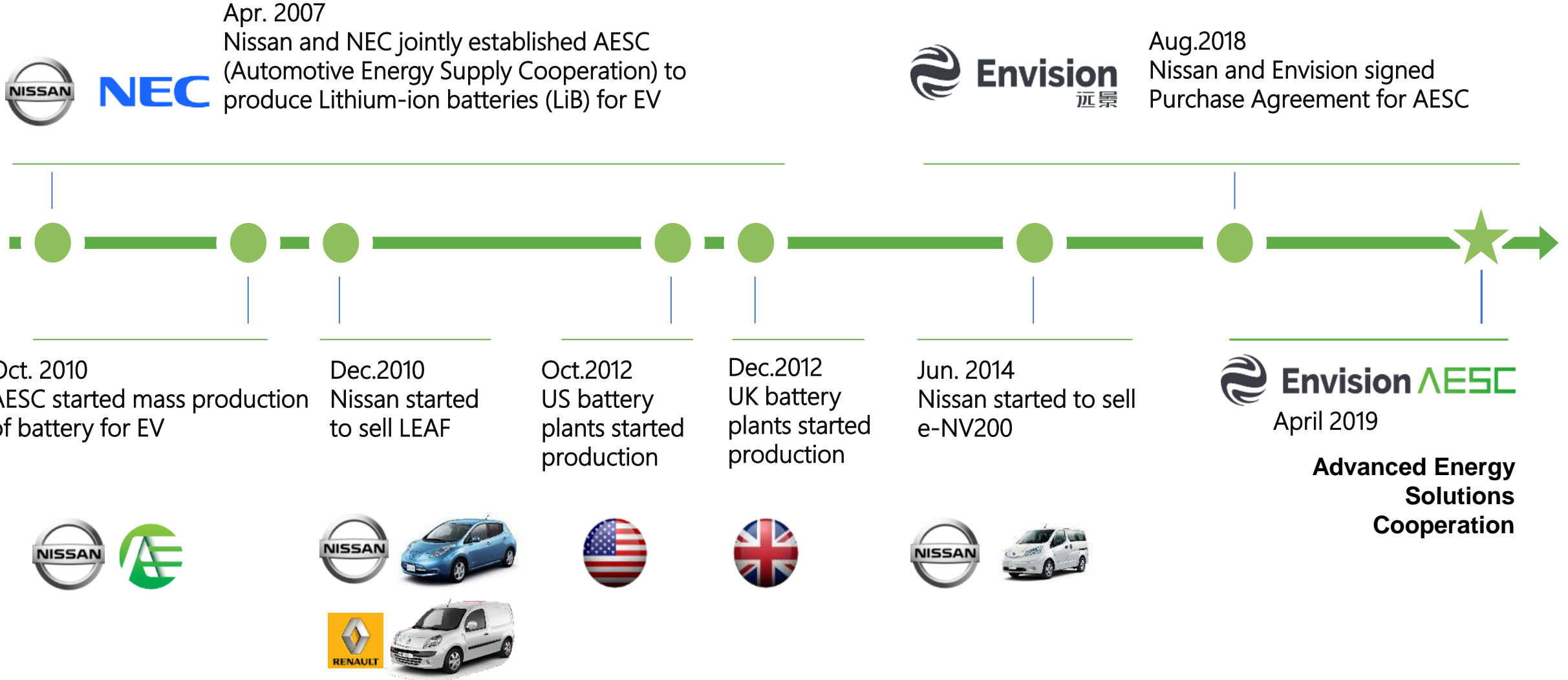


Envision AESC battery business strategy

2nd June 2022



Envision AESC's History



Management goal

Global leading AIoT (AI+IoT) battery company

Global growth

11 Yrs

EV Battery manufacturing experience

“0” Critical incidents

Competitive Products

Global Leading

Over 100mil. cells installed in the world



Global EV: 650,000 (Mar 2022)

AESC Battery - ‘Zero Critical Incident’ in 11 yrs History of Competitive Battery production in the World

