%)	2.2%	4.4%	(2.2%pt)	
<b>Net Income</b>	<b>(55)</b>	<b>(29)</b>	<b>(26)</b>	<b>-</b>
Margin (%)	(2.2%)	(1.2%)	(1.0%pt)	

**Revenue and OI in-line with Guidance; Net Income Decreased on Interest and Currency**

# FY 2023: Key YoY Financial Metrics

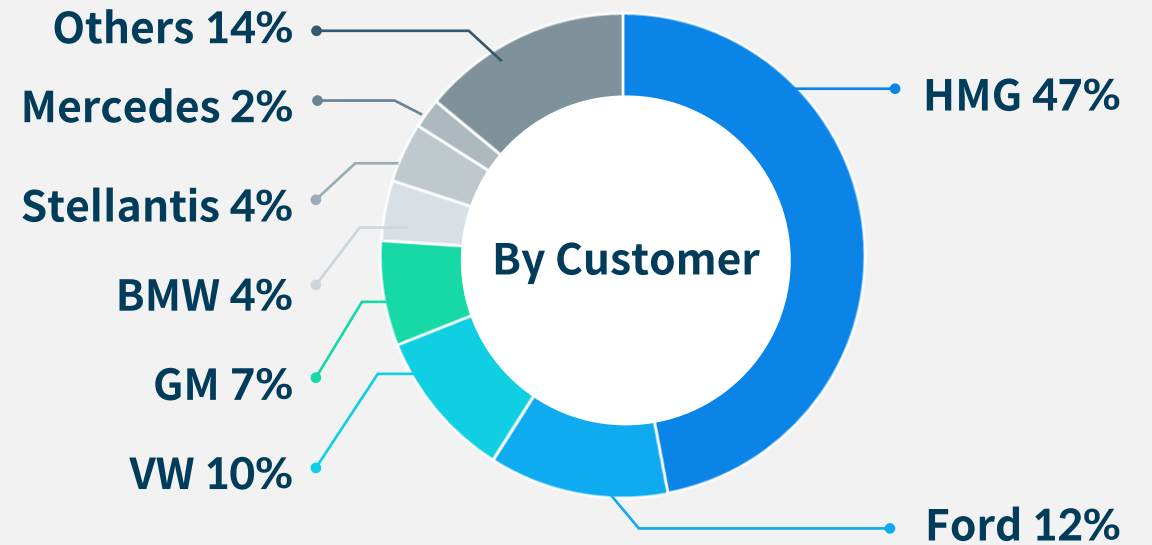
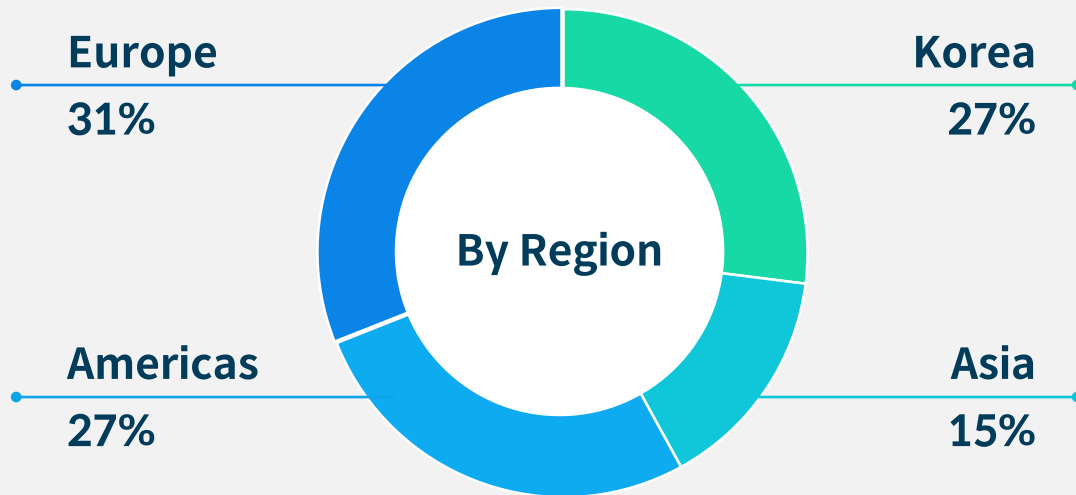
Unit: KRW in billions

	FY 2023	FY 2022	YoY Variance	
<b>Revenue</b>	<b>9,559</b>	<b>8,628</b>	<b>931</b>	<b>10.8%</b>
<b>COGS</b>	<b>8,651</b>	<b>7,781</b>	<b>870</b>	<b>11.2%</b>
% of Sales	90.5%	90.2%	0.3%p	
<b>SG&amp;A (Incl. R&amp;D)</b>	<b>631</b>	<b>590</b>	<b>41</b>	<b>6.8%</b>
% of Sales	6.6%	6.8%	(0.2%p)	
<b>EBITDA</b>	<b>876</b>	<b>814</b>	<b>62</b>	<b>7.5%</b>
Margin (%)	9.2%	9.4%	(0.2%p)	
<b>Operating Income</b>	<b>277</b>	<b>257</b>	<b>20</b>	<b>8.1%</b>
Margin (%)	2.9%	3.0%	(0.1%p)	
<b>Net Income</b>	<b>59</b>	<b>27</b>	<b>32</b>	<b>120.2%</b>
Margin (%)	0.6%	0.3%	0.3%p	

**Annual Revenue Increased on Volume and Mix; Adjusted-OPM at 3.5% in 2023**

# FY 2023 Highlights

## Sales Breakdown (FY 2023)



## 2023 Highlights

- Revenue increased 11% YoY on volume and mix while OPM remained at 2.9% due to inflation, weak BEV volumes, one-offs in 2H
- xEV revenue increased 17% YoY and accounted for 26% of total revenue; eCompressor volume reached 3 million units in 2023
- Company executing enhancement initiatives for 2024 focusing on operational efficiency and financial performance

