

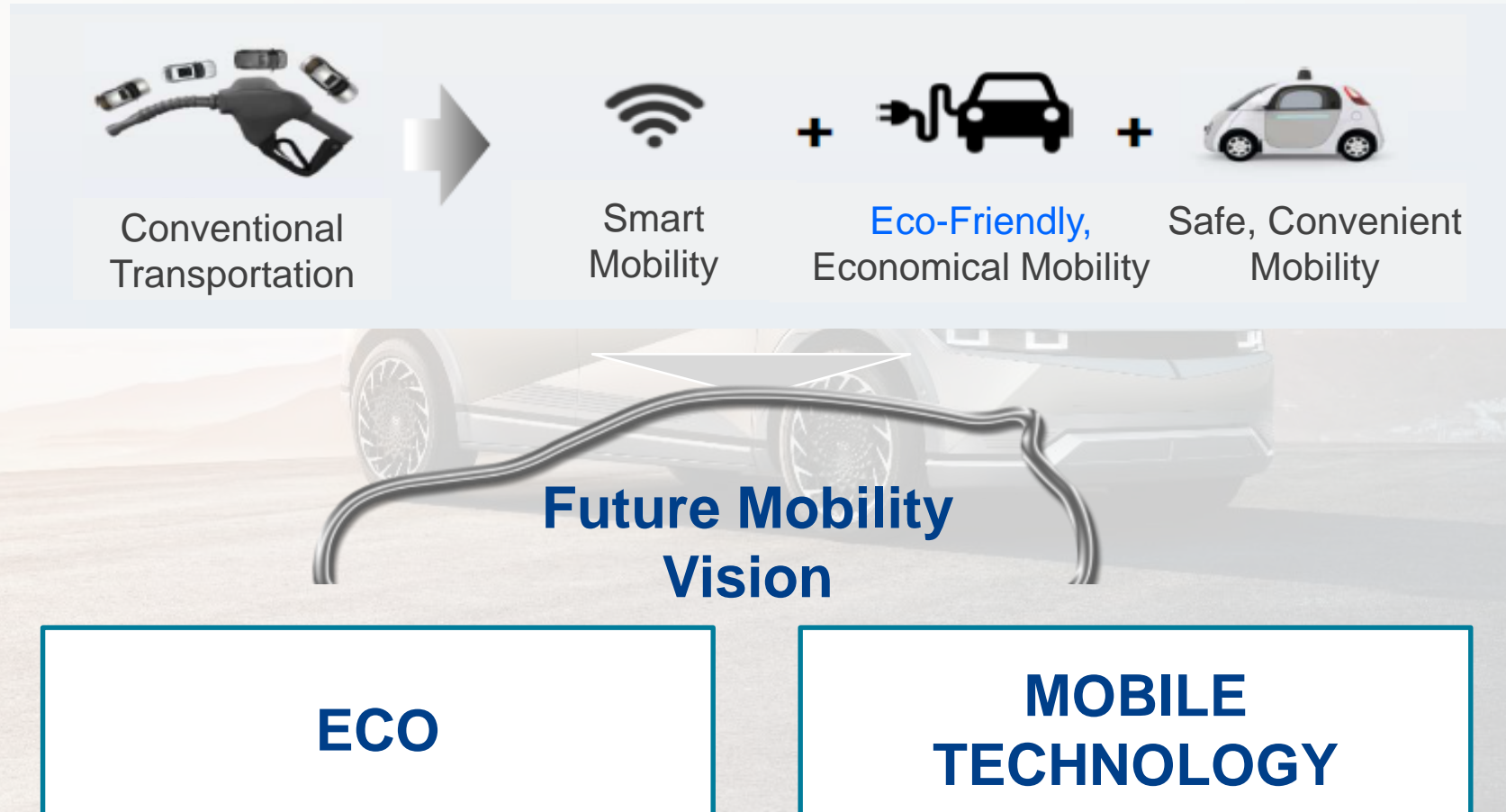


Olabisi Boyle

Vice President, Product Planning & Mobility Strategy

NORTHSTAR: "PROGRESS FOR HUMANITY"

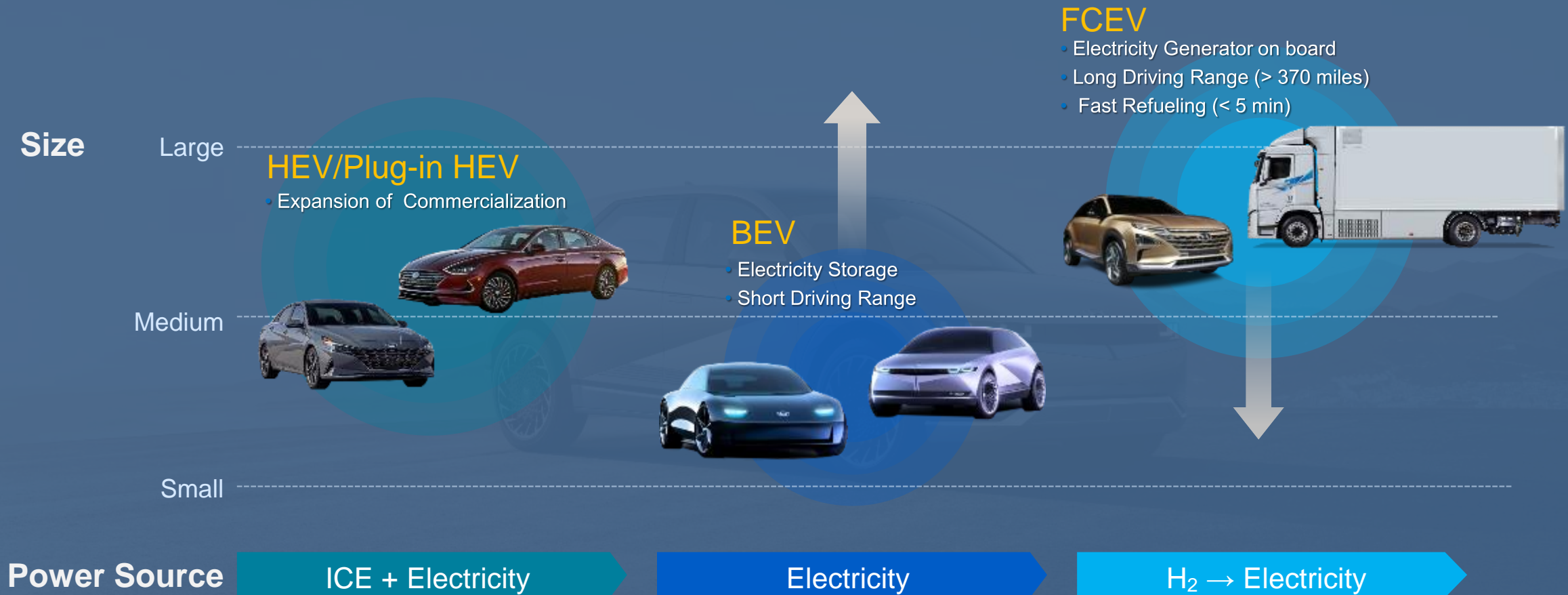
Hyundai is rapidly transforming from an automobile manufacturer into a *Smart Mobility Solutions Provider*.



"Progress
for
Humanity"

ECO-FRIENDLY VEHICLES

Hyundai is rapidly transitioning from an automobile manufacturer into a Smart Mobility Solutions Provider.



ICE: Internal Combustion Engine; HEV: Hybrid Electric Vehicle; PHEV: Plug-In Hybrid Electric Vehicle;
BEV: Battery Electric Vehicle; FCEV: Fuel Cell Electric Vehicle

IONIQ FAMILY: E-GMP PLATFORM

The new IONIQ model line accelerates our vision and kicks Hyundai's U.S. electrification efforts into high gear.



IONIQ 5

The IONIQ 5 is a crossover that sets a new standard for Hyundai and the EV industry as a whole--redefining the electric mobility lifestyle for a new generation of eco-savvy customers.



ELECTRIFICATION HURDLES

Based on research, we identified several buyer hurdles for buyers considering electrified vehicles.

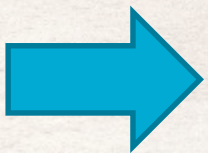
❶ Range Anxiety



❷ Slow Charging Time



❸ Public Charging Infrastructure



Hurdles are addressed with IONIQ 5

IONIQ 5 OVERCOMES HURDLES

When your mission is to offer a new mobility experience for the next generation, you need to go above and beyond what customers expect in an electrified vehicle.

❶ 300 miles of driving range



❷ 10-80% Charge in 18 minutes



❸ Partnership with Electrify America



HYUNDAI HOME

Hyundai Home is a co-branded energy ecosystem service that will facilitate easy installation and integration of a home charger, solar panels, and home energy storage system.



Early-2022 launch

ALL-NEW 2022 IONIQ 5

A key development priority was to deliver on unmet needs by listening to the voice of the customer.



MARKET OPPORTUNITIES

IONIQ 5 will deliver on product attributes that fall short for competitive electric vehicle owners.

Safety: Forward Collision-Avoidance Shouldn't Be Optional

"Vehicle driver system should be standard across all models."

- *Electric Buyer Unmet Need*

Advanced Technology: Technology Should Be Easier

"Less basic screen. More customization. Better/more intuitive menus and looks. The tech is there, the design is BASIC."

- *Electric Buyer Unmet Need*

"Sound quality. A bit underpowered. Low end is mushy. Center speaker in dash is too aggressive in the mid range. Has unpleasant affect on the stereo image"

- *Electric Buyer Unmet Need*

Space: Room for Improvement

"Longer wheelbase to make more rear seat knee room."

- *Electric Buyer Unmet Need*

"Needs a 60/40 fold down rear seat and a larger trunk."

- *Electric Buyer Unmet Need*

Design: More Style, Please

"Its fully electric, so the styling could reflect that a bit more (futuristic, electrical)."

- *Electric Buyer Unmet Need*

SAFETY IS A PRIORITY



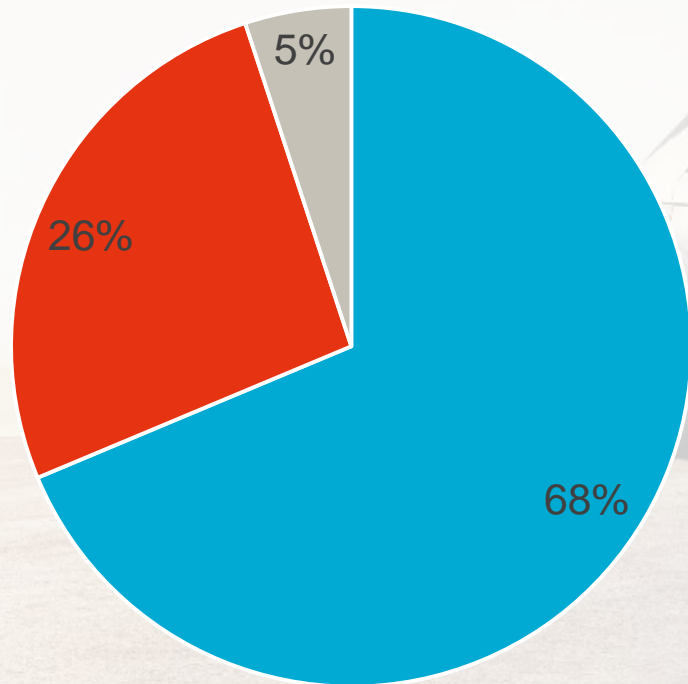
"Hyundai Motor Group aims to become a company cherished for realizing humanity's dream of safe and free movement and a peaceful life."

