

# EV Strategic Direction

## Hyundai Motor Company

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2019. 10

# 1. Regulatory Trends in Major Markets

Demand growth of eco-friendly vehicles led by stricter regulations on fuel efficiency / mandatory sales quota of EV / ban on ICE vehicles

## Enhanced Regulations on Fuel Efficiency

- Enhanced by 5%p each year from 2015
- Approximately by 4~5%p annually
- Violation will result in sales ban or penalty proportionate to overall vehicle sales

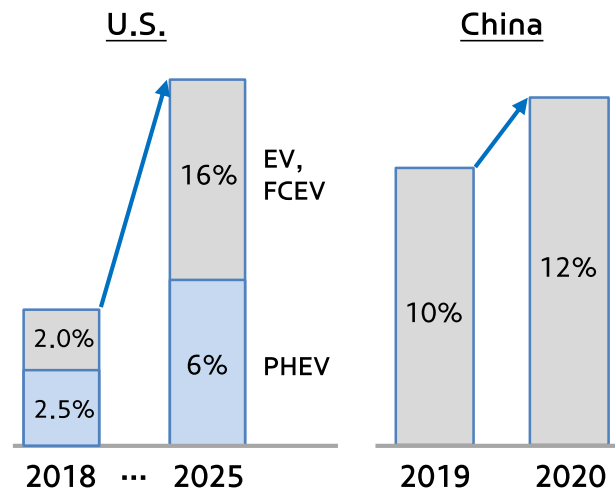
[ Fuel Efficiency Regulation ]

	2017 → 2025
<b>U.S.</b>	<b>40 → 56 mpg (+40%)</b> ※ Passenger Cars
<b>EU</b>	<b>130 → 81 g/km (+38%)</b> ※ NEDC standard
<b>China</b>	<b>6.4 → 4.0 L/100km (+38%)</b> ※ NEDC standard
<b>Korea</b>	<b>140 → 89 g/km (+36%)</b> ※ Preliminary draft by government

## Mandatory Sales Quota of EV

- U.S. then followed by China & more
  - U.S. : Initial 4.5% in 2018  
2.5%p annual hike  
10 states including California
  - China : 10% in 2019 → 12% in 2020

[ Mandatory Sales Quota ]



## Ban on ICE Vehicles





- Legislative ban on ICE vehicles planned by major countries

	Target Year	Announced
Norway	2025	2016
Netherland	2030	2016
Sweden		2019
U.K.		2017
Canada	2040	2019
France		2017

# 2. Electrification Trend of Major OEMs



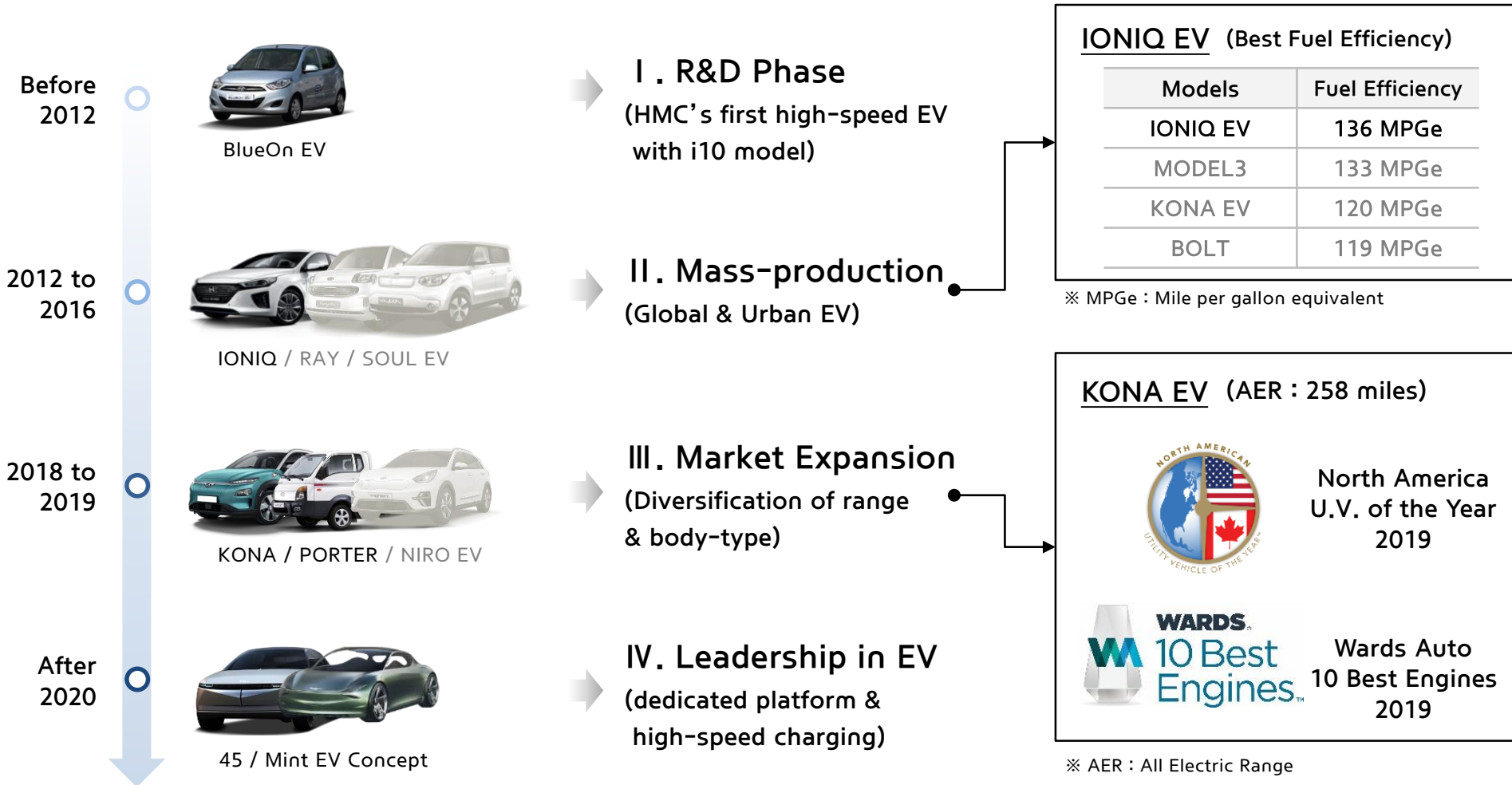
Recent trend of electrification strategies by global major OEMs generally has been in transition to **line-up expansion skewed around BEVs.**