# Progress on Profitability Improvement Action Plans

## Commitments<sup>1</sup>



**Operational  
Efficiency  
Improvement**

**~100 B KRW**



**Supply Chain  
Optimization**

**~80 B KRW**



**Additional  
Recovery  
and Repricing**

**~75 B KRW**

## Key Progress

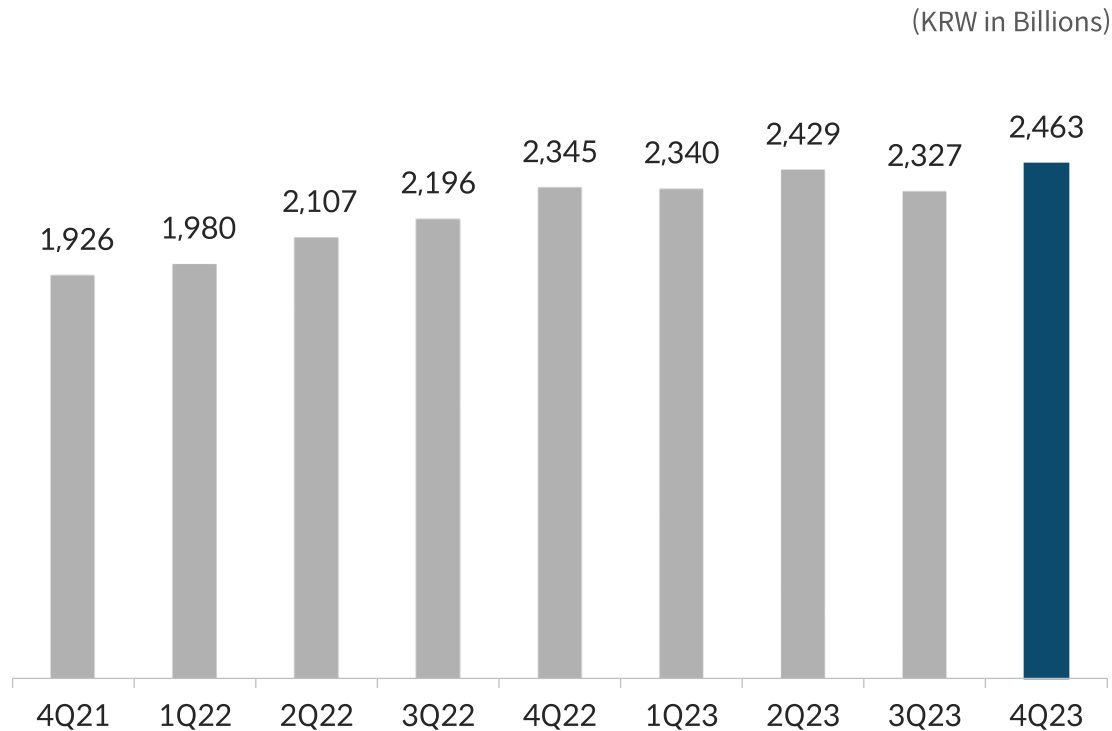
- Developed 2024 business plans with actions to achieve 100B improvement
  - Optimized ~500 direct and indirect heads out of year-end target of 1,000
- 
- Secured freight contracts to achieve 2.6% freight costs to sales ratio in 2024
  - The Red Sea issue may pose some risks yet the expected impact is limited by the current freight contracts and negotiation with customers on force majeure
- 
- Achieved ~80% cost recovery in 2023
  - Continuously engaging customers on the cost recovery and repricing

**Efforts Continue to Achieve 2024 Business Target**

1. Annualized impact of EBIT improvement

# Quarterly Sales

## Consolidated Sales



## Comments



- 4Q23: Increase in Americas (7%), Korea (6%), Europe (6%) and China (4%)
- 2023: Increase in Europe (16%), Americas (14%) and Korea (10%); Decrease in China (7%)

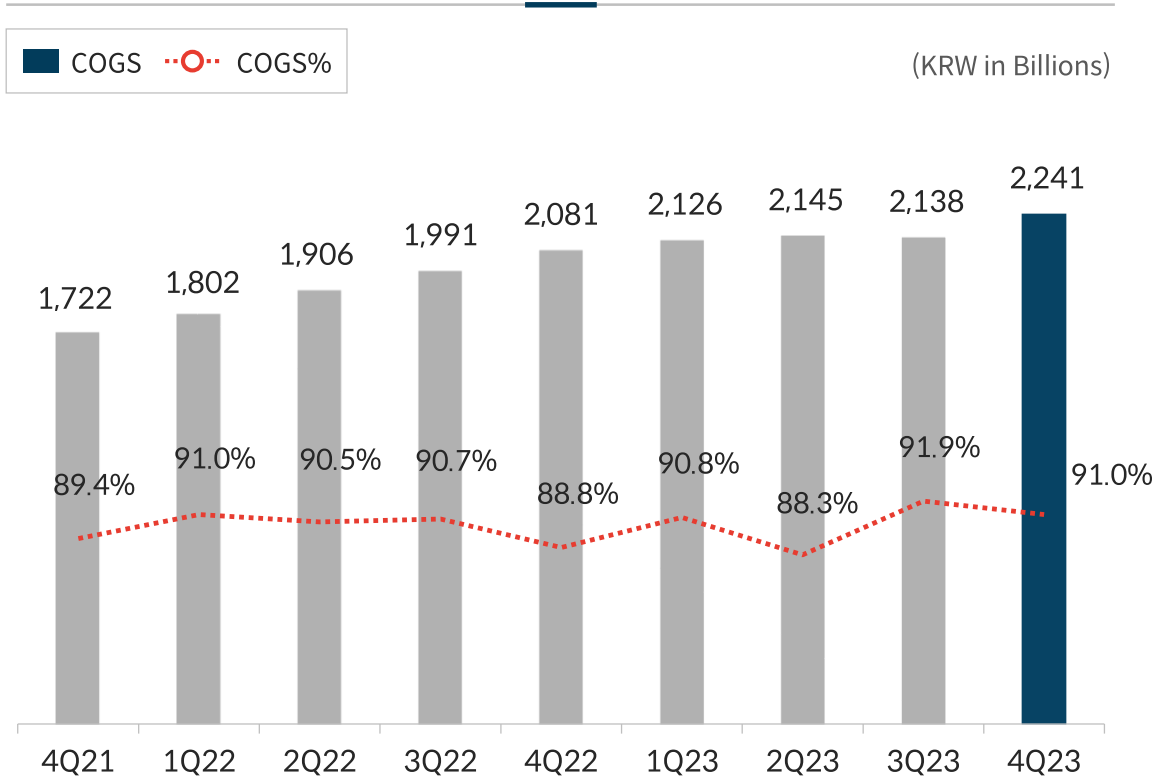


- 4Q23: Increase in BMW (+46%), VW (+9%), HMG (+8%) and Ford (+5%)
- 2023: Increase in BMW (+33%), VW (+29%), HMG (+12%), GM (+12%) and Ford (+11%)