-Euisun Chung,
Executive Chair, Hyundai Motor Group

SAFETY IS IMPORTANT

For Electric Vehicle owners, 94% consider safety features extremely and very important. At Hyundai, we deliver comprehensive advanced safety features.

Safety Features Importance
Purchase Reasons



■ Extremely Important ■ Very Important ■ Somewhat Important

Source: 2021 US MaritzCX NVCS (Oct '20-May '21) Hyundai, Note: scale is Extremely Important, Very Important, Somewhat Important, Not Very Important, Not at All Important

22MY IONIQ 5 Advanced Safety

Forward Collision Avoidance



Pedestrian & Cyclist Detection



Blind Spot Collision Avoidance Assist



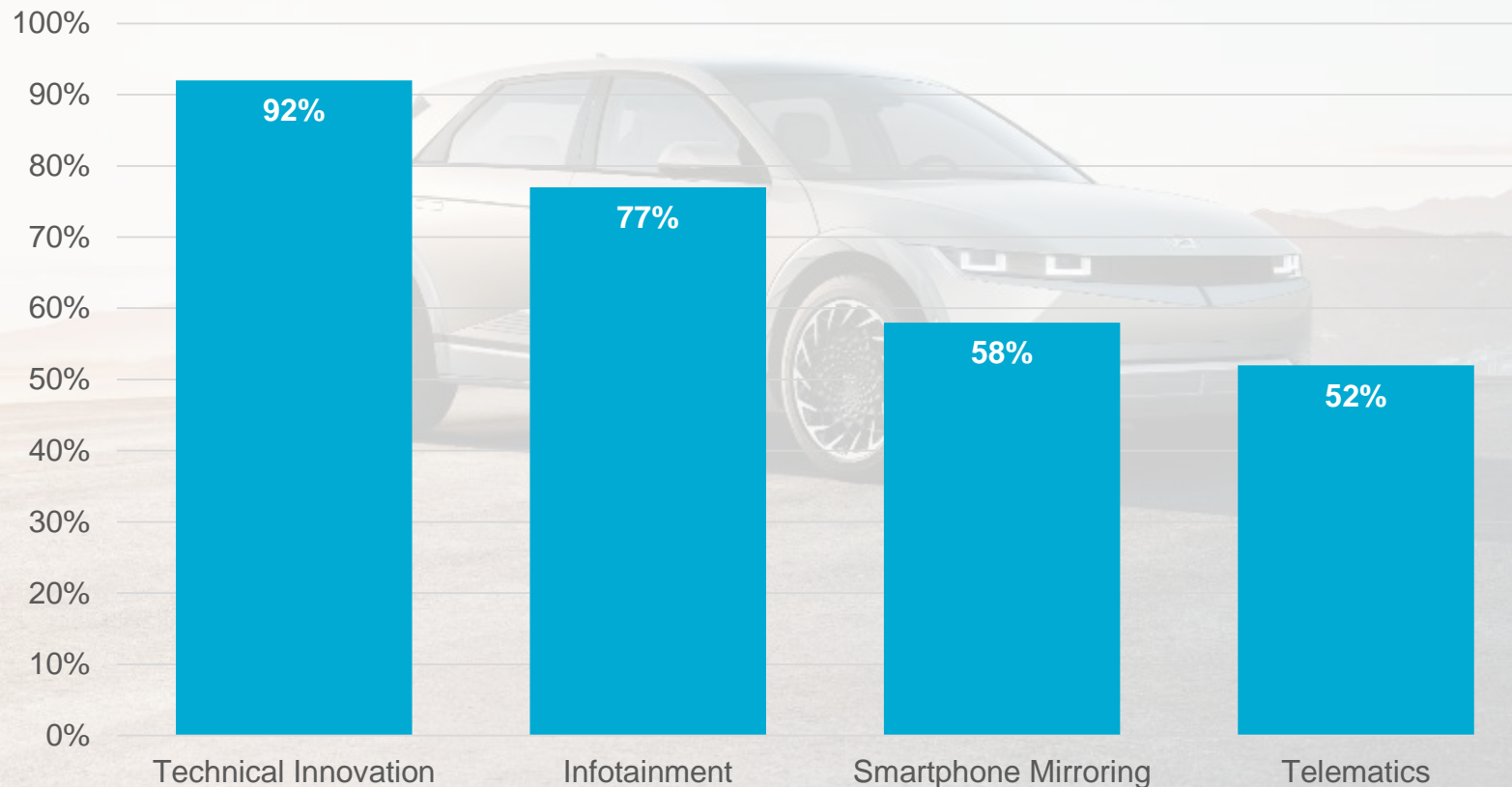
Reverse Collision Avoidance Assist



DEMOCRATIZATION OF TECHNOLOGY

Safety and technology features are extremely/very important in EV owners' purchase consideration. Top 2 Box, 92% of EV buyers want the latest technology to simplify their lives.

Top 2 Box – ***Extremely/Very Important***
Purchase Reasons



DEVELOPMENT PRIORITIES

Our Product Planners developed the IONIQ 5 to deliver on buyer's unmet needs. Throughout the briefing, you will hear about how we deliver on the development priorities.

Innovative Design



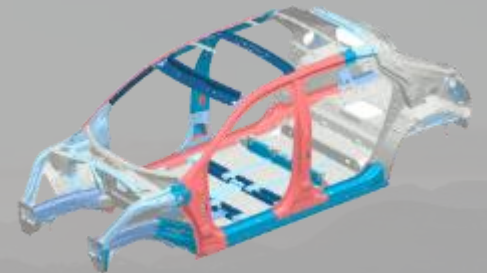
E-GMP Platform



Advanced Tech



Safety



Foundation: Durability, Quality, Reliability

DESIGN





Ryan Miller

Manager Electrified Performance Development, HATCI

HYUNDAI'S HISTORY OF EV DEVELOPMENT

Tech. Secure

1 PHASE (1991 – 1999)



Sonata EV



Accent EV



Santa Fe EV

1991... 1996... 2000 2001 ...

Start of HMG EV Development

Hawaii/Jeju Pilot (2001 ~ 2003)

Mass-Product Structuring

3 PHASE (2012 – 2020)



BlueON EV

2010

Env. Pilot Program Starts



Ioniq EV ~124 mi

2015

1st Global Hyundai Mass Production



Kona EV ~258 mi

2018

Dedicated eGMP Platform

4

IONIQ 5



Ioniq 5 EV ~303 mi

2021



... Beyond

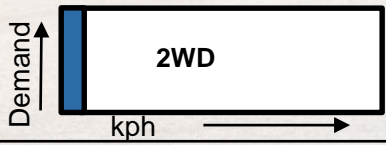
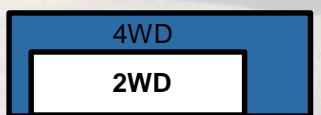
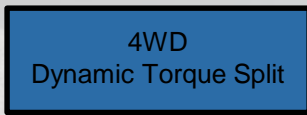



EV

PERFORMANCE, DRIVE MODES & AWD

POWERTRAIN	IONIQ 5 RWD	IONIQ 5 AWD
Battery Capacity	77.4kWh	
Max Power	168kW (225hp)	239kW (320hp)
Max Torque	350Nm(258lbft)	605Nm (446lbft)
Top Speed	185 kph (115mph)	
Target 0-100kph	7.3 seconds	5.1 seconds
EPA Est. Range	303 miles	256 miles

With four highly differentiated driving modes, the IONIQ 5 provides performance without compromise

DRIVE MODE	ECO	NORMAL	SPORT	SNOW
Tuning Concept	Maximum driving range	Comfortable and refined	Nimble and responsive	Maximum traction and stability
eAWD Strategy				
Max Power	168kW	239kW	239kW	239kW
Peak Launch G	0.45g	0.75g	0.75g	0.75g
Coast Regen	L0-L3, I-Pedal, Auto			L0-L1

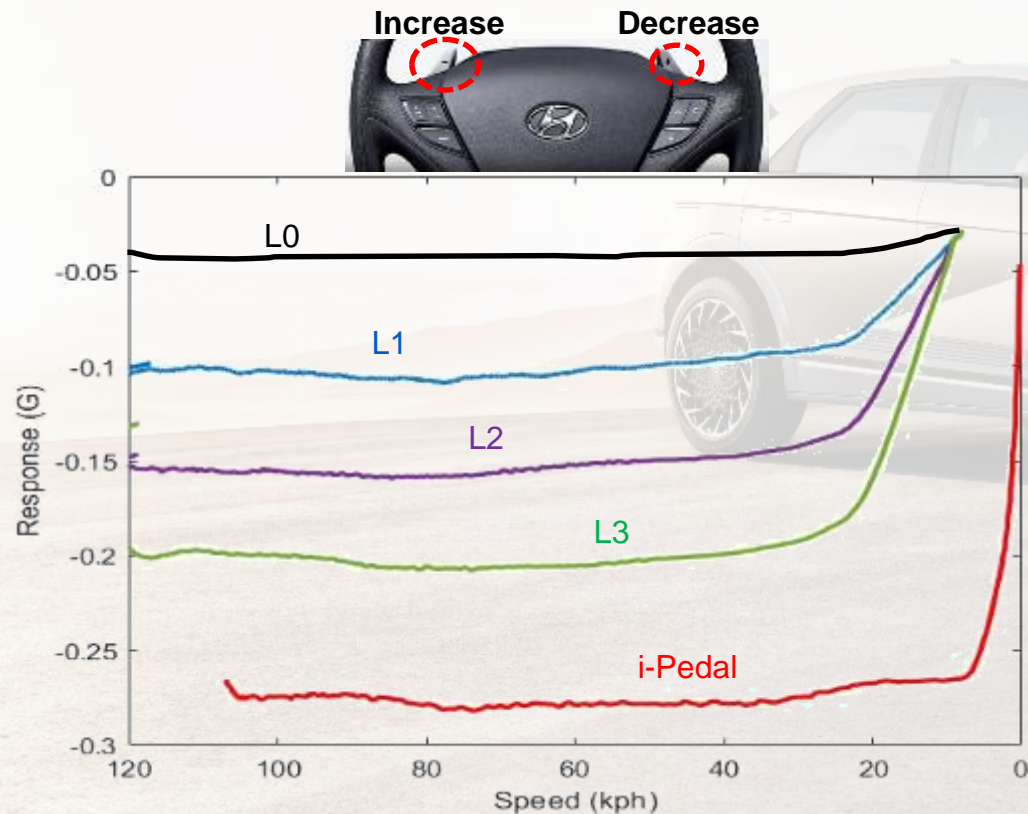
CHARGING PERFORMANCE

CHARGING PERFORMANCE			IONIQ 5 TARGET	2022 FORD MACH-E EXTENDED	TESLA MODEL Y (REFERENCE)
DC Charging (10~80%)	>250 KW DCFC (800V)	Charging Time	18 min	45 min	30 min (based on Tesla V3-250kW)
		Peak Power	~235 kW		
		AER For 5 Minutes of Charging	68 mi		
	150KW DCFC (800V)	Charging Time	25 min (est)	45 min	35 min (based on Tesla V2-145kW)
		AER For 5 Minutes of Charging	42 mi		
AC Level 2 Charging (10~100%)	North America 240V (10.9kW)		6hr 43m	-	-