Envision AESC Profile



US Plant

- Tennessee, US
- Capacity: 3.0 GWh/yr

UK Plant

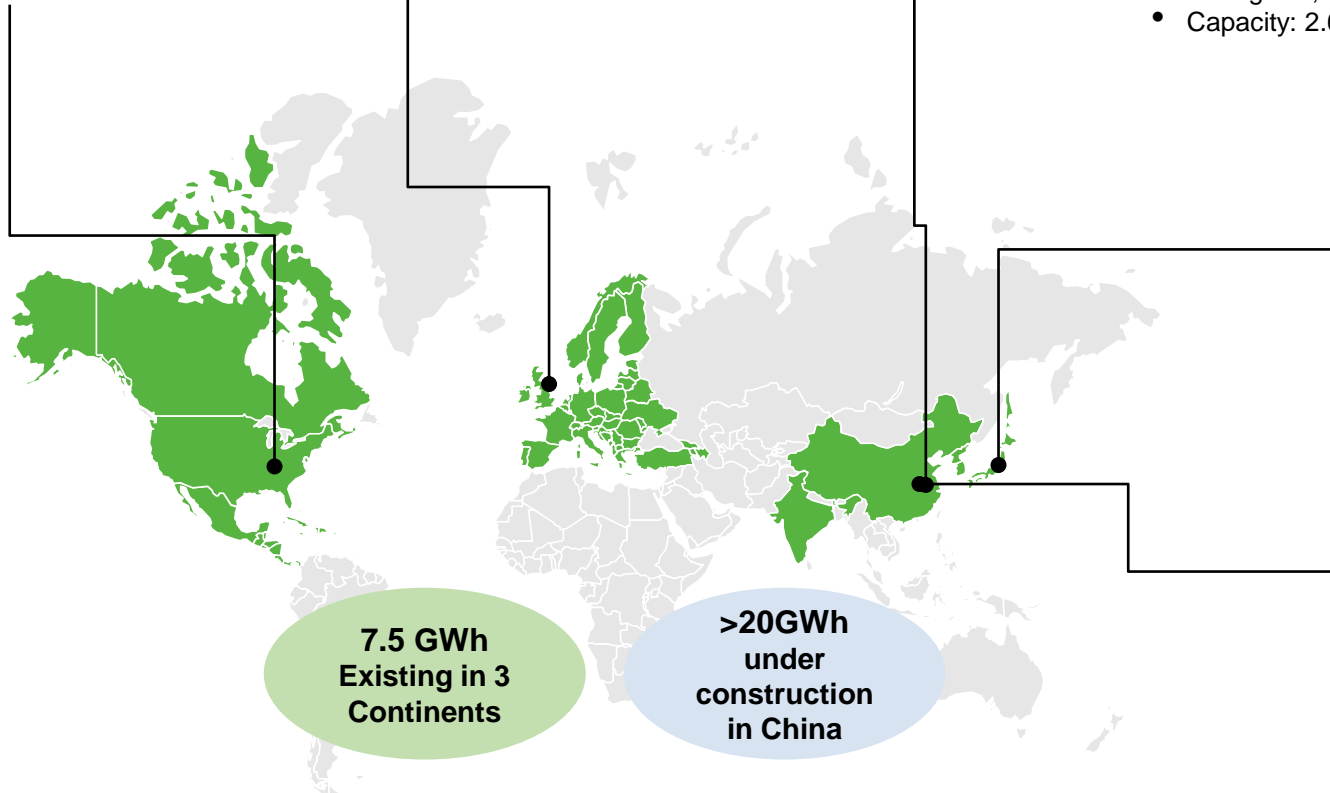
- Sunderland, UK
- Capacity: 1.9 GWh/yr

China R&D Centre

- Shanghai, China

Japan Global HQ, R&D Centre, and Plant

- Kanagawa, Japan
- Capacity: 2.6 GWh/yr



Under consideration of new plants in Japan, Europe, US

China Plant & Engineering Centre

- Wuxi, China
- Capacity >20 GWh in phases
- #1A 3GWh (2021 Spring)

