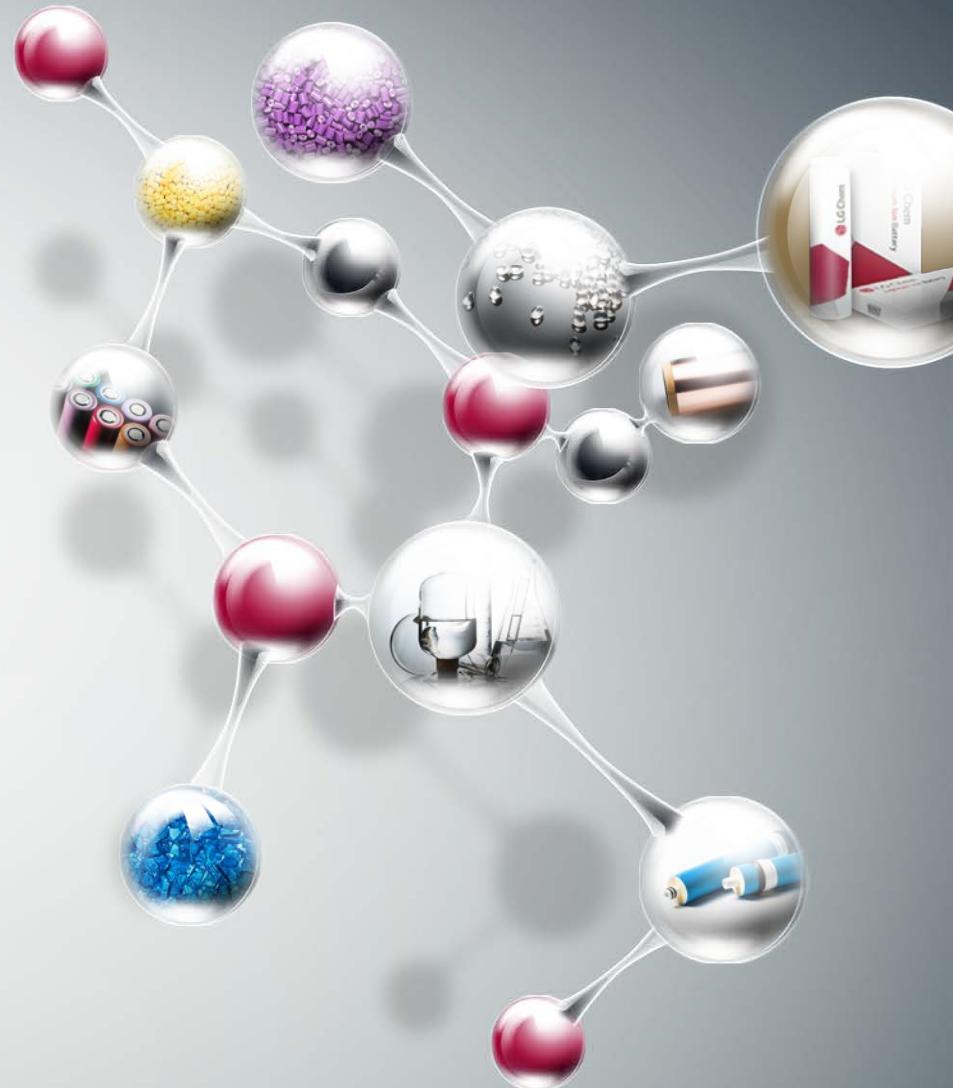


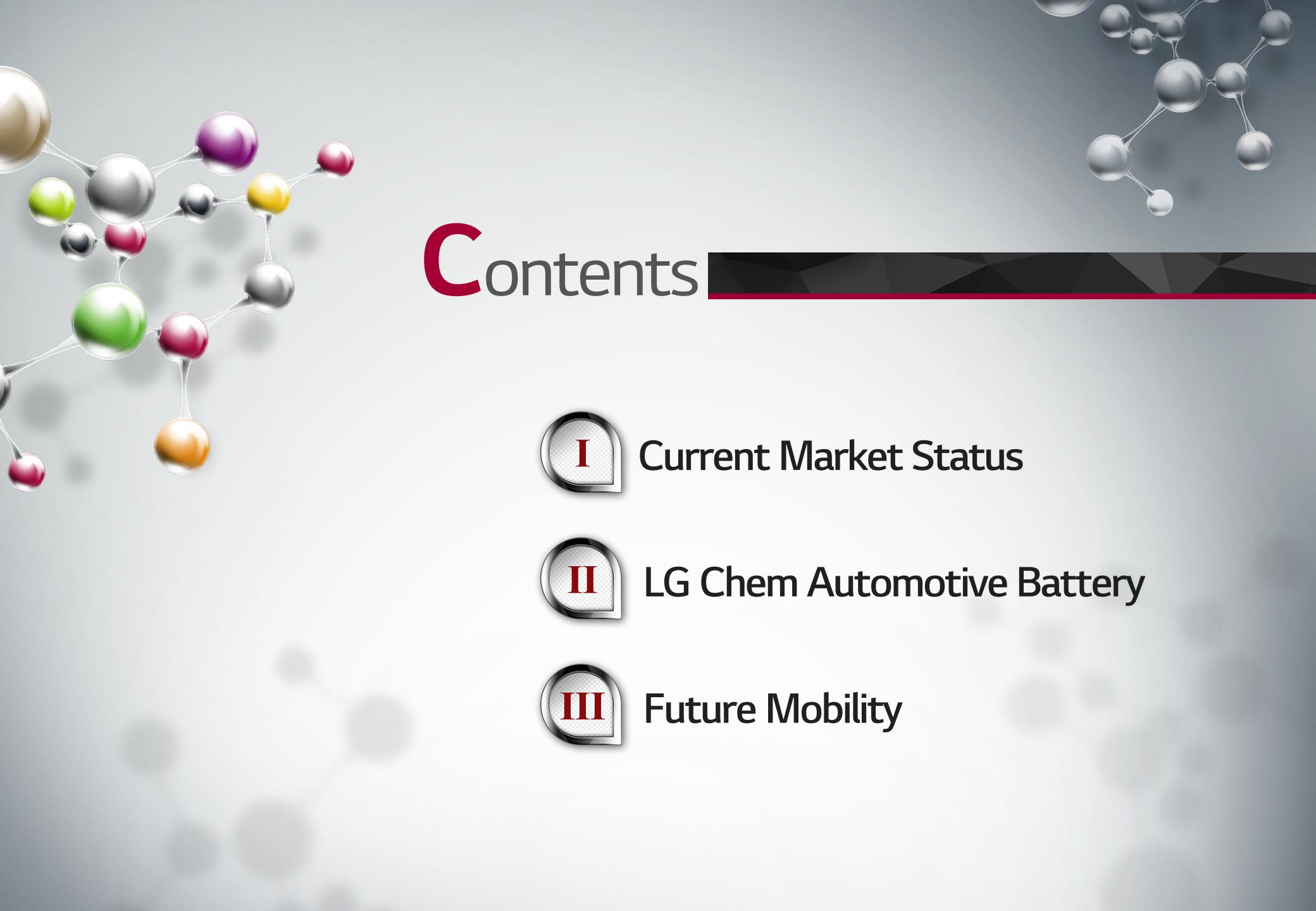
# Future Mobility Charged with LG Chem

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LG Chem Michigan Inc., Tech Center  
Energy Solution Company