	Electrification Lineup	Sales Plan	Expected new models
 [ Volkswagen ]	Portfolio Lineup oriented around BEV	By 2028 cumulative <b>22</b> million units	By 2028 <b>70 new models</b>
 [ Renault-Nissan-Mitsubishi ]		By 2025 <b>2</b> million units / annum	By 2022 <b>12 new models (BEV)</b>
 [ GM ]		By 2030 cumulative <b>7</b> million units	By 2023 <b>20 new models (BEV)</b>
 [ Toyota ]		Expanding BEV (EV dedicated platform with e-TNGA) ↑ HEV-centric	By 2025 <b>1</b> million units / annum (5 years earlier than original plan) ↑ By 2030 5.5 million units

# 3. EV Development History of HMC



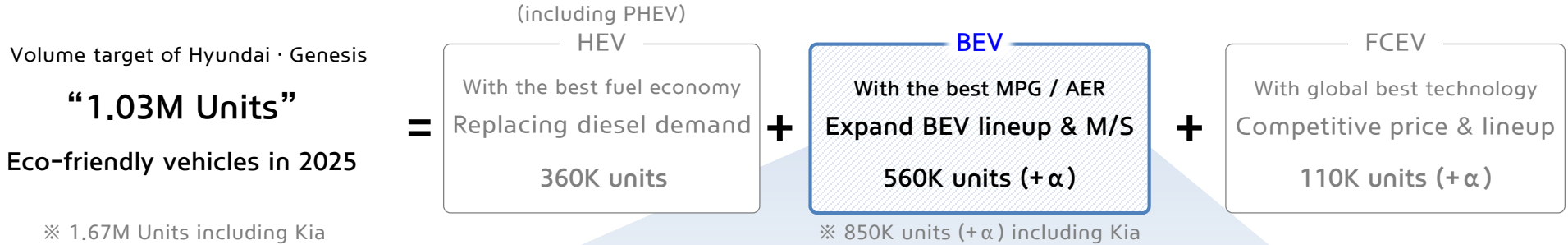
Beginning with first production of EV in 2012, HMC has won numerous awards from first production of EV in 2012, based on superb product competitiveness.



# 4. Winning Strategy in Electrification



**BEV strategic direction**, in pair with core technology roadmap was established and will be executed accordingly **to enhance HMC's EV competitiveness.**



To secure the leading position in EV in 2025

**“ Strengthen tech-competitiveness + Diversify product lineup +  
 Expand business in relations with ecosystem ”**

## I . Strengthening Technological Edge

Secure core technology and accelerate mass-production to fortify foundation for the leading position in EV

## II. Diversifying Product Lineup

Diversify product portfolio for business-purpose

## III. Expanding Ecosystem

Vitalize EV ecosystem and discover new businesses with product / service linkage

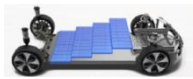
# 4. Winning Strategy in Electrification (detail)

BEV strategic direction, in pair with core technology roadmap was established and will be executed accordingly to enhance HMC's EV competitiveness.

## I. Strengthening Technological Edge

Fortifying competitiveness through EV core technology (dedicated platform and super-fast charging)

### [ EV-dedicated Platform ]



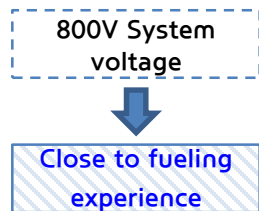
< E-GMP<sup>1)</sup> >

1. Merchantability
  - Interior / AER
2. Cost Efficiency
  - economies of scales with commonization

### [ Ultra Fast Charging ]



Ultra Fast Charging  
20 min. (up to 80%)



## II. Diversifying Product Lineup

More segmented lineup and model development suitable for mobility service

### [ Segment EV ]



### [ Mobility/B2B ]



< MPV BEV >



< Mobility BEV >

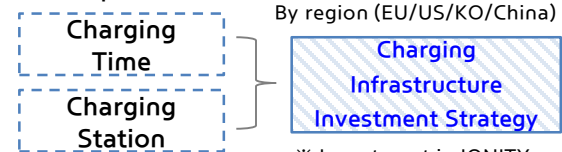
New body-type for MPV or Mobility BEV

## III. Expanding Ecosystem

Strategic plan for EV ecosystem expansion to improve customer accessibility

### [ Charging Infrastructure ]

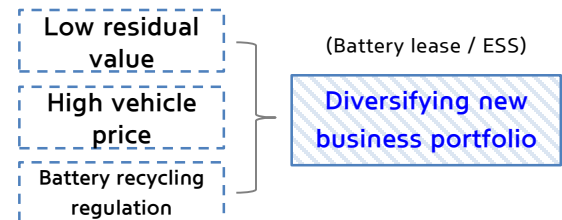
Competition



※ Investment in IONITY, high-speed charging infrastructure construction (Sep. 2019)

### [ New Business ]

Limitation



1) E-GMP : Electric Global Modular Platform