Global number of Employee 4,200

1. Secure world-leading technology

- Product development
- Recycling technology development

2. Ensure production capability to meet the growing global EV market

- Global capacity enhancement
- Carbon neutral realization
- New plant plan

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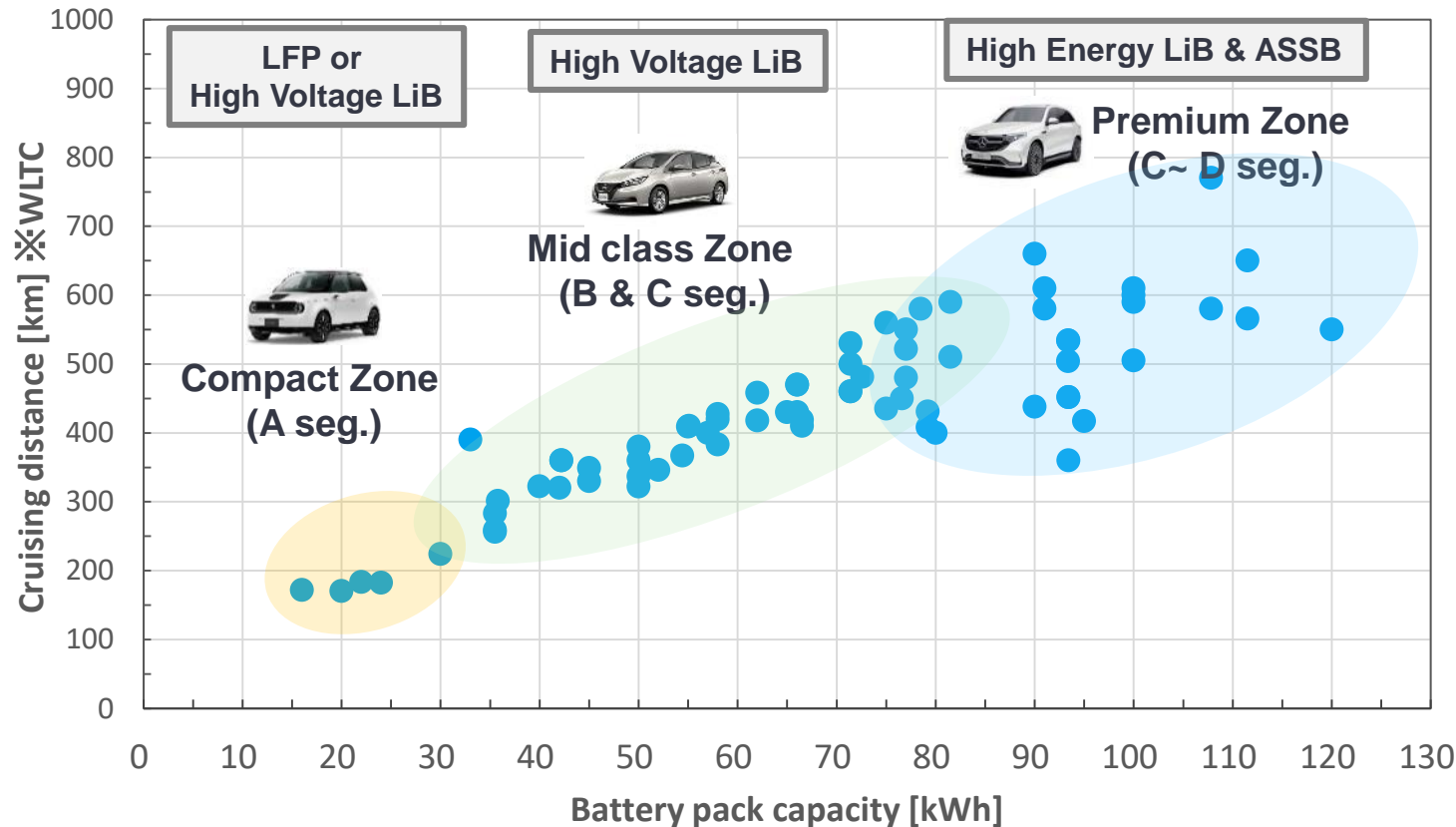
Customer's Direction for EV platforms

OEMs need expanding EV line-up to cover all segments

Both of NMC and LFP lineup are necessary to cover all segments

1. High voltage solution will cover widely for volume zone
2. High energy for Premium, 800 V system to be requested over 76 kWh pack
3. LFP or High voltage for Compact zones

Vehicle Segments vs. LiB Energy*



Insights of Voice of Customers

1) Charge time < 20 min.

800 V system will be necessary for High energy pack

Critical boundary condition, > 76 kWh

(150 kW charger / 400 A max)

2) LiB Life, 240k km & 8 years

20 kWh → 2,400 cycles

75 kWh → 500 cycles

Small pack needs more durability than Large pack

3) What application for ASSB?

Suitable application is Premium Zone

Weight reduction -100 kg with 120 kWh (vs. G7)