REGEN STRATEGY & SYSTEM

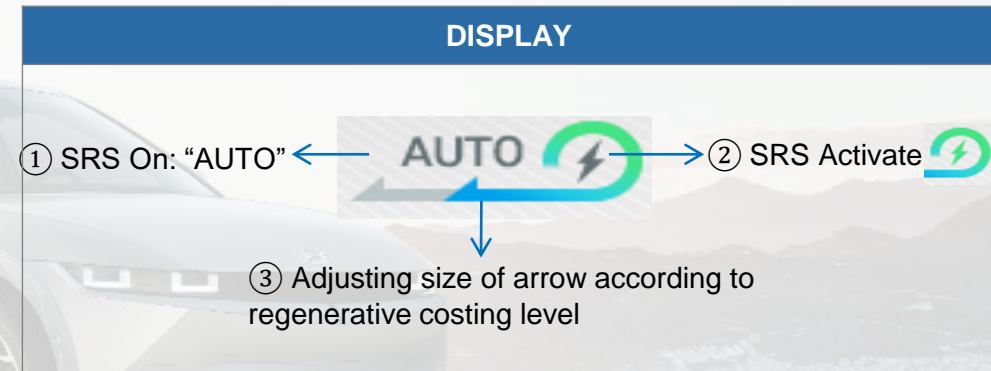
Paddle Shift Coast Regen Strategy

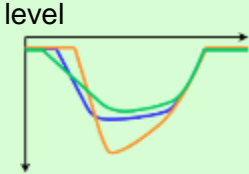
Four levels of customer selectable profiles



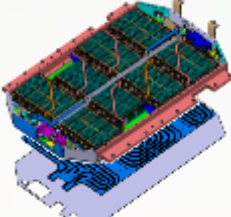

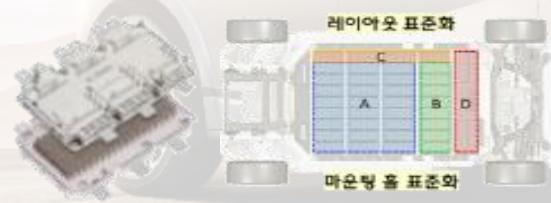
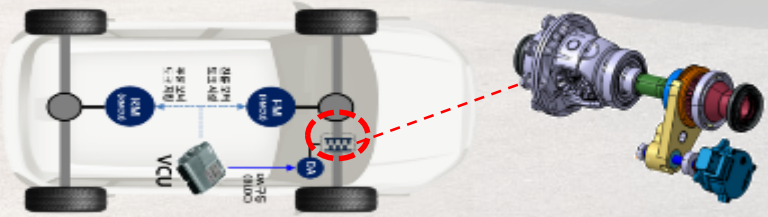
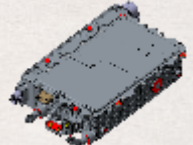
Smart Regenerative System (SRS) 2.0

Automatically adjusting regenerative coasting level



RADAR-BASED SRS	
Description	According to preceding vehicle dist. and relative speed, adjust regen. level 
USM	Strong / Moderate / Weak

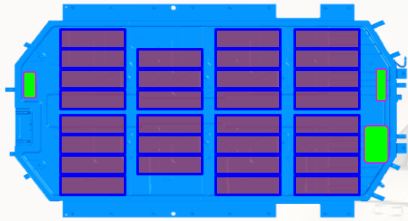
KEY TECHNOLOGY SUMMARY

FEATURE	BENEFITS AND DETAILS
High Voltage Battery System	 <p>Effect: 7% more energy dense than previous generation</p>
High Efficiency Inverter (SiC) and PM Motor	 <p>Effect: 5% more range than previous generation</p>
Combined Charging System 400V/800V	 <p>Effect: 18 min. 80% charge at 800V and able to charge from existing 400V infrastructure</p>
Front Motor Disconnect System	 <p>Effect: increase 6% range of AWD EV</p>
Integrated Charging Control System	 <p>Effect: 50% more charging power and Vehicle to Load (V2L) capability</p>

HIGH VOLTAGE BATTERY

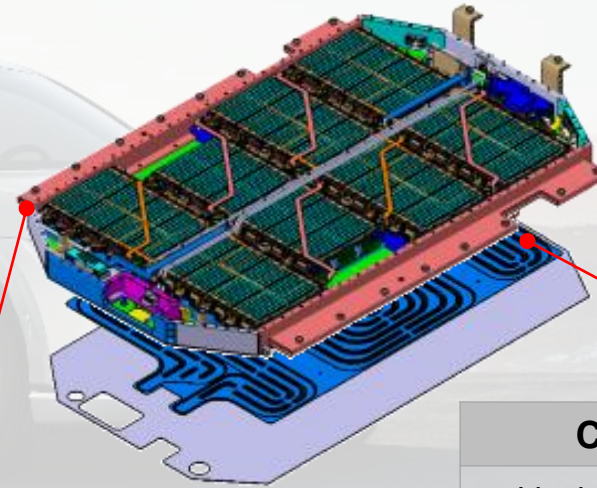
Higher power and more energy dense battery – enabling 303 mile range

STANDARD BATTERY SYSTEM



77.4kWh (384 Cell [2P 192S])

HIGH VOLTAGE BATTERY SYSTEM



COOLANT CHANNEL

Liquid Battery Heating and Cooling System Standard.

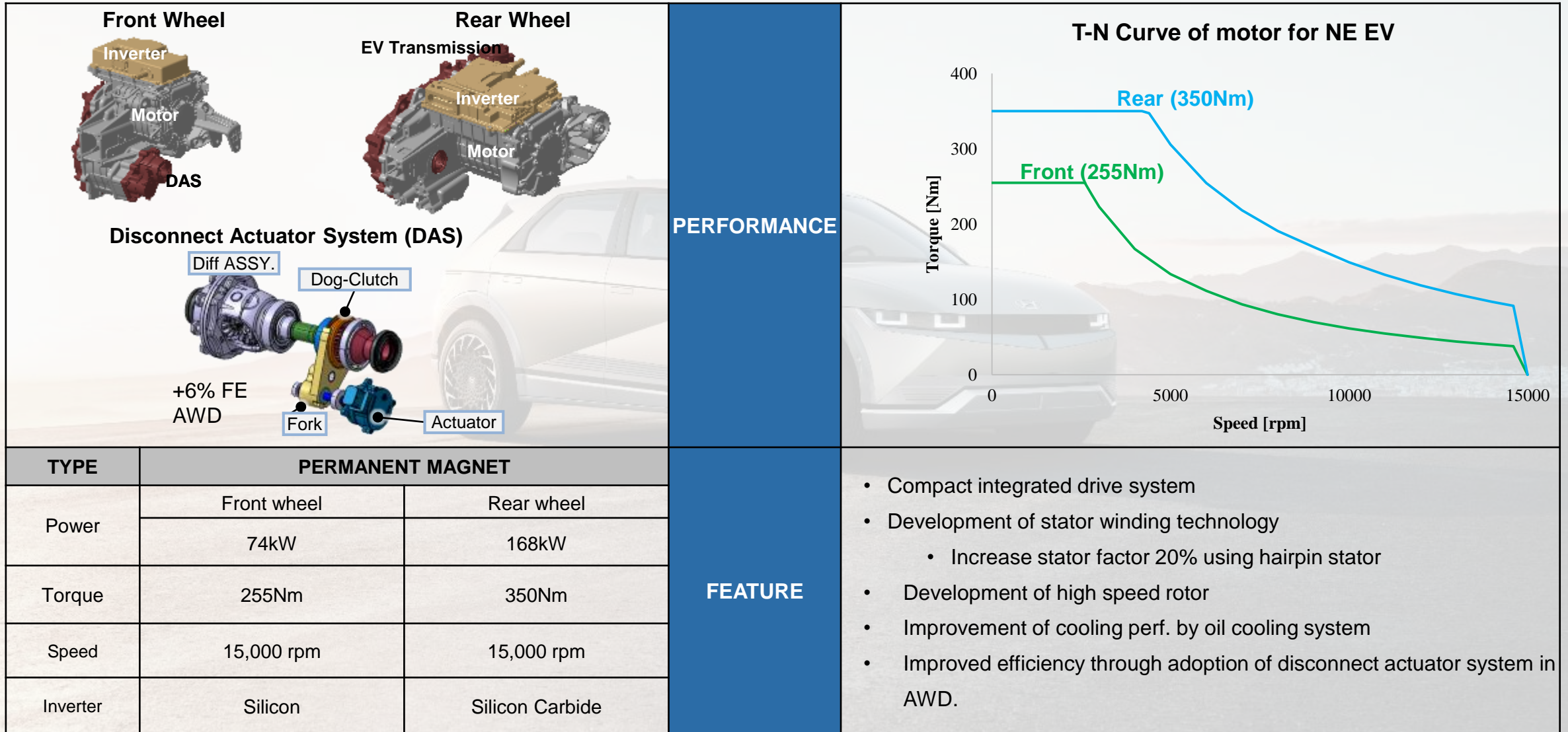
BATTERY MODULE ASSY

Energy Storage and Supply For EV
Cell Protection

	OUTPUT	ENERGY	SYSTEM WEIGHT	ENERGY DENSITY
KONA EV	170 kW	64 kWh	453 kg	141.3 Wh/kg
IONIQ 5	>250 kW	77.4 kWh	482 kg	151.5 Wh/kg