July 22, 2019





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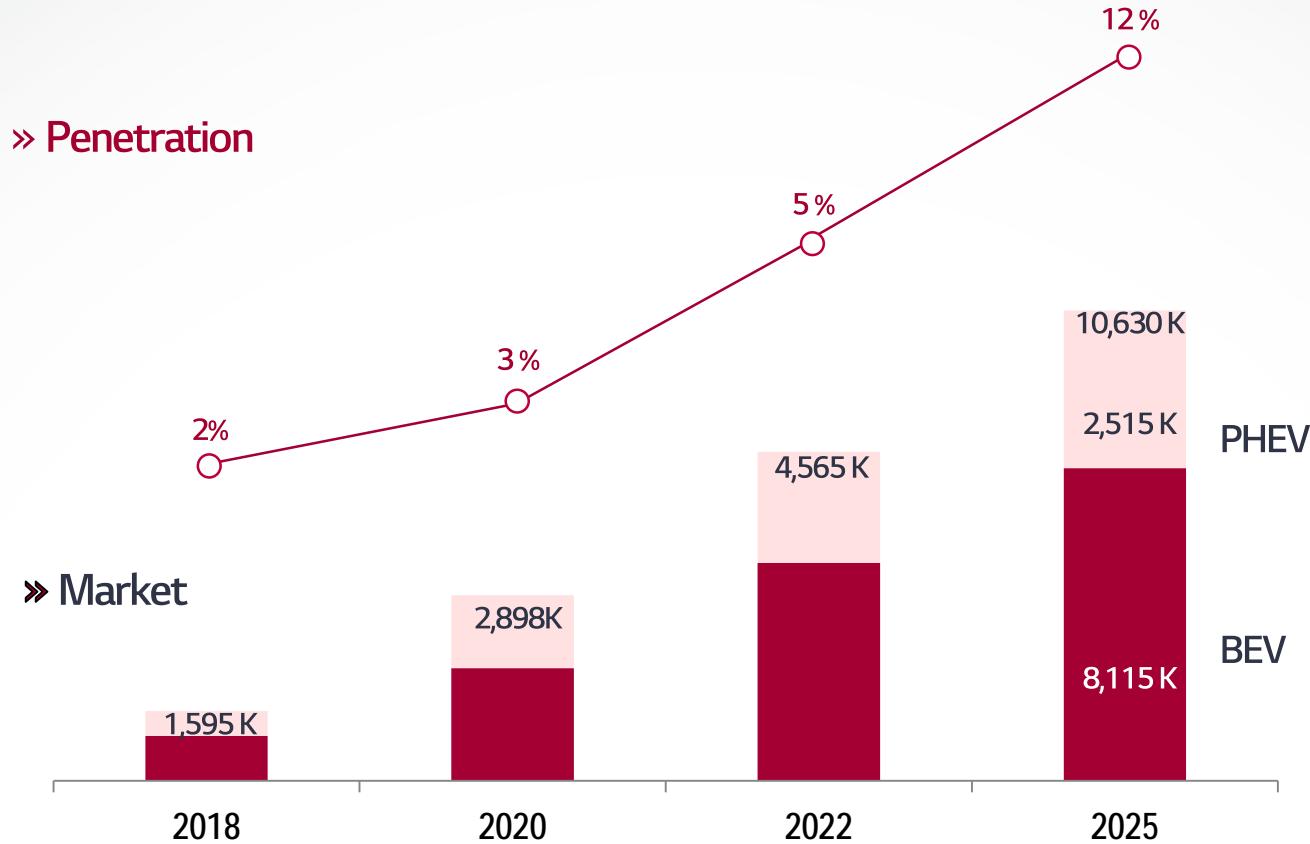
# Chapter I

## Current Market Status



# Global xEV Market Forecast

xEV market penetration to reach 12% by 2025



**2050: Increased Volume a function of Technology Leadership (Company and/or Country)**

# EV Platform trend

With introduction of **Dedicated EV Platform**, BEV battery has transformed in accordance....