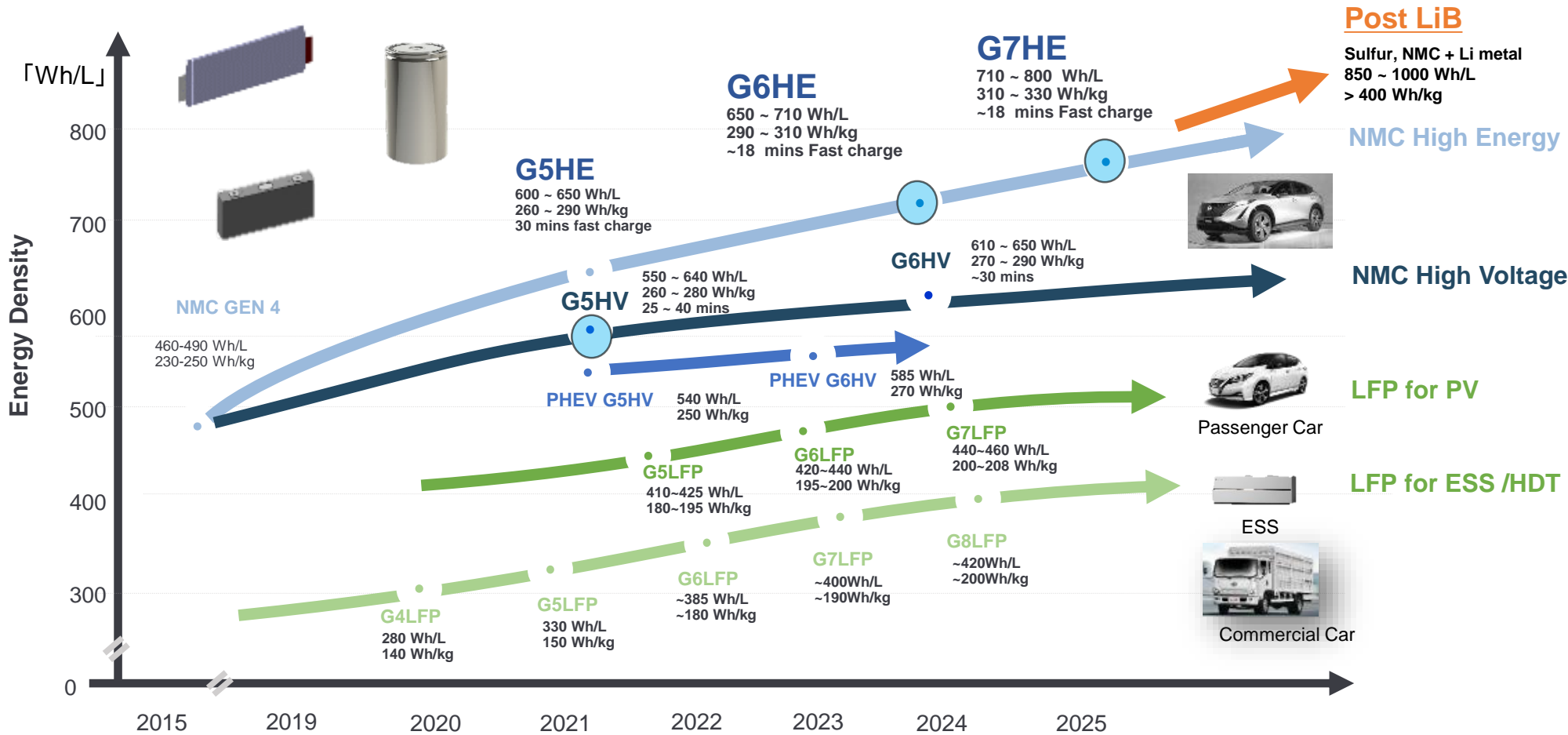
4) Target Pack Cost < 100 \$/kWh

Cell BOM 40 ~ 47 \$/kWh

Cost reduction measure will be more critical

Cell Roadmap

Multiple technology line-up will support all electrifications demands flexibly



Post LiB

Sulfur, NMC + Li metal
850 ~ 1000 Wh/L
> 400 Wh/kg

Chemistry Line-up

1. NMC
2. LFP

Cell Foam Factor

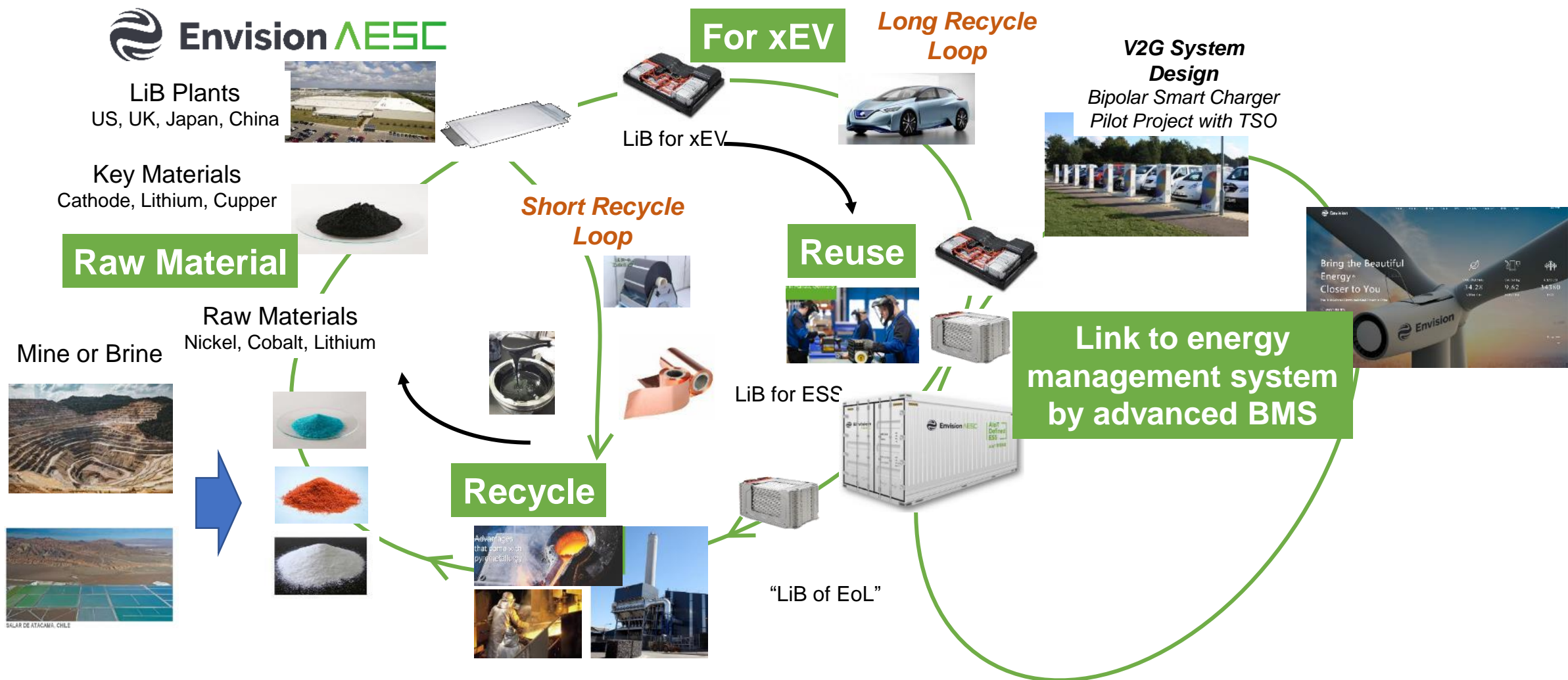
1. Pouch
2. Prismatic
3. Cylindrical

Product Line-up

- G4 Mass product
- G5 New product
- G6 Upcoming on 2025

Contribution to circular economy

Promote battery life cycle management and contribute to circular economy.