**Increase in 4Q23 Revenue by 5% YoY; 2024 Revenue Expected to Grow 6% YoY**

# Quarterly COGS

## Quarterly Cost of Goods Sold



## Comments

### Positive Factors

- Expect COGS% to improve in 2024 based on new programs

### Negative Factors

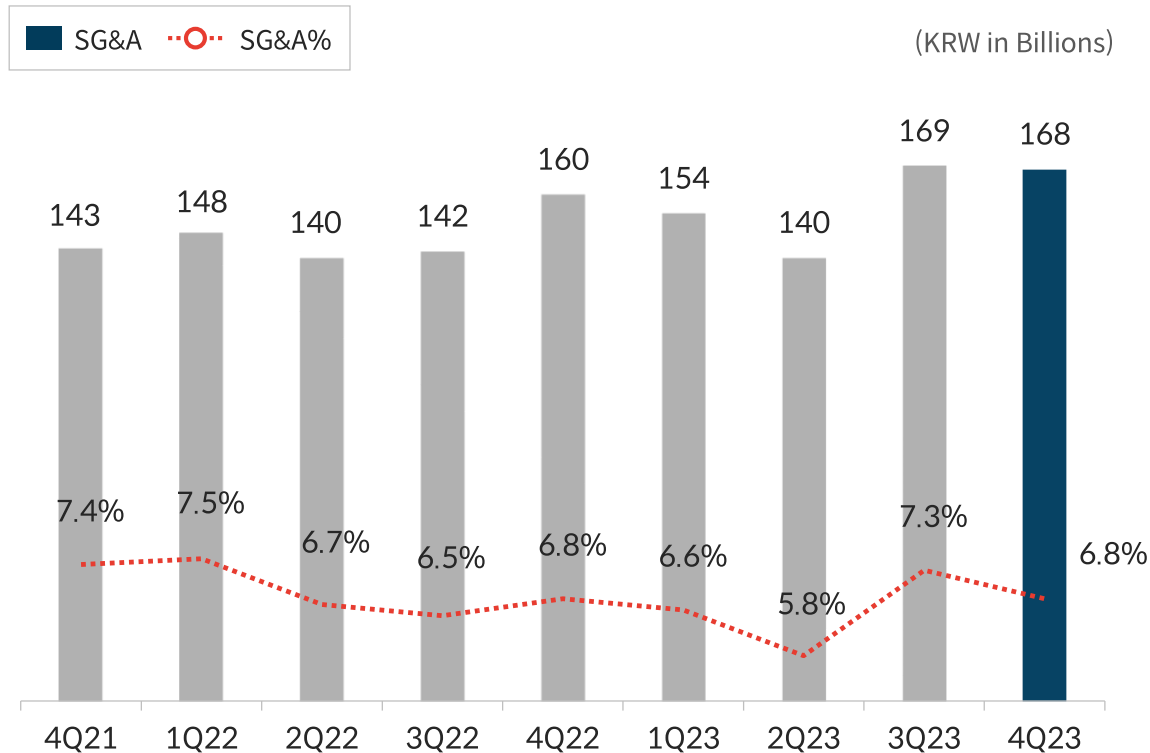
- Lower-than-expected volume due to slowdown in Europe / China / Korea, and UAW strike in the U.S.
- Reimbursement to upstream suppliers

**High 2023 COGS Ratio Due to Inflation and One-off Items**



# Quarterly SG&A

## Quarterly SG&A



## Comments



- 2023 SG&A expense: 6.6% of total revenue (YoY improvement of 0.2%pt)

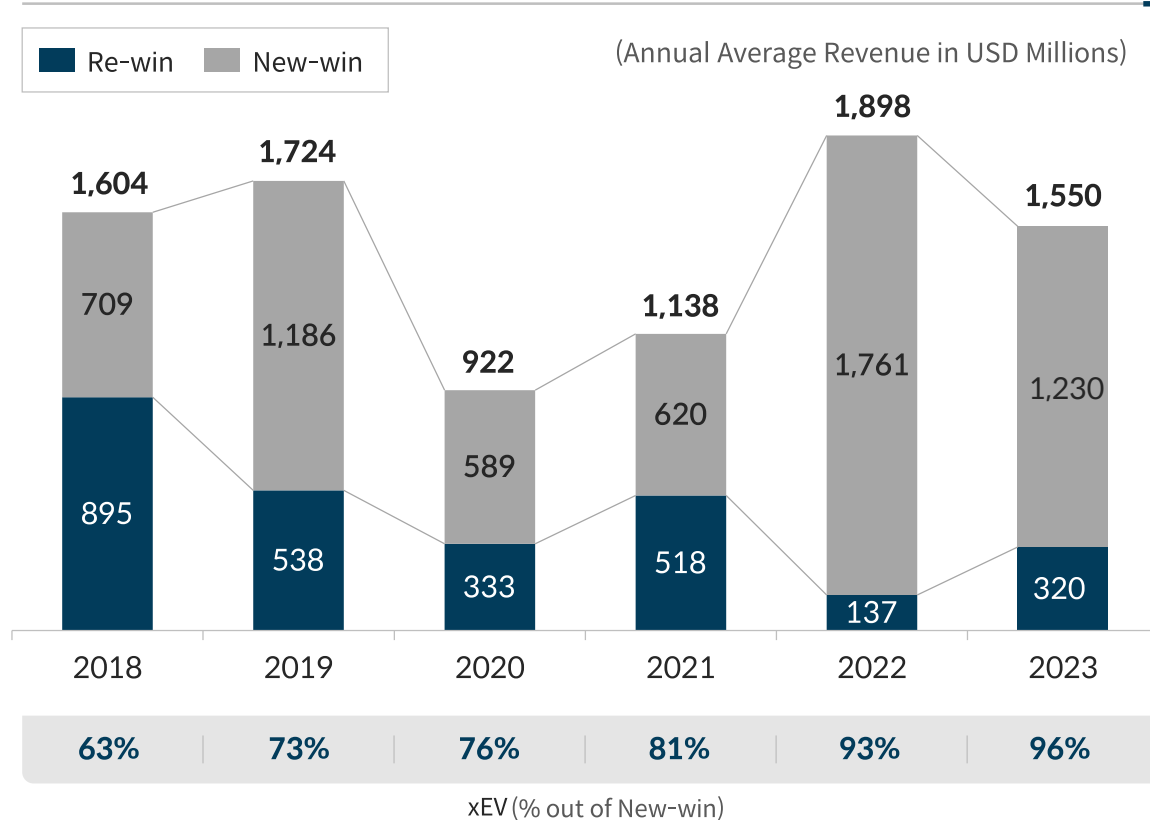


- 2023 R&D spending (incl. R&D capitalization) : 4.6% of total revenue (YoY increase of 0.1%pt)