DRIVE SYSTEM

Integrated High Power & Efficient Motors – up to 320HP in AWD

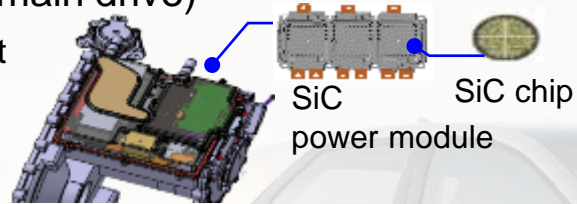


INVERTER & MULTI-CHARGING SYSTEM

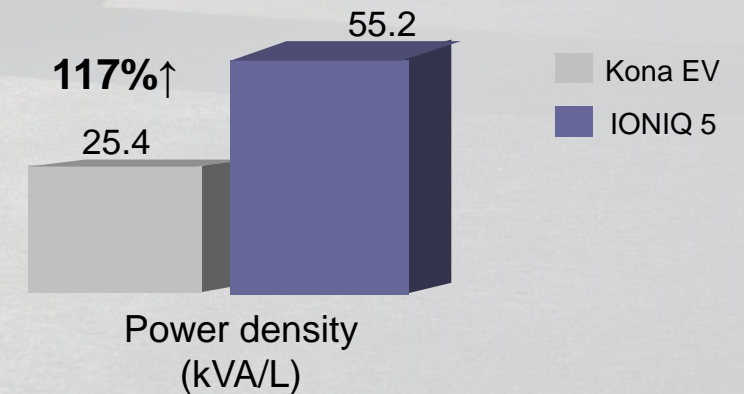
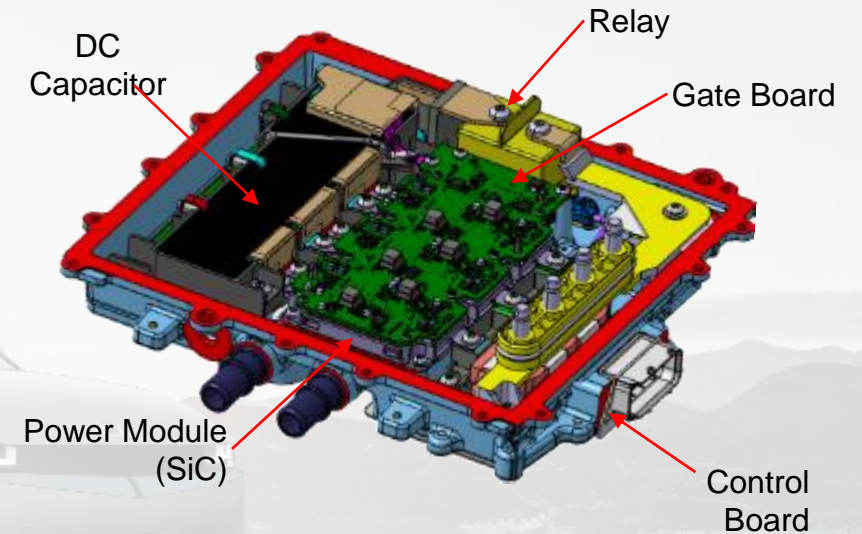
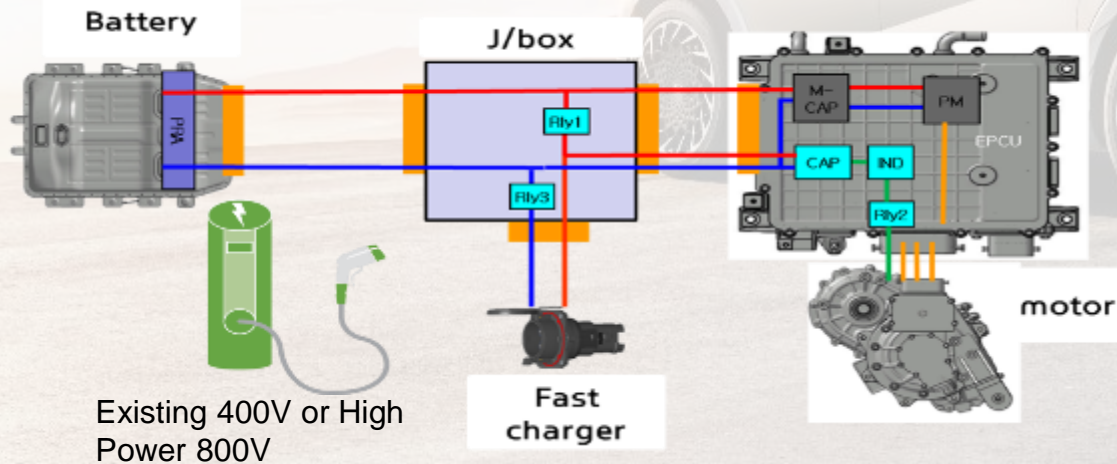
DC Charging Capability on 400V or 800V Chargers in US Market

SiC Power module inverter(main drive)

- Inverter efficiency improvement
- Increase vehicle mileage /PE system cost reduction

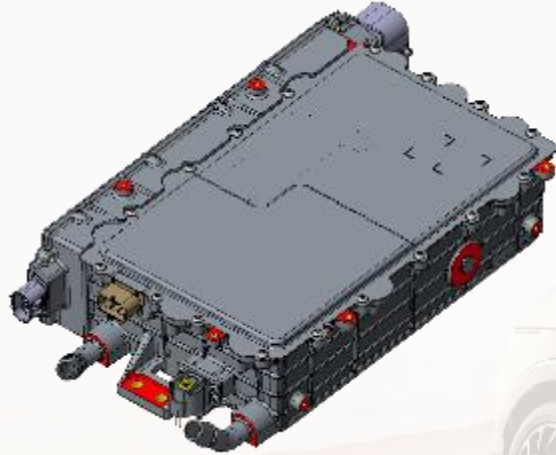


400/800V Multi fast charging system



ICCU – INT. CHARGING CONTROL UNIT

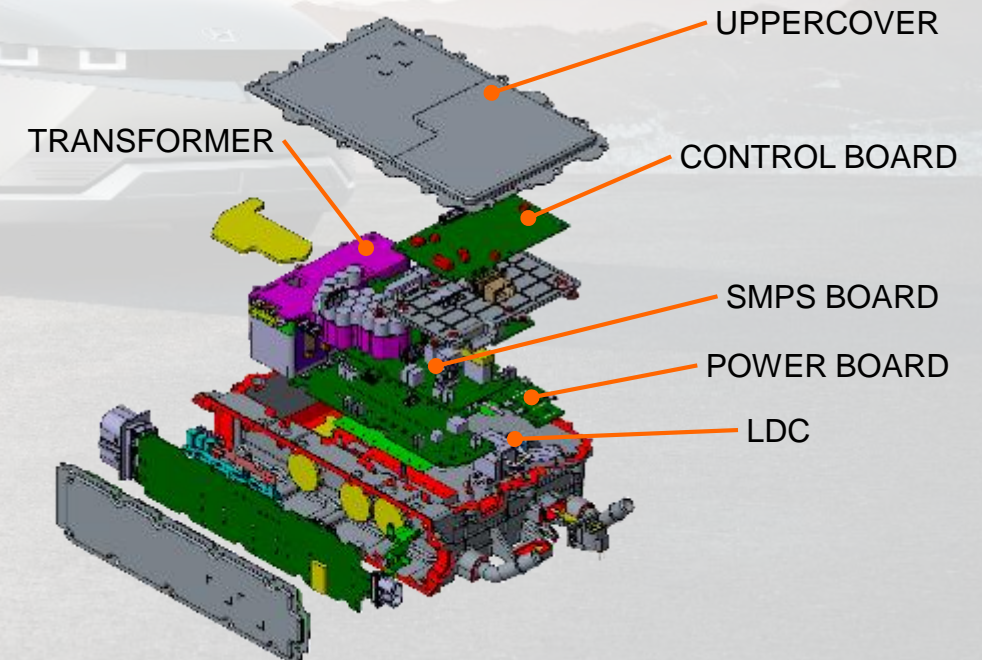
High Power on Board Charger for Charging at Home and V2L



OBC	Power	10.9kW
	EVSE	48A EVSE / 60A Breaker
	Efficiency	95%
LDC	Power	1.8kW
	Efficiency	92%
V2L Power		1.92kVA (120V- 16A)

Hyundai's first OBC / LDC integrated system

- High voltage Si-Carbide semiconductor applied for 800V battery system
- Reducing charging time by increasing charging output power (7.2kW → 11kW)
- Bidirectional OBC topology applied for V2L response (Maximum Power 1.92kVA for US Market)



VEHICLE TO LOAD – SYSTEM CONFIGURATION

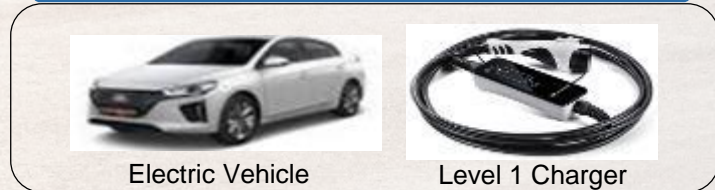
V2L (Vehicle-to-Load)

- Provides 120V inside/outside vehicle
- Supply Power : 1.9kW

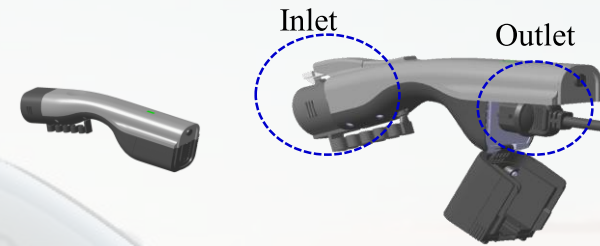
HOME / CAMPING / TAILGATING GOODS



LEVEL 1 CHARGING EV



ACCESSORY PART: OUTDOOR V2L CONNECTOR

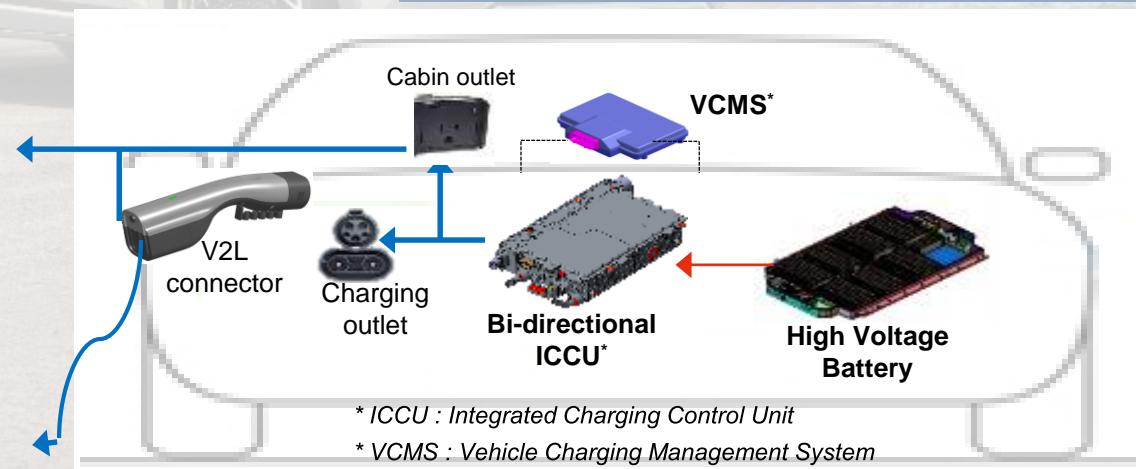
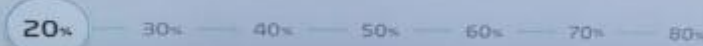