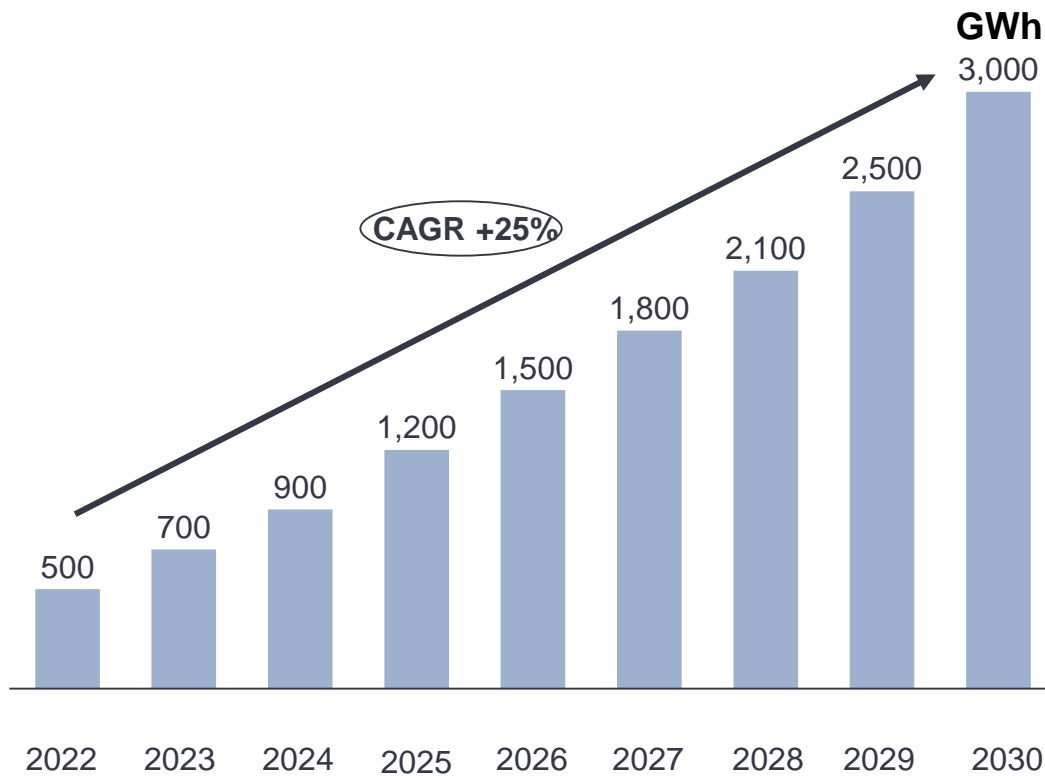
1. Secure world-leading technology

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Global EV Battery Market Forecast



Source: SNE Research, Bloomberg, IHS Markit

Mobility Trend

- OEMs in Europe, China and North America are moving to BEV very aggressively by 2030

LiB Volume Demand

- EV market will reach 3 TWh on 2030, and securing raw materials has become an important issue

Product Portfolio of EV & ESS

- Expanding EV coverage from A to D segments
- LiB chemistry will be designed segment by segment
- For ESS application, LFP is the best solution

New Technical Trend on LiB System

- Strong demand for high energy LiB over 700 Wh/L
- 800 V system for Quick Charging

LiB Recycling Solutions

- Recycling regulation becomes more strict at EU
- Low carbon emission technology becomes also key on biz. plan