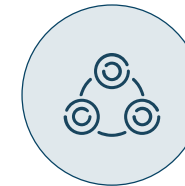
**Cost Actions Drove Year-over-Year SG&A% Improvements**

# New Business Wins Update

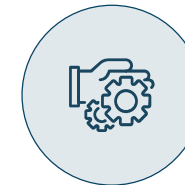
## FY 2023 New Business Wins



- Achieved 2023 NBW target of USD 1.5B



- Awarded significant new wins in 4Q 2023 on BEV platforms from major customer

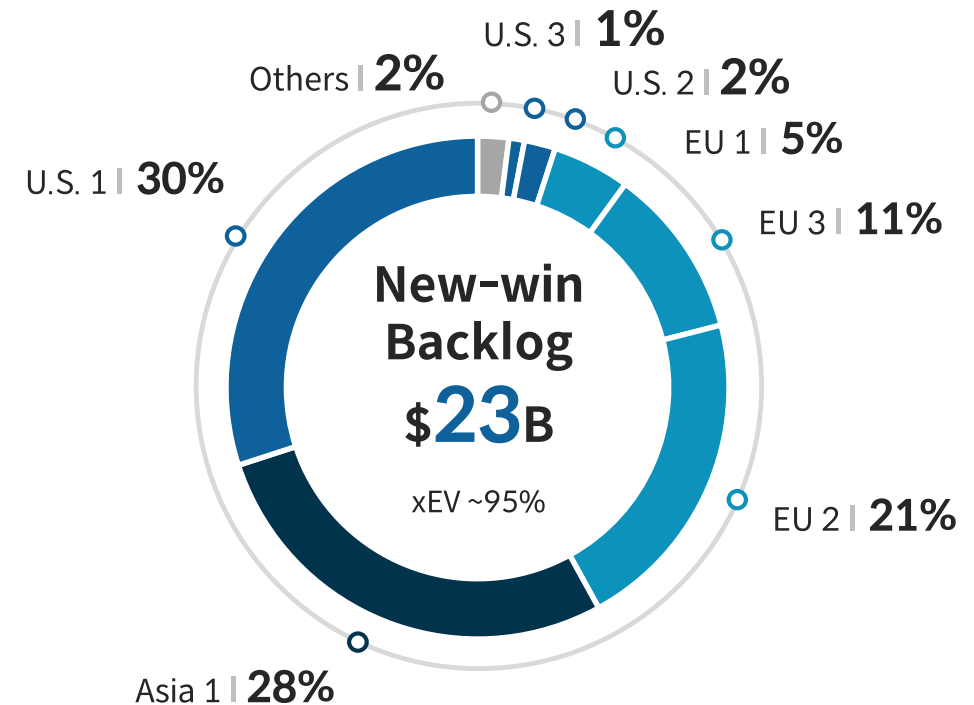
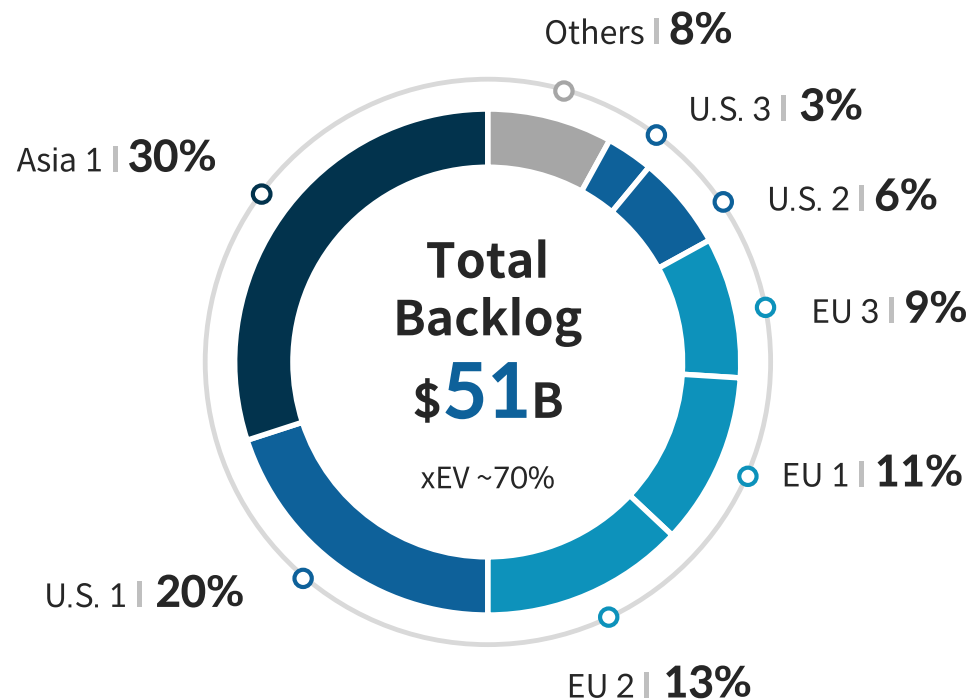


- Demonstrated strong technology leadership securing module and system orders from global automakers