LIMITED TRIM: CABIN OUTLET



V2L Settings for
SOC in Head Unit

Discharging Limit : 20%



POWERTRAIN HIGHLIGHTS



Driving Range

300+ Mile All-Electric Range (RWD)

Ultra-fast Charging

10% to 80% in 18 minutes

On-board Generator

V2L – Charge your electronics

Efficient

MPGe: IONIQ 5 132

Mach-E 101

ID.4 97



Manish Mehrotra

Executive Director, Digital Business Planning & Connected Operations

MULTIMEDIA UPDATES



OVER-THE-AIR UPDATES





Phone



Music



Maps



Messages



Now Playing



HYUNDAI



Podcasts



Audiobooks



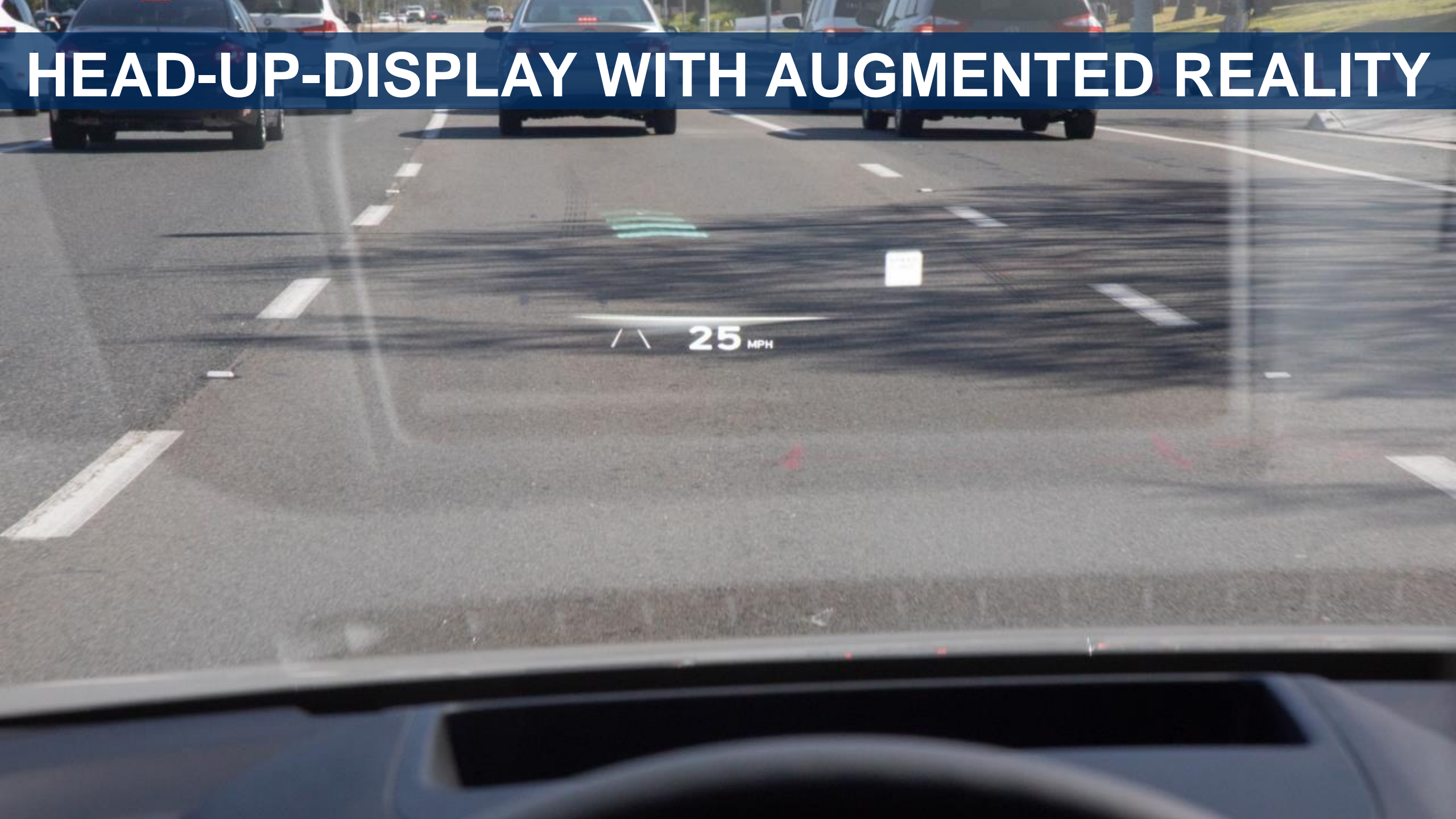
Calendar



Settings

4:33
5G





HEAD-UP-DISPLAY WITH AUGMENTED REALITY

HYUNDAI DIGITAL KEY







HYUNDAI DIGITAL KEY



HYUNDAI DIGITAL KEY

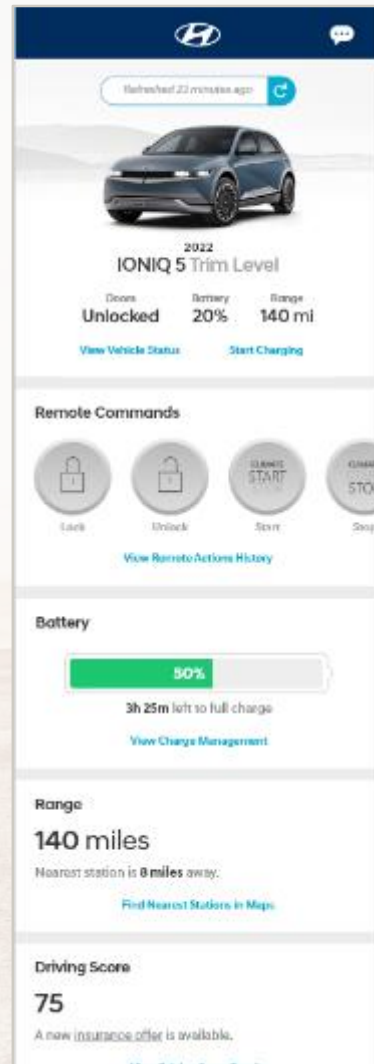


BLUELINK

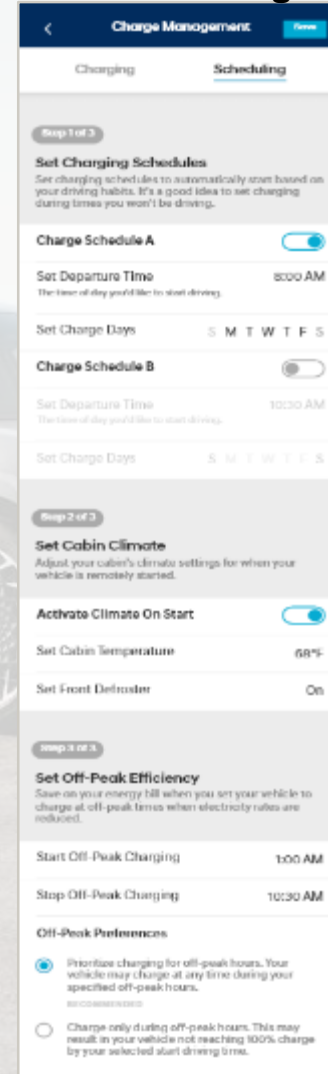
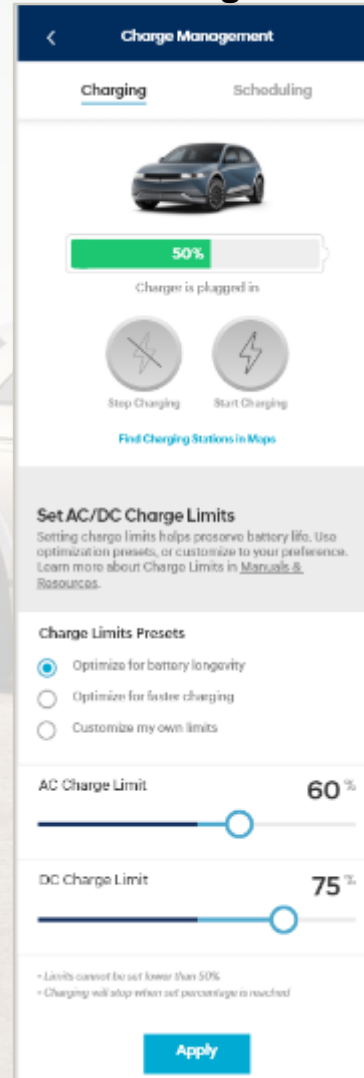