2010

2016

2020

Phase 1

Phase 2

Phase 3

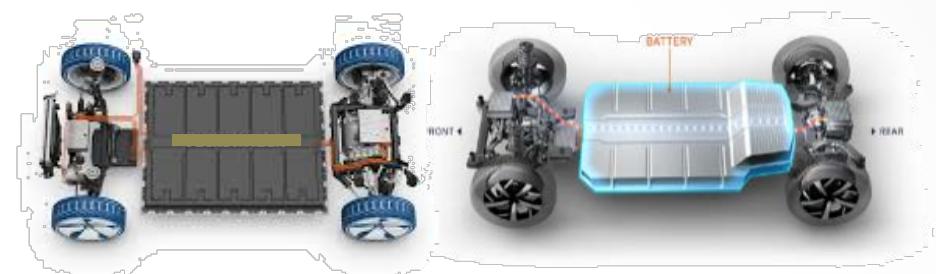
Modified Platform from ICE

BEV Dedicated Platform

- Complicated pack shape
- Limited volume for energy
  - Trunk / Fuel tank / Under seat

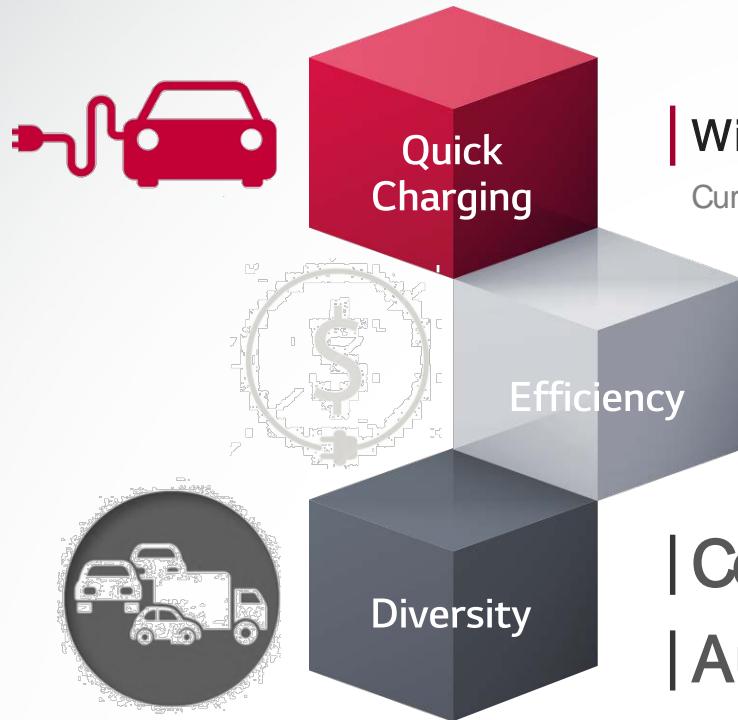
- Maximized volume within limited platform
- Under body with platform rebuilt

- **Simple pack** with high energy density
- **Low profile** pack for sedan
- **High profile** pack for SUV / CUV



# Paradigm Shift in EV Proliferation

Quick Charging, Energy Efficiency and Model Diversity for the next decades to come



| With **20 min.** charging, additional **400 km** Range secured

Current quick charging about 40 min.