**Achieved 2023 NBW Target Based on Strong Relationship with Anchor Customers**

# Solid Backlog

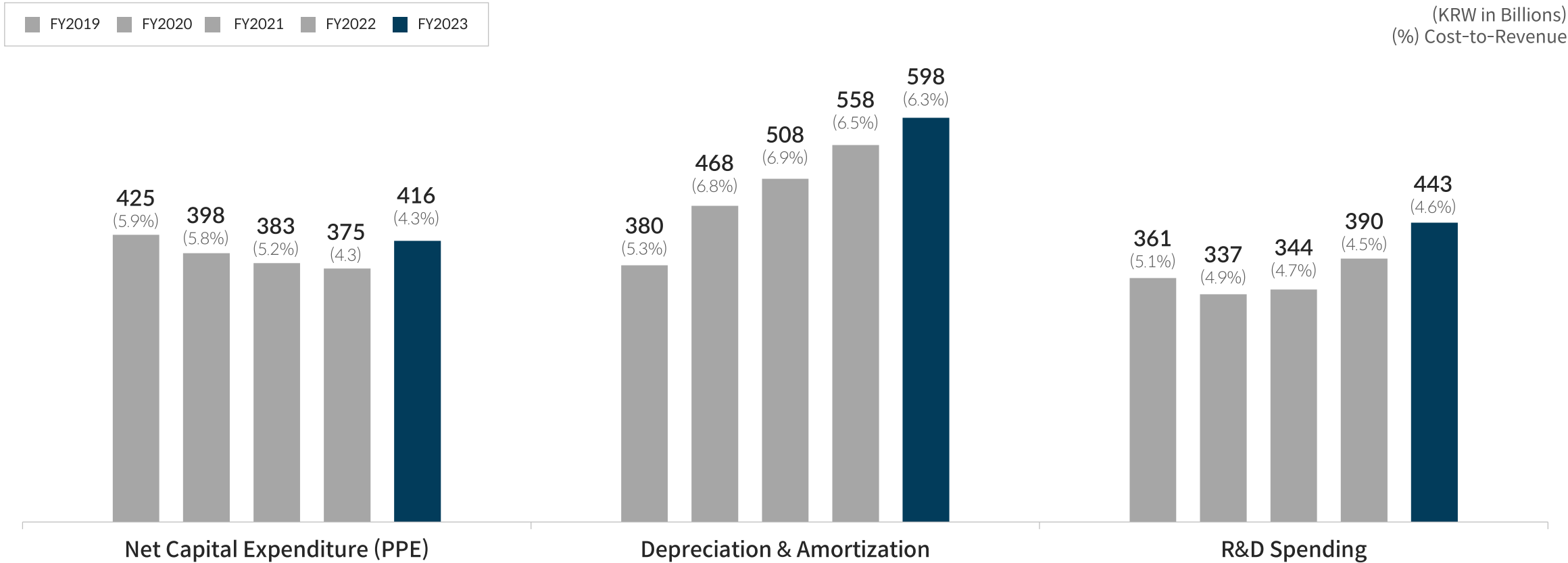
## FY 2023 Backlog



**Solid Backlog Supports Long-term Growth with Greater Focus on Electrification**

Note : Total Backlog includes the followings 1) In-production backlog: Remaining life-cycle revenue from vehicles in production  
2) Re-win backlog: Program life-cycle revenue of re-win vehicles to be launched 3) New-win backlog: Program life-cycle revenue of new-win vehicles to be launched

# Trend of CAPEX, D&A and R&D Spending

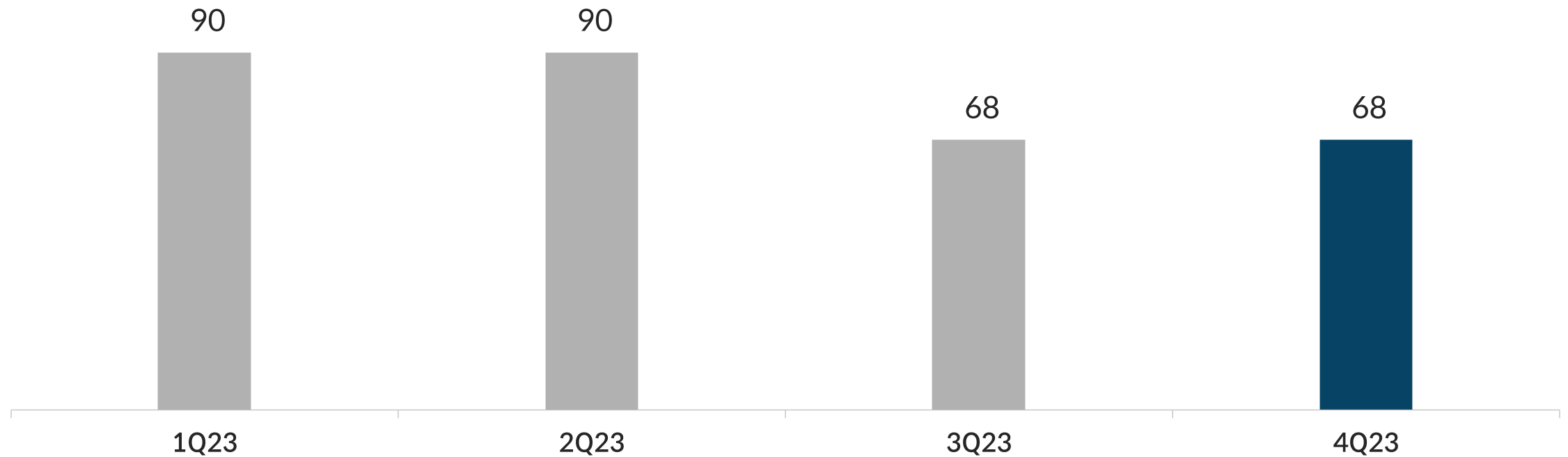


**Efforts Ongoing to Optimize R&D and CAPEX for Flawless Launch of BEV Platforms**

Note: E&FP consolidated since 2Q 2019

# Dividend

4Q 2023 Quarterly Dividend (68 KRW per share)



**Shift to Annual Dividend in 2024; Amount to be Determined Based on Free Cash Flow**

# YE 2023 Balance Sheet

## Balance Sheet

(K-IFRS / KRW in Billions, x times)

	Dec 2023	Dec 2022	Dec 2021
<b>Cash and cash equivalent</b>	779	1,436	1,404
<b>Account receivable</b>	1,344	1,285	1,025
<b>Inventories</b>	1,140	972	810
<b>Property and equipment</b>	2,716	2,371	2,336
<b>Intangible assets</b>	2,126	1,923	1,790
<b>Lease assets</b>	295	249	227
<b>Other assets</b>	844	863	642
<b>Total assets</b>	<b>9,244</b>	<b>9,099</b>	<b>8,234</b>
<b>Account payable</b>	1,867	1,824	1,475
<b>Debt</b>	4,146	4,280	3,723
<b>Other liabilities</b>	722	625	560
<b>Shareholder's equity</b>	2,372	2,236	2,343
<b>Non-controlling</b>	137	134	133
<b>Total liabilities &amp; shareholders' equity</b>	<b>9,244</b>	<b>9,099</b>	<b>8,234</b>