BLUELINK APP REDESIGN

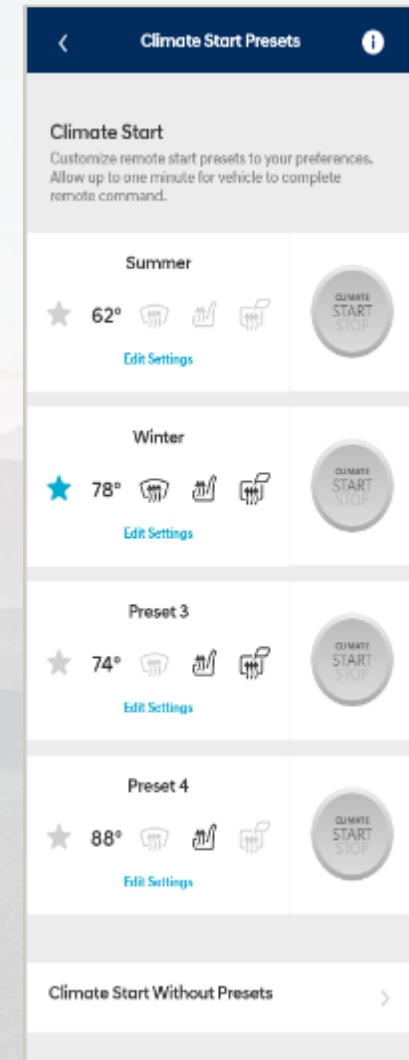
EV Homepage



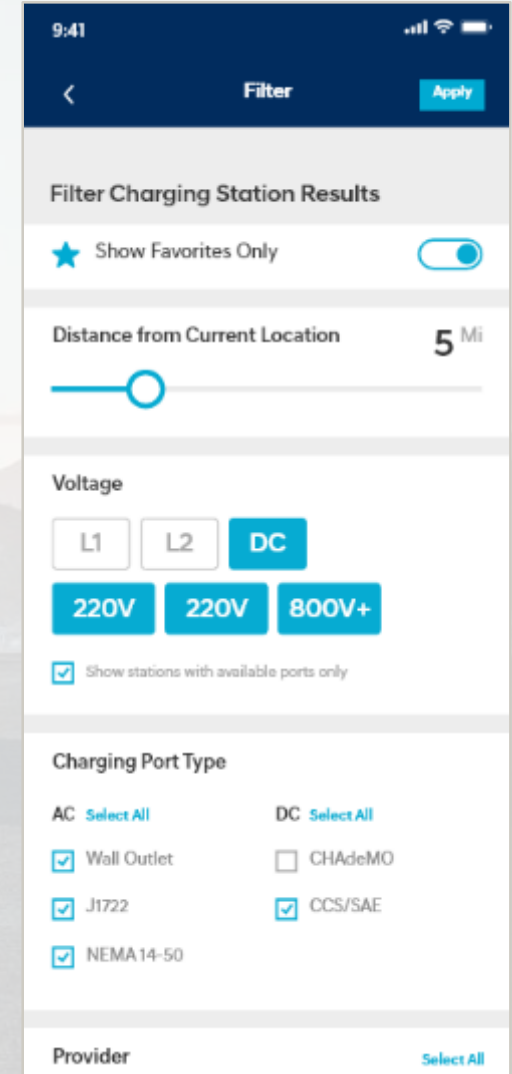
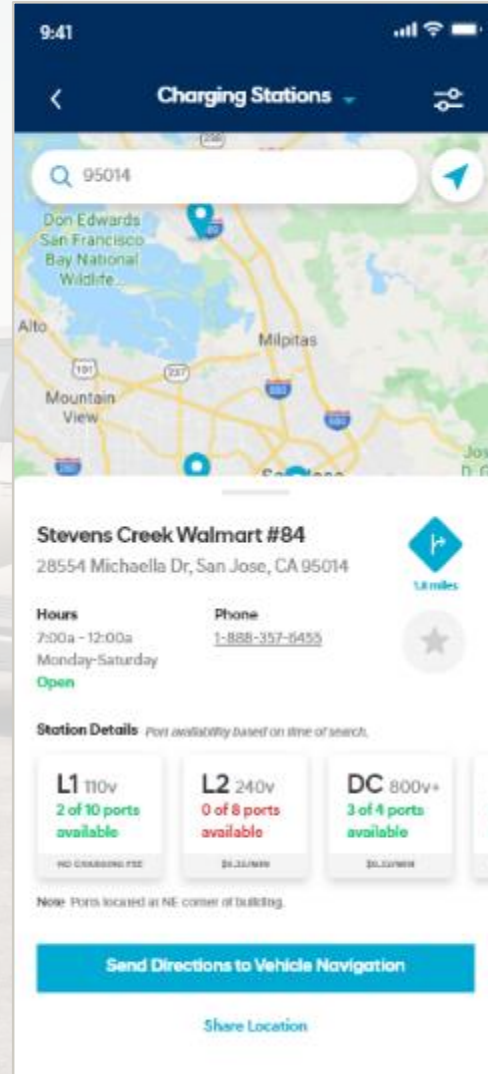
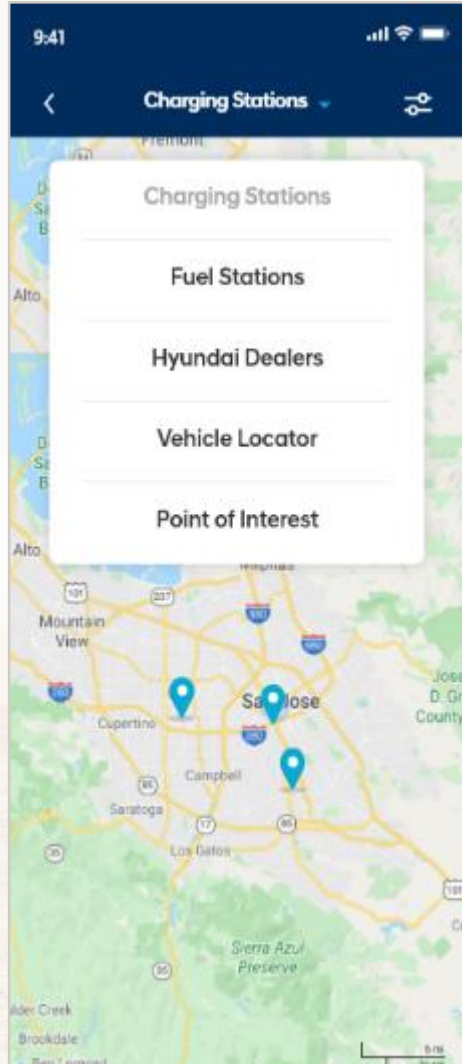
Charge Management & Scheduling



Climate Start Presets



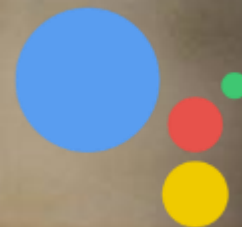
IONIQ 5 OVERCOMES HURDLES







OK Google, Ask
Blue Link to start
my IONIQ 5 and set
the temperature to
72 degrees.



Got it. Starting your
Hyundai IONIQ 5
and setting the
temperature to 72
degrees.









Trevor Lai
Senior Manager, Product Planning

ALL NEW 2022 IONIQ 5

Leveraging Hyundai's dedicated EV platform, E-GMP, the IONIQ 5 delivers on range, ultra-fast charging, surprising interior space, and striking design



SMART LIVING ROOM CONCEPT

Integration of digital technologies and flexible space to fit today's lifestyles



SUSTAINABLE MATERIALS

Incorporation of sustainable materials throughout the interior

Bio PET (Polyethylene Terephthalate)

Made from components extracted from sugar cane



Carpet
Headliner

Bio Paint

Polyurethane paint from bean oil



Dashboard
Door panel

Tyvek

Recyclable fiber



Door center garnish

Recycled Plastic

Recycled plastic bottles

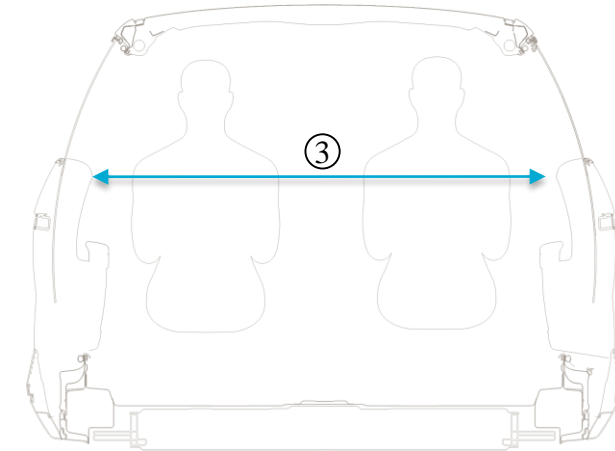
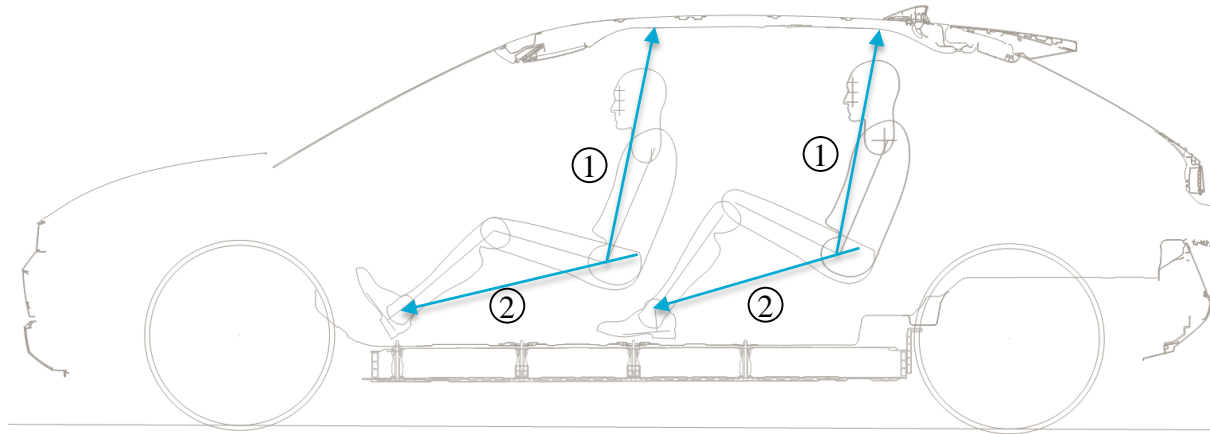


Armrest
Seats



OPTIMIZED INTERIOR SPACE

Minimized front overhang to maximize passenger space



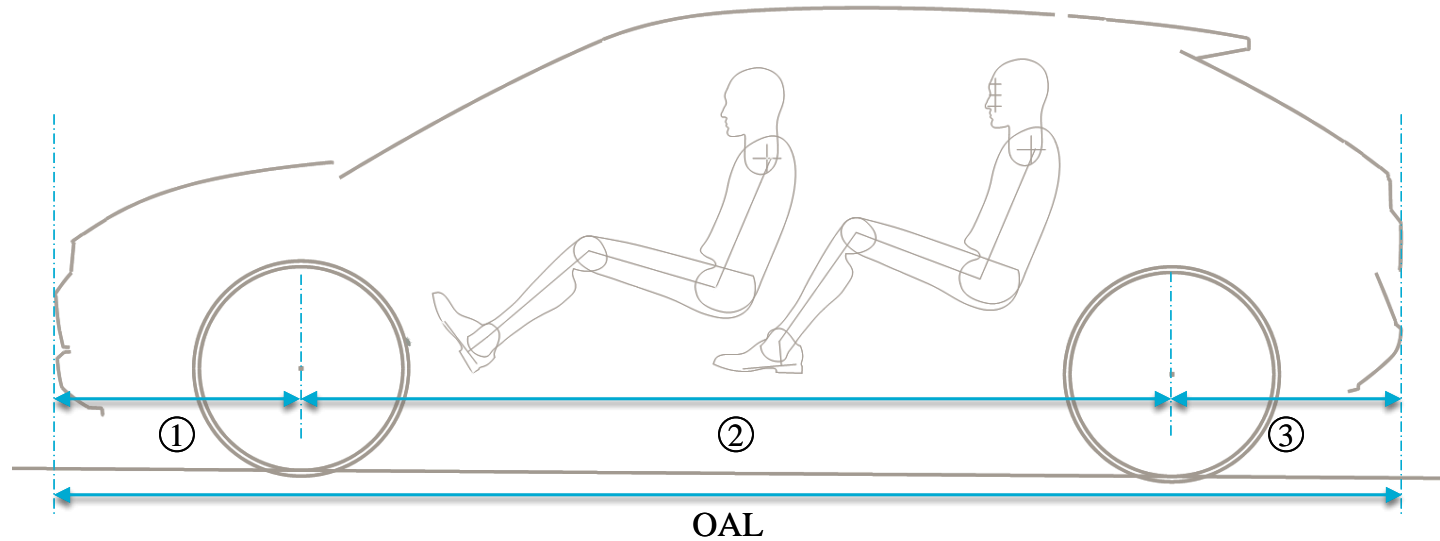
※ PUBLISHED DATA		Mustang Mach E		IONIQ 5		VW ID.4		Tesla Model Y
① Headroom (Normal Roof)	1st row	38.9	+0.9	39.8	-1.4	41.1	-1.2	41.0*
	2nd row	39.3	-0.6	38.7	+0.2	38.4	-0.7	39.4*
② Legroom	1st row	43.3	-1.6	41.7	+0.6	41.1	-0.1	41.9
	2nd row	38.1	+1.3	39.4	+1.9	37.6	-1.1	40.5
③ Shoulder room	1st row	57.6	+0.1	57.7	+0.2	57.5	+1.3	56.4
	2nd row	55.9	+1.8	57.7	+1.7	55.9	+3.6	54.1
Passenger Volume		101.1	+5.4	106.5	+6.6	99.9	-	-