Global base expansion plan

US Plant

- Tennessee, US
- Capacity: 3.0 GWh/yr

US **NEW** Plant

- Capacity: 30 GWh/yr

UK Plant

- Sunderland, UK
- Capacity: 1.9 GWh/yr

UK **NEW** Plant

- Sunderland, UK
- Capacity: 15-20 GWh/yr

China Jiangyin Plant & Engineering Centre

- Wuxi, China
- Capacity: 20-40 GWh/yr

China R&D Centre

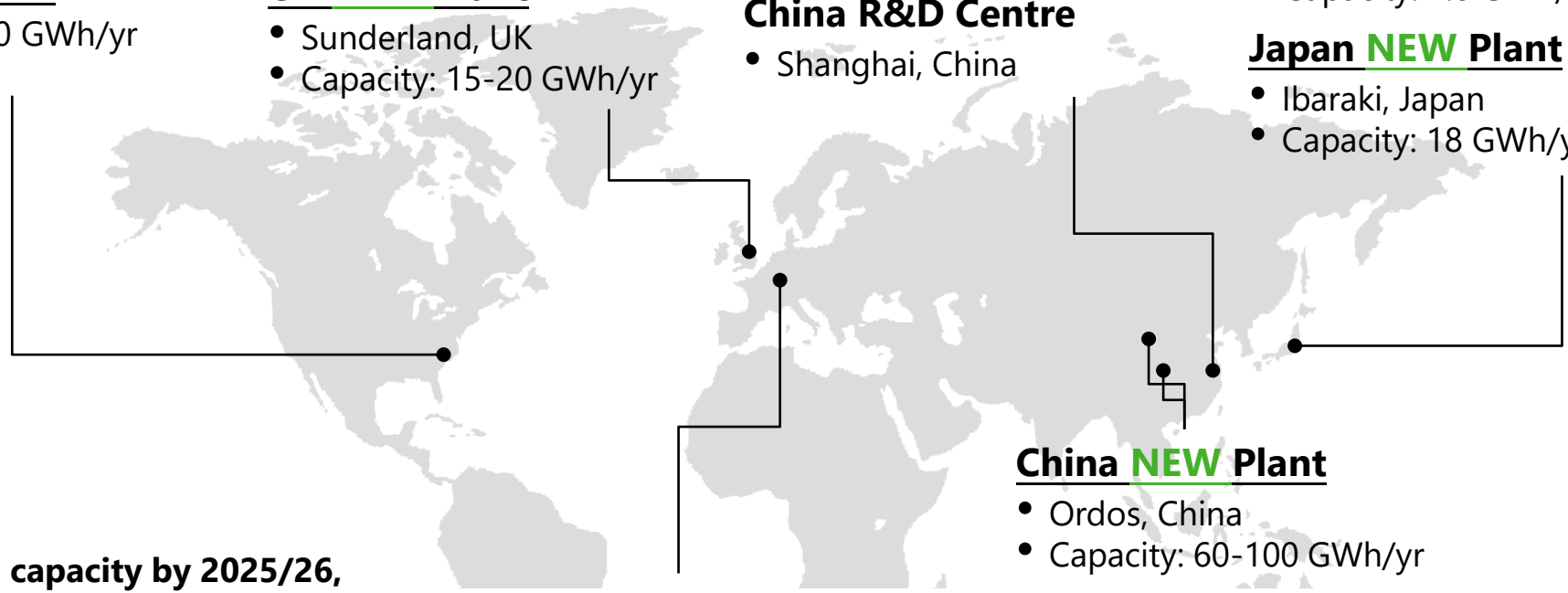
- Shanghai, China

Japan Global HQ, R&D Centre, & Global Engineering Centre and Zama Plant

- Kanagawa, Japan
- Capacity: 2.6 GWh/yr

Japan **NEW** Plant

- Ibaraki, Japan
- Capacity: 18 GWh/yr



300+ GWh capacity by 2025/26,
powered by net-zero energy

France **NEW** Plant

- Douai, France
- Capacity: 30 GWh/yr

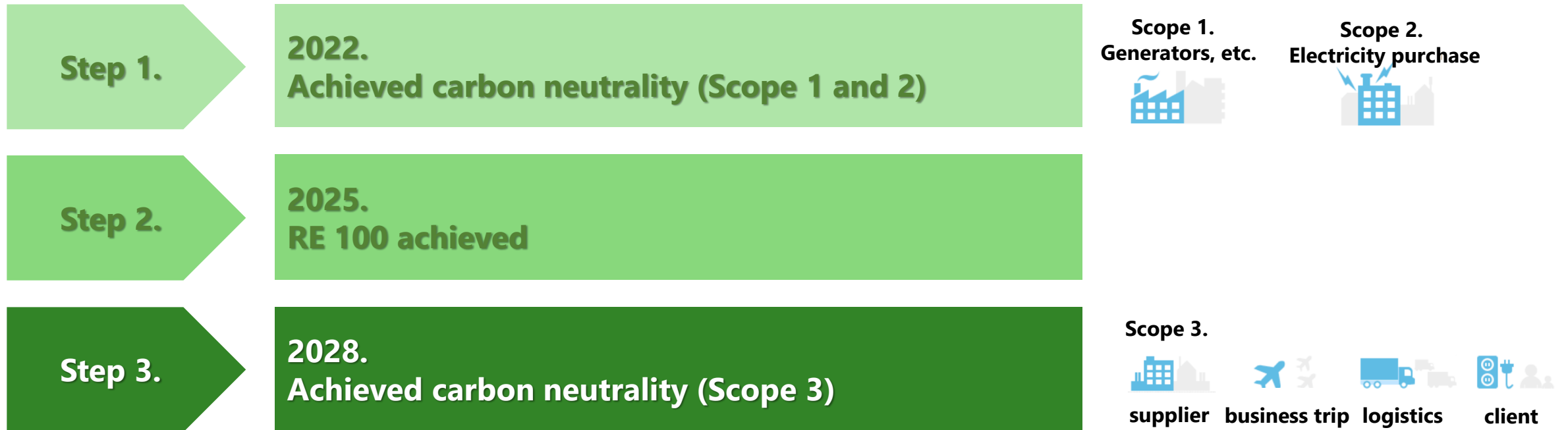
China **NEW** Plant

- Ordos, China
- Capacity: 60-100 GWh/yr

China **NEW** Plant

- Shiyan, China
- Capacity: 40-60 GWh/yr

Envision Group's carbon neutral realisation targets.