## Cash and Debt

Cash Balance	Dec 2023	Dec 2022	Dec 2021
<b>Net Debt</b>	3,368	2,844	2,319
<b>Net Debt Ratio</b>	1.34	1.20	0.94
<b>Debt to Equity</b>	1.65	1.81	1.50

Leverage	2023	2022	2021
<b>EBITDA</b>	876	814	834
<b>Debt / EBITDA</b>	4.74	5.26	4.46
<b>Net Debt / EBITDA</b>	3.85	3.49	2.78
<b>EBITDA / Net Interest Expenses</b>	5.59	8.78	10.54

**Management Weighs Options to Improve Balance Sheet in 2024**

# Financial Outlook

(KRW in billions)

	2024	2025
Revenue	~10,000	~11,000
EBITDA	~1,050	~1,260
Operating Income	~400	~600

**Management Maintains Annual EBITDA Target for 2024 and 2025**

# Table of Contents

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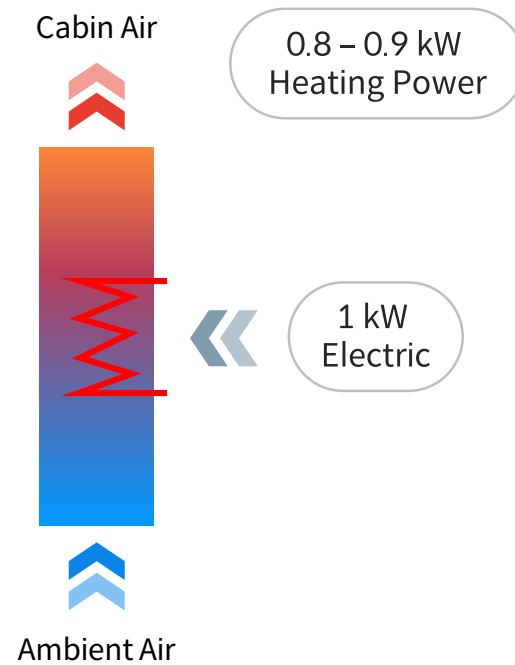
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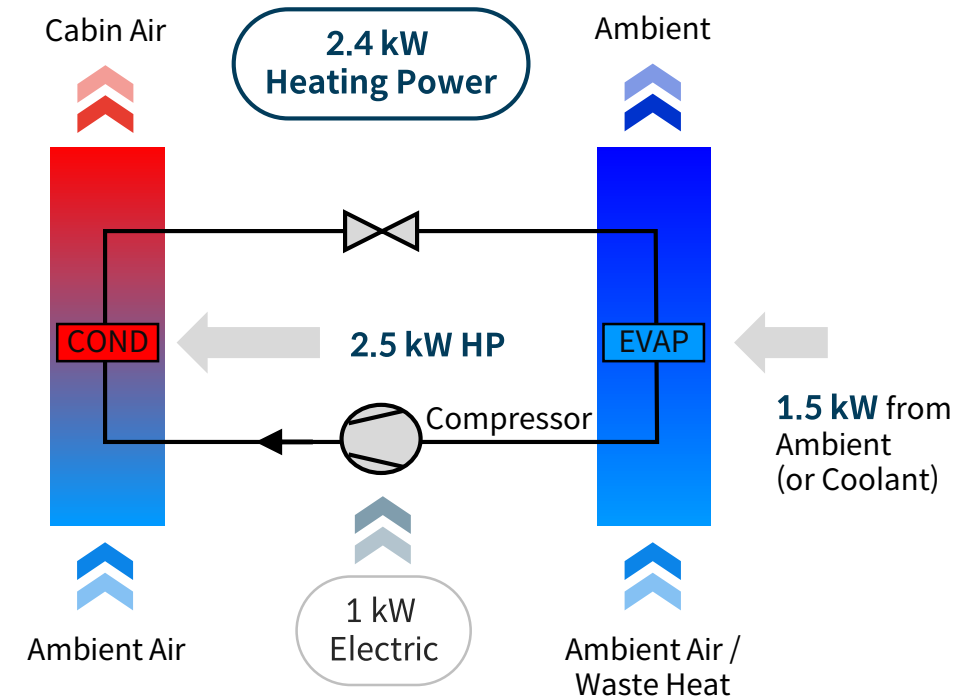