| **Light weight** in Pack level, **20% ↓**

Current battery pack weight in vehicle : 20-30%

| **Commercial Vehicles** such as Van, Taxi with **Longer Cycle**

| **Autonomous Driving** with xEV

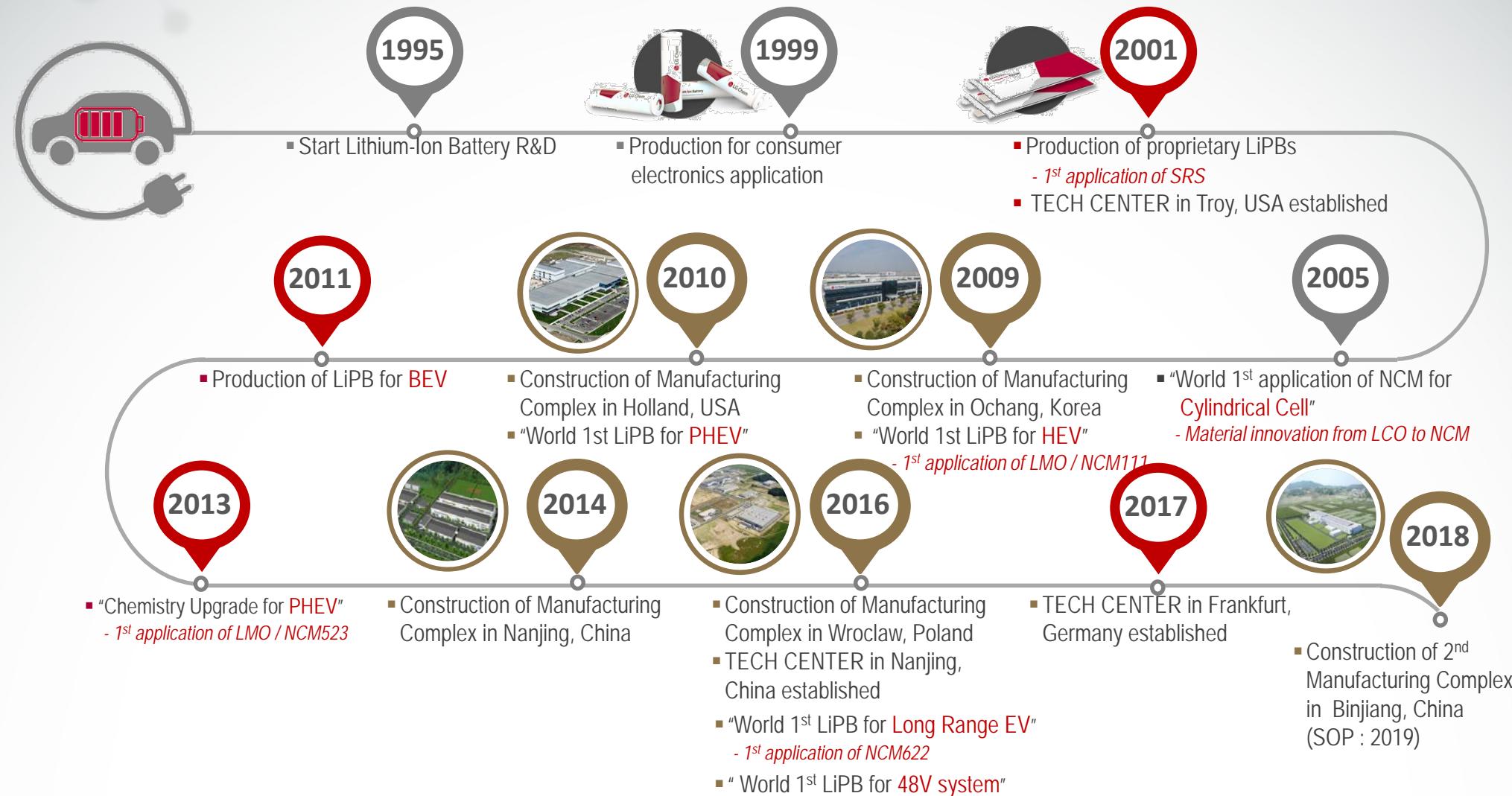
# Chapter II

## LG Chem Automotive Battery



# Innovative Development and Capital Investment Required

With innovative product from Low to High Voltage more than 10 years of mass production has occurred...