Definition of carbon neutral scope.

Scope 1: Direct emissions from owned or controlled sources.

Scope 2: Indirect emissions from the generation of purchased electricity, steam, heating and cooling consumed by the reporting entity.

Scope 3: All other indirect emissions occurring in the company's value chain.

RE100.

RE100 stands for 'Renewable Energy 100%' and refers to the energy consumed in business activities.

It refers to an international initiative that aims to procure 100% of its energy from renewable sources.

Announcement of construction of new plant in France (30 June 2021)



Announcements

- **Construction site : Douai (Northern France).**
- **Start of mass production : 2025**
- **Production capacity : started operation at 9 GWh**
Expanded to 24 GWh by 2030
Expansion availability up to 40 GWh
- **Total investment : approx. 2 billion EUR**
- **Jobs created : approx. 2,500 jobs**
- **Energy : start operation as Carbon Neutral Plant**
Solar PV on roofs and on the ground
(around 30% of total electricity)



At the construction launch event at the Renault French plant
Right: Emmanuel Macron, French President
Left: Lei Zhang, CEO, Envision Group



Announcement of construction of new plant in UK (1 July 2021)



Announcements

- **Location of construction: Sunderland, Tyne and Wear.**
- **Start of mass production: 2025**
- **Production capacity : start operation at 9 GWh (100,000 EVs)
Expanded to 25 GWh by 2030
(Up to 35 GWh possibility)**
- **Total investment: approx. £450 million**
- **Jobs created: approx. 3,200 (up to 4,500 when expanded)**
- **Energy: building community-wide microgrids and start operation as Carbon Neutral Plant**



At the construction launch event at the Nissan Sunderland plant Center: Boris Johnson, British Prime Minister.
Right: Lei Zhang, CEO, Envision Group
Left: Shoichi Matsumoto, CEO, Envision AESC Group