Source: OEM Published Data

* Fixed glass roof option

EXTERIOR DIMENSIONS

Dynamic proportions with long wheelbase and minimized front overhang



	Mustang Mach E		IONIQ 5		VW ID.4		Tesla Model Y	
Length	185.6	-3.1	182.5	+2.0	180.5	-4.5	187.0	
Height	64.0	-0.8	63.2	-1.3	64.4	-0.7	63.9	
Width	74.1	+0.3	74.4	+1.5	72.9	-1.2	75.6	
① Front Overhang	34.0	-0.7	33.3	-	-	-1.1	34.4	
② Wheelbase	117.4	+0.7	118.1	+0.7	108.9	+4.3	113.8	
③ Rear Overhang	34.2	-3.1	31.1	-	-	-7.7	38.8	
Passenger Vol.	101.1	+5.4	106.5	+6.6	99.9	-	-	
Cargo Vol.	29.7	-2.5	27.2	-3.1	30.3	-	-	
Interior Volume (Pass + Cargo Vol.)	130.8	+2.9	133.7	+3.5	130.2	-	-	

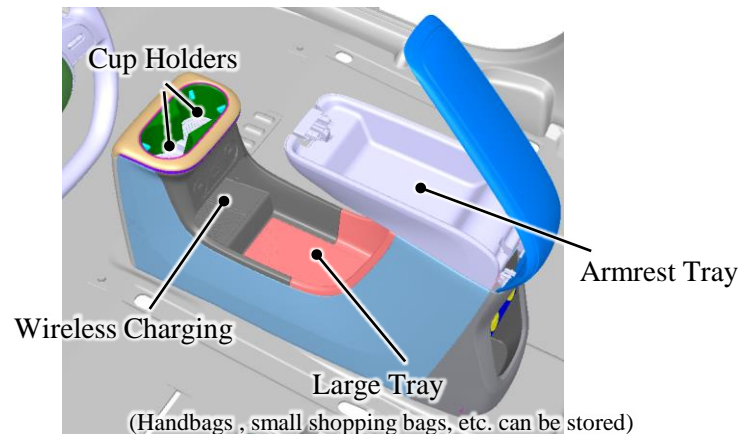
Source: OEM Published Data

CARGO CAPACITY



Real World Usability

Design of cargo space took into consideration the potential needs of target buyers; items like golf bags, strollers, and luggage.



Volume (cu. ft.)	Mustang Mach E	IONIQ 5	VW ID.4
Passenger Volume	101.1	106.5	99.9
Cargo Volume	29.7	27.2	30.3
Interior Volume	130.8	133.7	130.2

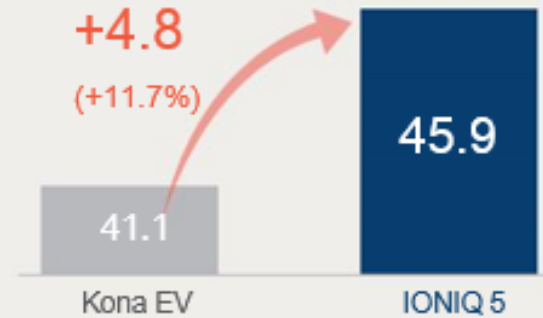
BODY STRUCTURE

Rigid & Lightweight



- NORMAL
- 60K
- 80K
- 100K
- 120K
- Hot Stamping

Torsional rigidity ($10^4 \text{ kgf-m}^2/\text{rad}$)



Improved Rear Structures

Stronger RR FLR MBR structure



RR member strengthening



Single ring-shaped tail gate structure

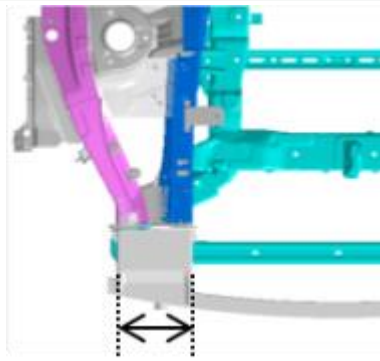


Redesigned, stronger rear QTR member



SAFETY PERFORMANCE

Occupant Safety Focus



Wide Crash Box





Structural dispersion of collision energy
(multi path load structure)



Hot-stamped center pillar

Targeted to Achieve Top Safety Performance

Division	Region		IONIQ 5	Mach-E	ID.4	Model Y
NCAP	USA		5★ (target)	Not Rated	5★ (RWD)	5★
IIHS	USA		TSP+ (target)	TSP	TSP+	Not Tested
		Small Overlap	Good	Good	Good	Not Tested

A Company Dedicated to Safety

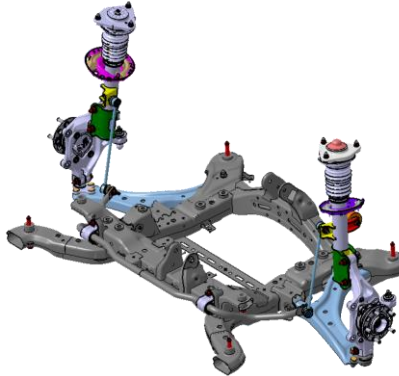


- ✓ Hyundai has won **more total IIHS Top Safety awards than any other brand over the past 5 years**
- With optional front crash prevention and specific headlights. As of November 2021.
- ✓ Hyundai currently has **12 new vehicles recognized for safety in IIHS awards**
- With optional front crash prevention and specific headlights

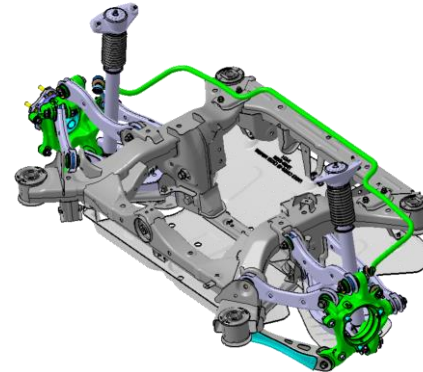
RIDE & HANDLING

Suspension Design

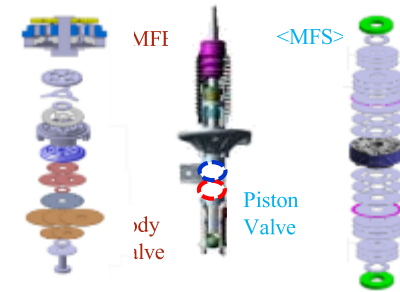
Front Suspension:
MacPherson Strut



Rear Suspension:
Multi-Link (five link)

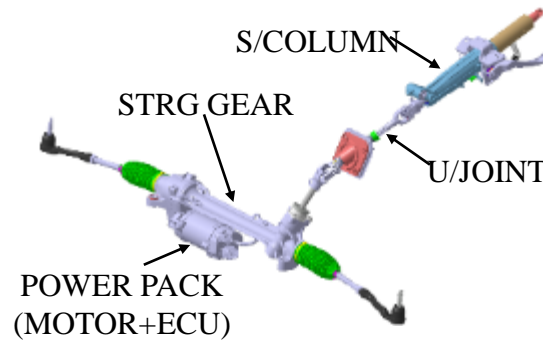


High Performance Damper:
Ride Comfort & Sound
Quality



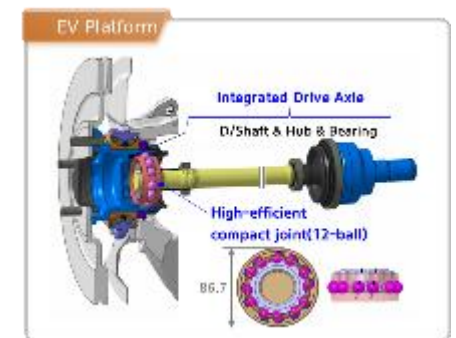
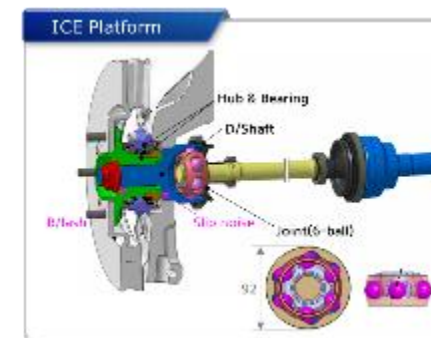
Rack-mounted, Motor-driven Power Steering (R-MDPS)

Nimble, Yet Stable Performance



Provides enhanced response and feedback

Integrated Drive Axle



Improved ride & handling by increasing axle stiffness
Compact hub design reduces weight (-6.5 lbs)