# Chapter III

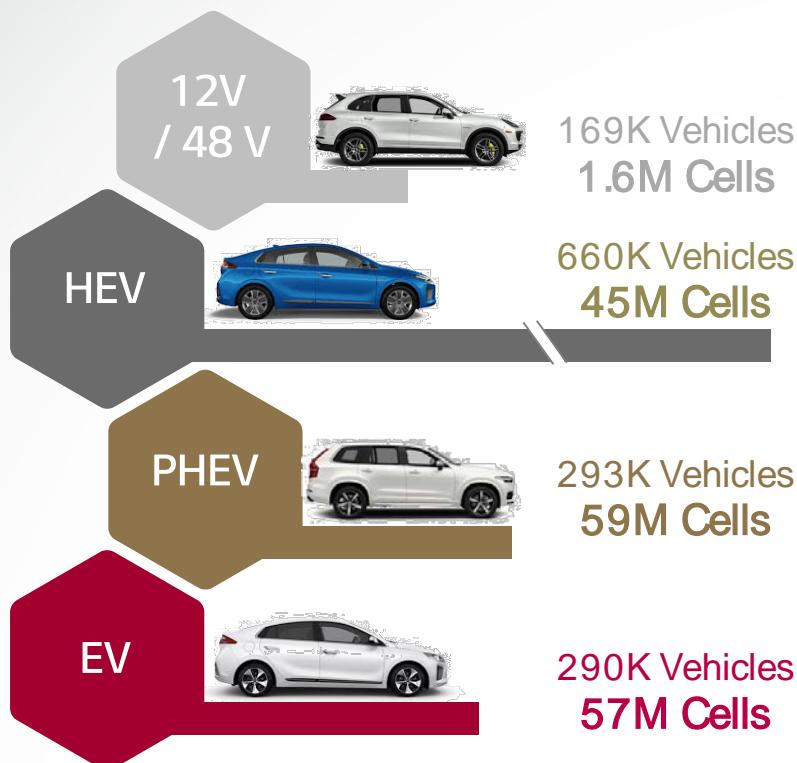
## Future Mobility



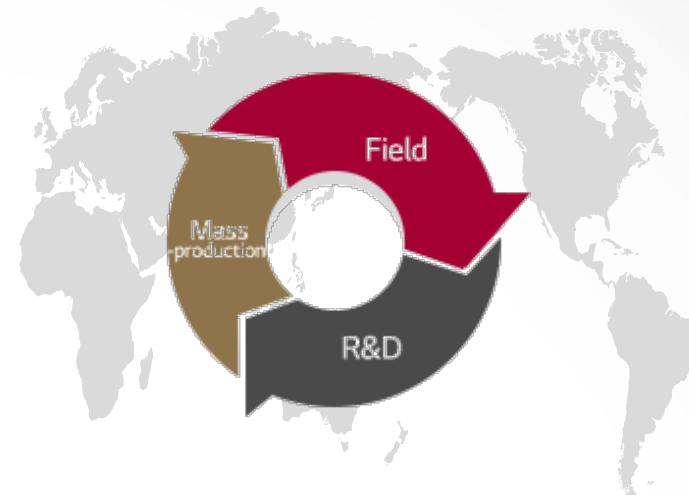
# Proven Quality

**1,412k** Vehicles in the Field with no Performance or Safety Issue since 2009  
(163M Cells<sup>1)</sup>)

## Automotive Experience



## Production Experience

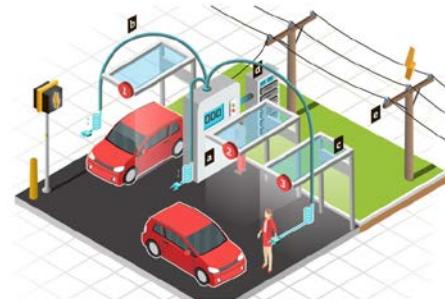


- Value Chain Commitment
- Leveraging Applications
  - Consumer
  - Automotive
  - Stationary batteries

1) 2009-2017 Accumulated sales

# Summary

- The future of battery technology development and application will be a function of technologist and/or countries that strive for leadership.
- Generational Maturity of Requirements and Learning Phases allow optimized designs, costs, and functionality to achieve customer satisfaction.
- Increase volumes require large capital investment and resources by Vehicle Companies, Battery Companies, and Value Chain Suppliers.
- Commitment to production volume is extremely important to establish stabilization in the supply chain and investment base.



A large, semi-transparent molecular structure is positioned at the top of the image, consisting of various colored spheres (silver, green, red, yellow, orange) connected by thin lines, representing a complex chemical network.

# Thank You



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