# Heat Pump Energy Efficiency

## Electrical Heater (PTC)



## Heat Pump System

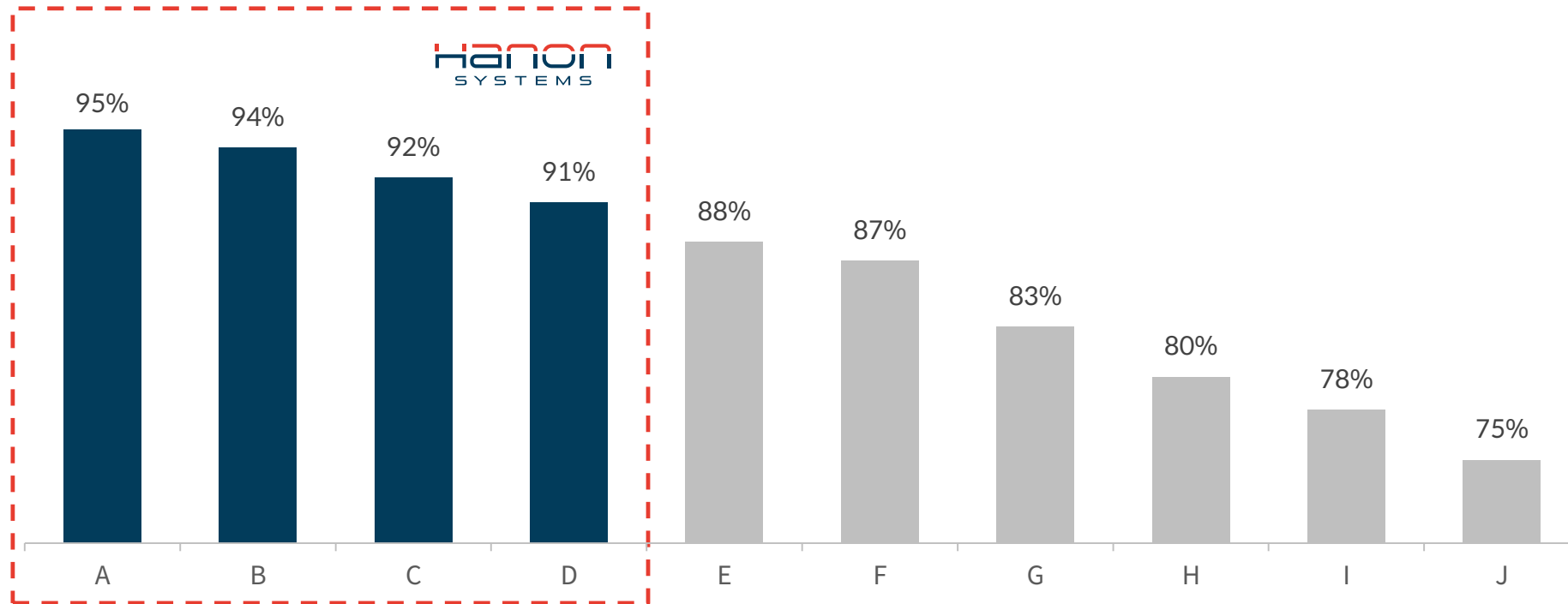


**Heat Pump System ~3 Times More Efficient than Electric Heating**

# Market Leading Performance of Heat Pump System

## Driving Range with Heater On as % of Driving Range in Room Temperature

[ %: Driving range at -7°C / driving range at 25°C ]



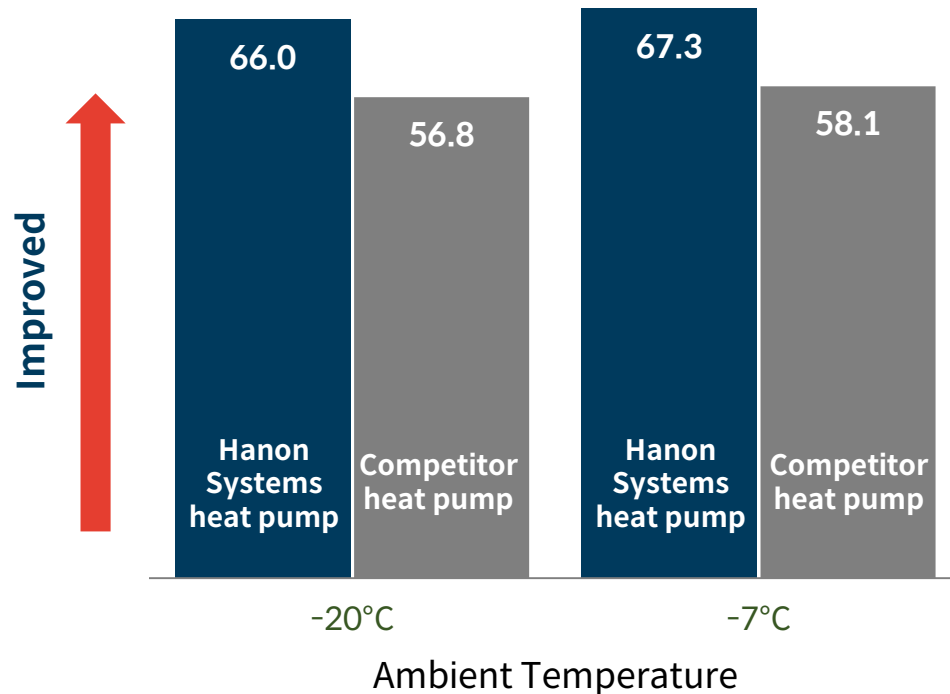
**Hanon Systems Heat Pump Technology Provides Improved Driving Range**