NVH FOCUS

Road Noise Counter Measures

Partial Sound Absorption Layer in Carpet



Acoustic Tires



Rear Subframe Damper



Wind Noise Counter Measures

Rear Spoiler Angle and Rear Glass Surface Pressure



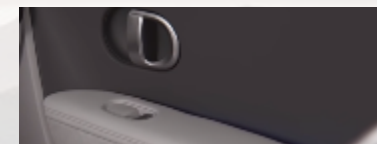
Windshield and Door Glass



O/S Mirror Design



Door Trim



Matches or Improves Upon Luxury Competitors

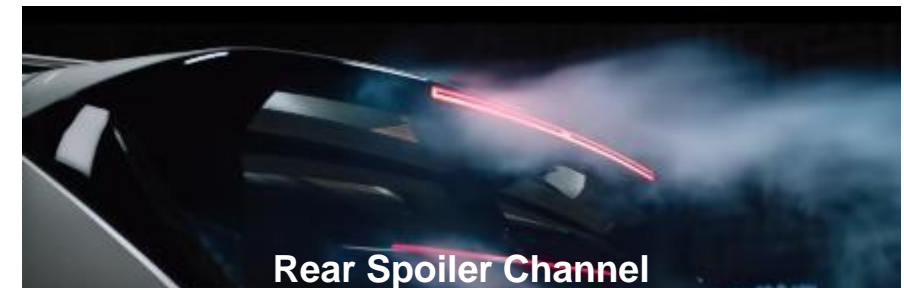
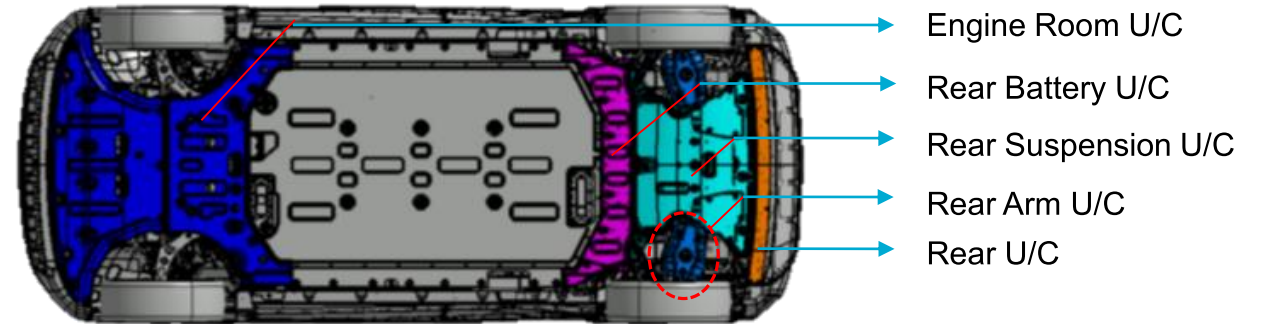
CATEGORY		IONIQ 5		Tesla Model Y	Kona Electric
		FWD	AWD		
Idle	Noise (dBA)	38	38	40	38
	Floor Vibration (dB)	78	78	78	-
Road Noise (dBA)		63 (19-inch) / 64 (20-inch)		67	65
Wind Noise	Wind tunnel (dBA)	62.5		-	65

AERODYNAMIC PERFORMANCE

Drag Coefficient

Aero Performance	IONIQ 5	Mach-E	ID.4
Drag Coefficient (C_D)	0.29	0.29	0.28

Full Undercover: Improves Underbody Flow



HYUNDAI SMARTSENSE



ADVANCED DRIVER ASSIST FEATURES

Forward Collision Avoidance Assist



Pedestrian & Cyclist Detection



Rear Cross-Traffic Collision Avoidance Assist



Blind Spot Collision Avoidance Assist



Surround View & Blind View Monitor



Highway Driving Assist II



FORWARD COLLISION AVOIDANCE ASSIST



FCA includes a suite of high-tech preventive safety systems that consider the safety the vehicle, oncoming vehicles, pedestrians, and cyclists.

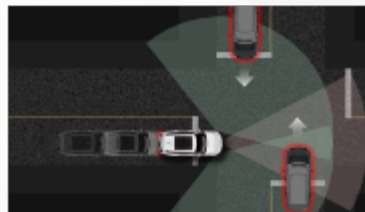
New hardware includes:

- Front view camera
- Front radar / front corner radar / rear corner radar

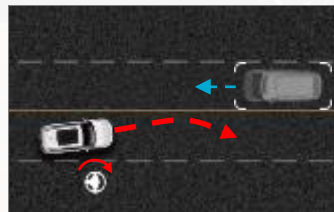
Comprehensive monitoring and warning of potential collisions and assists in avoiding collisions. Vehicle systems will apply the brakes, if warranted.



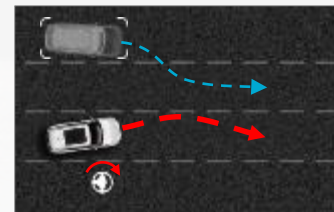
**Junction
Turning**



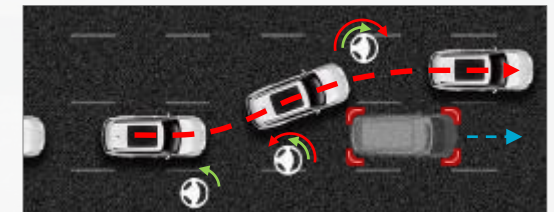
**Junction
Crossing**



Lane-Change Oncoming

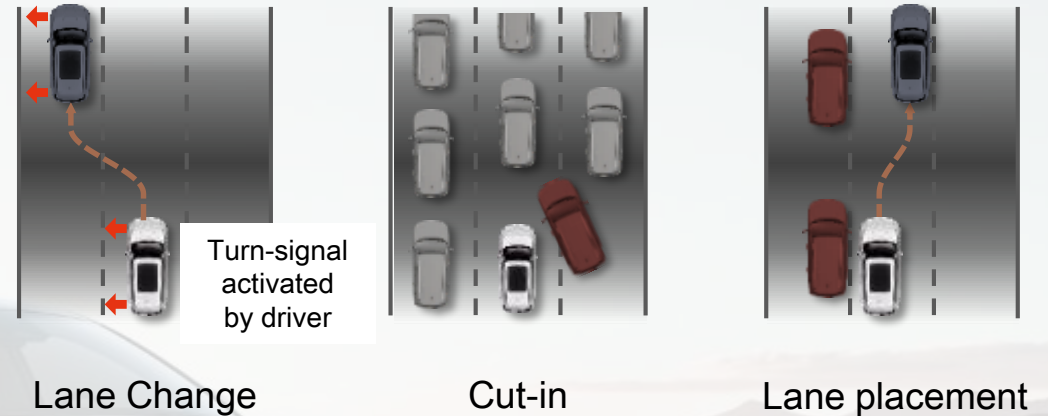


**Lane-Change
Side**



Evasive Steering Assist

HIGHWAY DRIVE ASSIST II & SCC



- Keeps a set distance from the preceding vehicle and centers vehicle in the lane

HDA II New Features and Enhancements

- Lane change assistance *(This assisted lane change function occurs when the driver operates the turn signal while holding the steering wheel and driving over 60 km/h)*
- Responds to vehicles that cut-in while driving at low speeds
- Adjusts position in current lane when a vehicle in the adjacent lane drives too close

Smart Cruise Control (SCC) with Machine Learning

- Tailors the SCC to mimic the driver's unique tendencies for acceleration and spacing with the vehicle ahead

TECHNOLOGY & PREMIUM AMENITIES

Vehicle 2 Load



Standard DC Fast Charging



Remote Parking Assist System



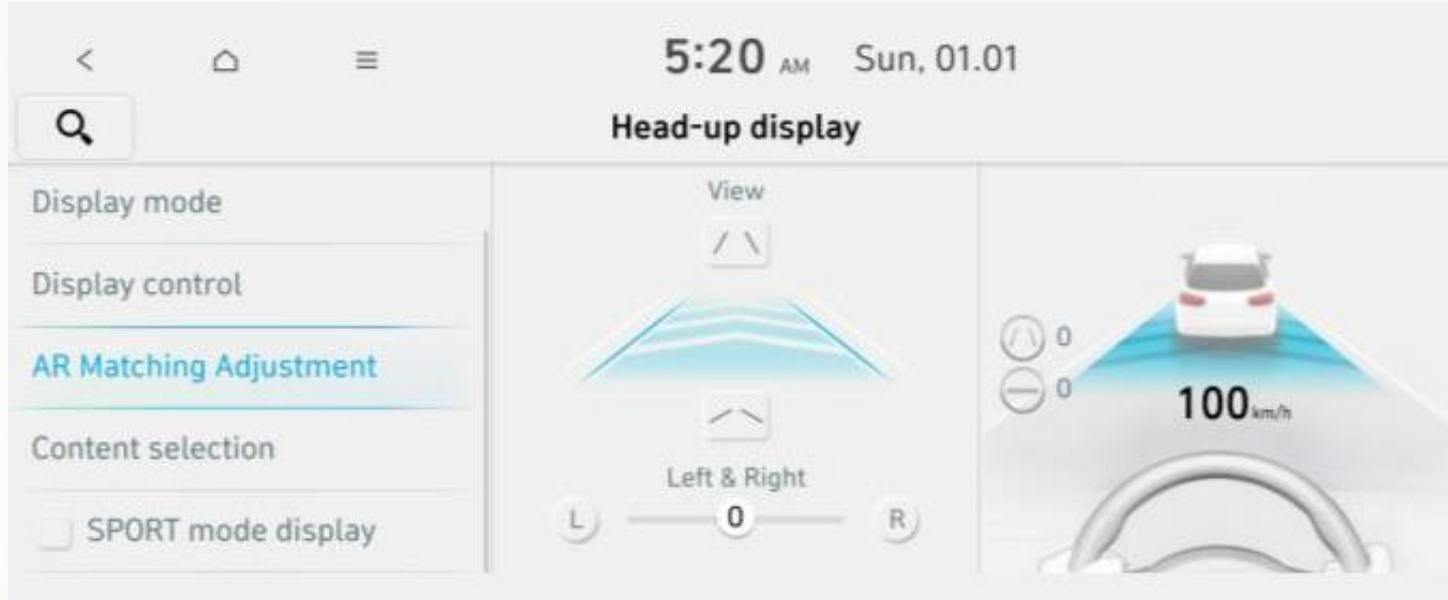
Reclining Zero Gravity Driver's Seat



Premium Head-Up Display



PREMIUM HEADS-UP DISPLAY (HUD)



Augmented Reality Included for Navigation in the HUD for “AR Mode”

- Lane Departure Warning
- Navigation – Turn by Turn
- Forward Collision Assist
- Smart Cruise Control



Navigation Turn-by-Turn



Lane Safety Information



Front Vehicle Indicator
(HDA II)

“AR Mode” HUD is projected in a Field of View (FOV) of 44-inches on detailed Heads Up Display for Turn-by-Turn

TRIM STRATEGY

SE

- 300 Miles of Range
- 800V, 350kW Ultra-Fast Charger
- Hyundai SmartSense Safety
- 19" Wheels
- Automatic Flush Door Handles
- LED Interior and Exterior Lighting
- 12.3" Cluster Display
- 12.3" Navigation Touchscreen
- Blue Link Connected Car System

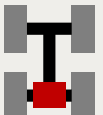
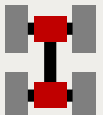
SEL

- Highway Drive Assist 2
- Leatherette Seating Surfaces
- Ambient Interior Lighting
- Power folding side mirrors
- Heated steering wheel
- Hands-free Power Liftgate

Limited

- 20" wheels
- "Vision" sunroof
- Premium HUD w/AR Functions
- Bose Premium Audio
- Surround & Blind View Monitor
- Remote Smart Parking Assist

Powertrains

RWD Standard	Dual Motor AWD Optional
 168 kW	 74 kW + 165 kW

Note: Standard Range variant—late availability

EXTERIOR COLORS



Atlas White



Cyber Grey



Phantom Black



Digital Teal



Lucid Blue



Shooting Star
(gray matte)

INTERIOR COLOR SCHEMES



Black (Monotone)



Gray (Two Tone)



Dark Green (Two Tone)

ALL-NEW 2022 IONIQ 5



Driving Range

300+ Mile All-Electric Range
(RWD)

Seamless Charging

800V Ultra-Fast Charging &
400V Charge Compatibility

Design and Space

Distinctive Styling
Spaciousness and Usability