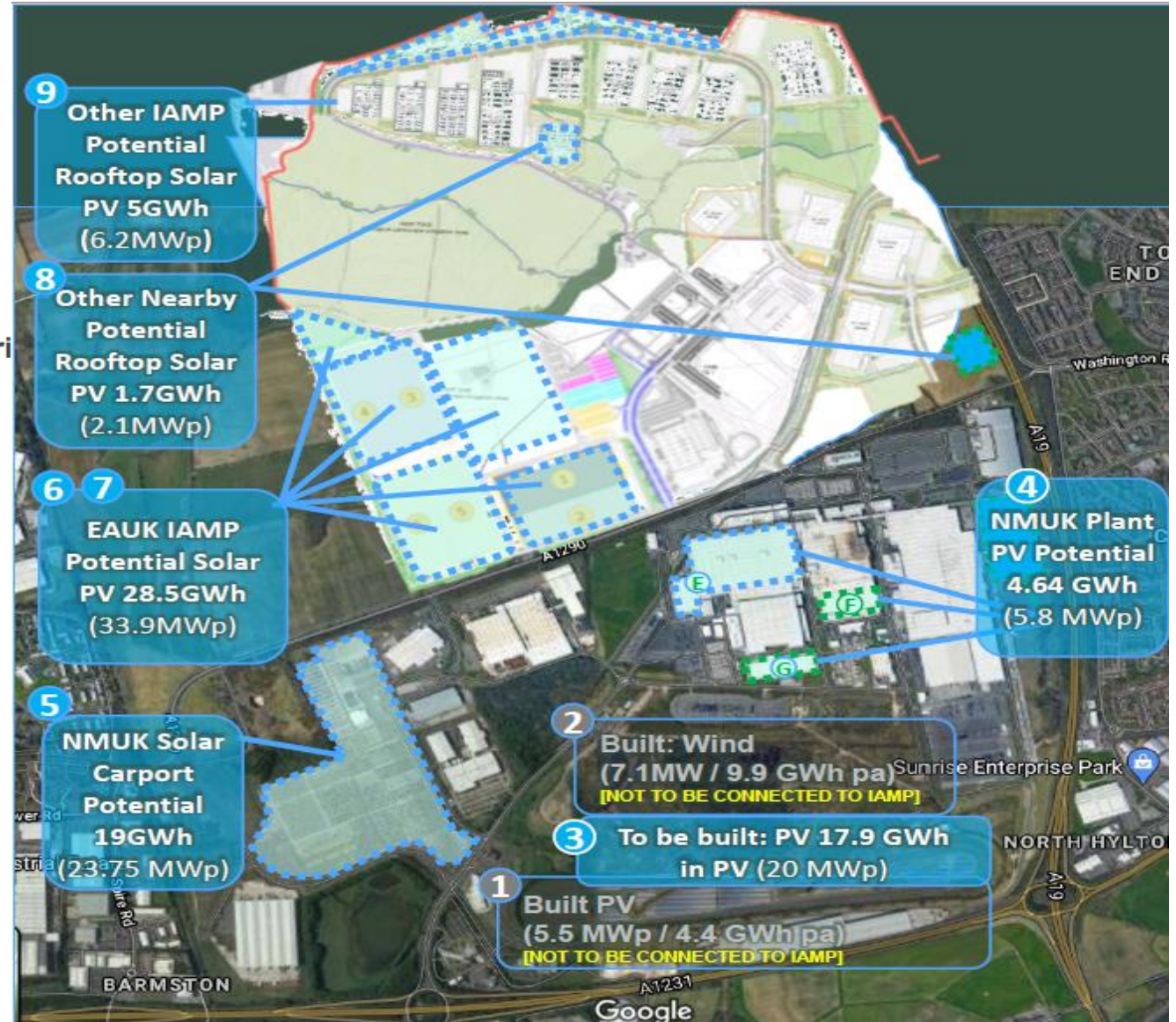
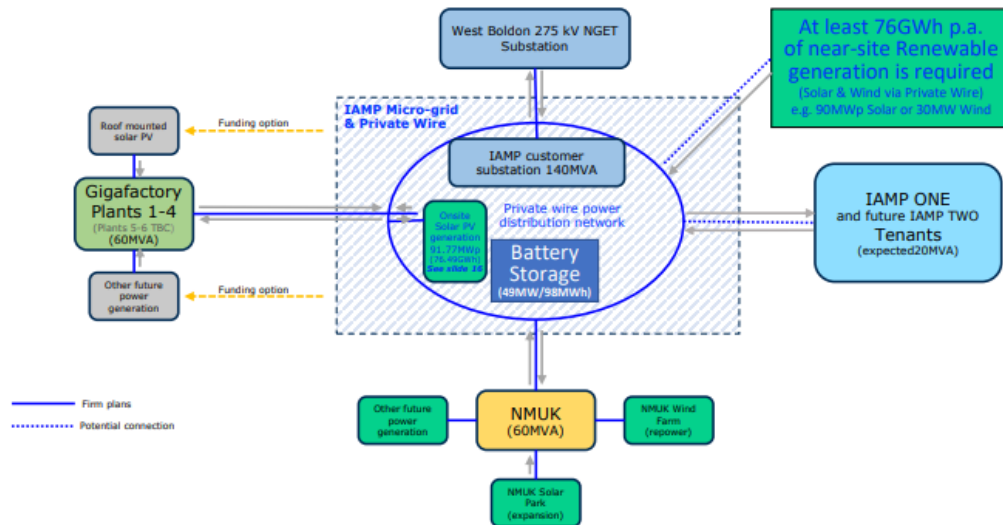
New UK plant initiatives

- Operates 100% carbon neutral.
- Community-wide microgrid construction.
- Photovoltaic installations around the site

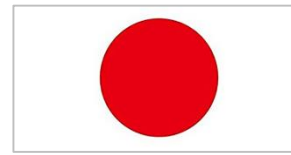


From 2024, Suggested Operating Models (OM) and Grid

Suggested NG connections and IAMP micro-grid structure (2024 onwards)



Announcement of construction of new plant in Ibaraki (4 Aug 2021)



Announcements

- **Construction site : Ibaraki Town, Higashi-Ibaraki County, Ibaraki Prefecture, Japan.**
- **Start of mass production : 2024**
- **Production capacity : started operation at 6 GWh
Expanded to 18 GWh by 2030**
- **Total investment : approx. 50 billion yen
(more than 100 billion yen when expanded)**
- **Jobs created : approx. 400
(more than 1,000 when expanded)**
- **Energy : start operation as Carbon Neutral Plant**



At the construction announcement event at the Ibaraki Prefectural Government.
Centre: Kazuhiko Oigawa, Governor of Ibaraki Prefecture
Right: Ashwani Gupta, COO, Nissan Motor Co.
Left: Shoichi Matsumoto, CEO, Envision AESC Group

Announcement of construction of new plant in US (13 April 2022)



Announcements

- **Location of construction : Bowling Green, Kentucky**
- **Start of mass production : 2025**
- **Production capacity : started operation at 30 GWh
Expandable in the future up to 40 GWh**
- **Total investment : approx. USD 2 billion**
- **Jobs created : approx. 2,000**
- **Energy : start operation as Carbon Neutral Plant**



At the construction announcement event at the Kentucky State Capitol.
Above: speech by Kentucky Governor Andy Beshear.
Below: press conference with top government and municipal officials



Envision AESC expect for international cooperation in following categories.

- **Technology**

 - Raw material recycling technology development.

- **Supply chain management**

 - Battery materials supply chain scheme establishment in Europe.

 - Cathode / Anode material, Aluminum, Copper foil, Separator, Laminate film etc.



To Solve the Challenges for a Sustainable Future.



Leading the De-Carbonization Revolution through AIoT Defined Battery Solutions.