# Warm-up Performance Comparison

Hanon Systems Heat Pump vs Competition

## Air Outlet Temperature (°C)

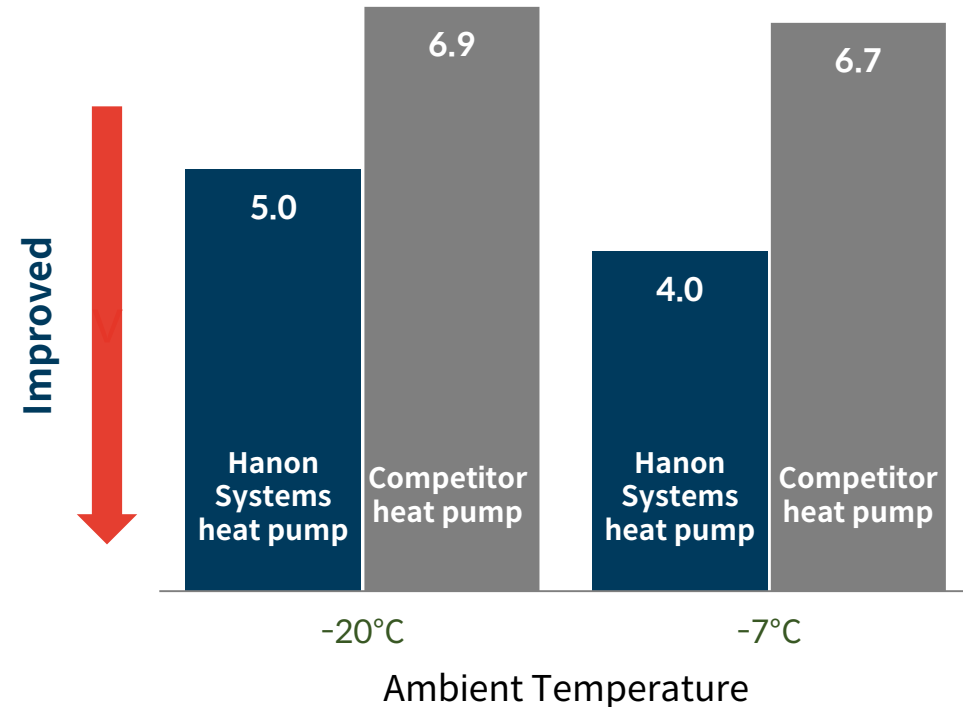
after 20 minutes



**Higher heater discharge air temperature has a direct correlation to passenger time to comfort**

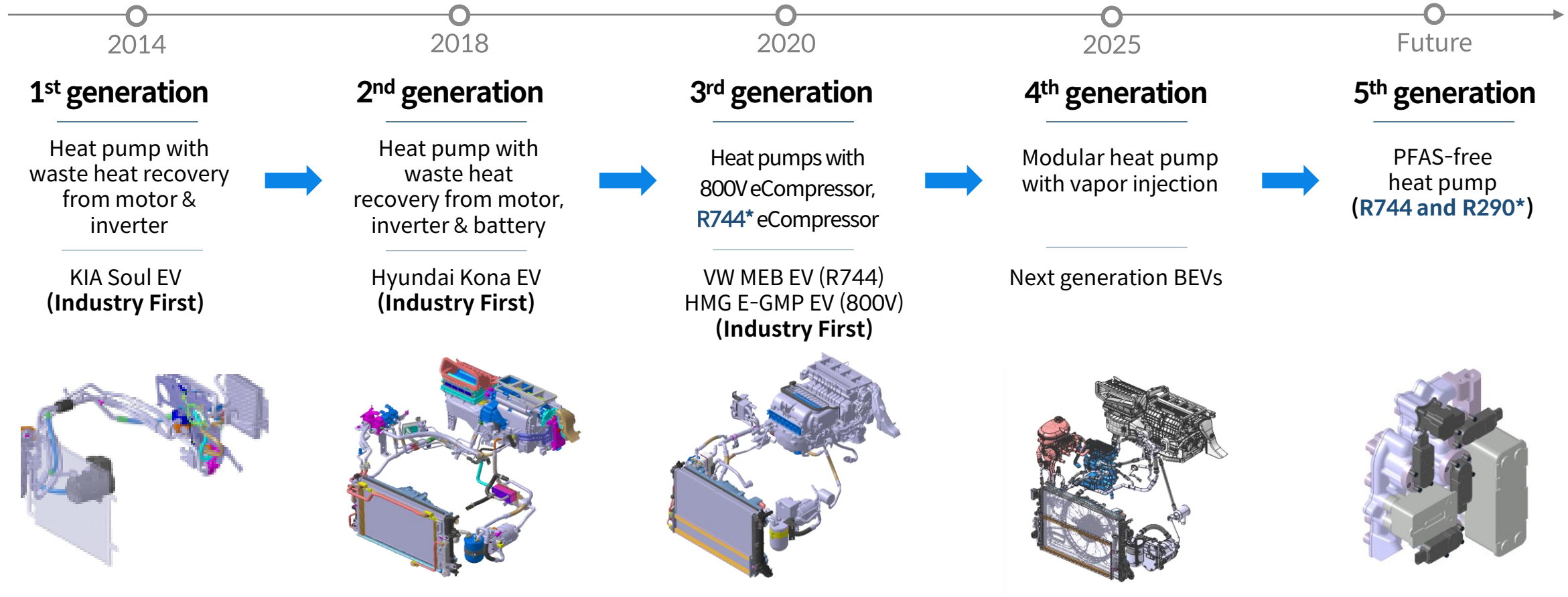
## Total Power Consumption (kW)

after 20 minutes



**Lower heating power consumption has a direct correlation to EV winter driving range**

# Heat Pump Technology Roadmap



**Hanon Systems is the Global Leader in Electric Vehicle Thermal Management**

\* PFAS Response

# Legislation is Driving Future Requirements

## EU PFAS Regulation

\* PFAS: Per- and Polyfluoroalkyl Substances

### Purpose

Phase out the use of PFAS which is including HFC and HFO refrigerants (R1234yf) in EU

### Current Status

- ECHA<sup>1</sup> published draft for PFAS ban Feb, 2023
- MAC<sup>2</sup> w/ eComp: ban with transition period 1.5 years after EiF (Entry into Force)
  - MAC w/ mComp: ban with derogation 6.5 years

### Target

Final decision expected in 2025

## SAE TMR CRP

\* Society of Automotive Engineers Thermal Management Refrigerant Cooperative Research Program

- Develop refrigerants for more efficient H/P system with OEMs, suppliers and others
- Heat pump operation at low ambient (-40°C)
  - Keep typical A/C efficiency at high ambient (45°C)

Ongoing investigation for alternative refrigerants by six sub-CRP groups:


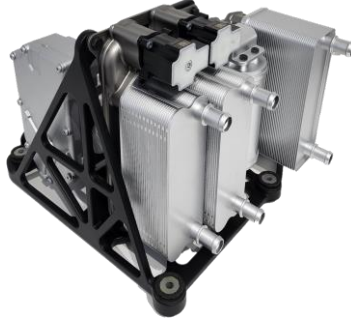
AMOLEA10X, HFOG7, D1V, 1234yf+, R744+, R290

Hanon Systems active participation in R290 and D1V groups

Planned implementation ready by 2026

## Developing Innovative Solutions in Support of Future Legislation

# Hanon Systems PFAS-Free Thermal Solutions

Refrigerant	R744 (CO <sub>2</sub> )	R290
<b>Hanon Systems Technology</b>	 <p>eCompressor    Accumulator With IHX<sup>1</sup>    Electronic Expansion Valve    Leak-Free Refrigerant Fittings (Metal Seal)</p>	 <p>e.g. Secondary loop all-in-one refrigerant module</p>
<b>Key benefits</b>	<ul style="list-style-type: none"> <li>• R744 is a climate-neutral refrigerant with GWP: 1</li> <li>• Proposed EU PFAS regulation compliant</li> <li>• Offers efficient and full operation to -30°C</li> <li>• Enhances EV driving range especially in winter</li> </ul>	<ul style="list-style-type: none"> <li>• R290 is an eco-friendly (PFAS-free) refrigerant</li> <li>• Offers high efficiency and extended driving range</li> <li>• Module integrates all refrigerant components with package and in-line manufacturing improvements</li> </ul>
<b>Hanon Systems Status</b>	<ul style="list-style-type: none"> <li>• All key R744 components in mass production</li> <li>• The first to introduce a portfolio of R744 thermal solutions for BEVs</li> </ul>	<ul style="list-style-type: none"> <li>• Components and modules under development</li> </ul>

<sup>1</sup> IHX: Internal Heat Exchanger

# Conclusion

- Heat pumps are becoming mainstream electric vehicle technology by helping to maintain driving range and the charging time in winter conditions where passenger and battery heating is required
- With its extensive patent portfolio, Hanon Systems offers proven experience delivering heat pump technologies with outstanding performance
- Hanon Systems is the global leader in eco-friendly thermal solutions using natural refrigerants to meet thermal management market needs and EU PFAS environmental regulations