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APAC ENERGY & INFRASTRUCTURE CONFERENCE 2024
UNVEILING THE TRENDS: THE ENERGY TRANSITION IN ASIA PACIFIC
SINGAPORE | THURSDAY, 25 APRIL 2024

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APAC ENERGY & INFRASTRUCTURE CONFERENCE 2024
CRITICAL MINERALS, POWER BATTERIES AND ELECTRIC VEHICLES
SINGAPORE | THURSDAY, 25 APRIL 2024

CRITICAL MINERALS, POWER BATTERIES AND ELECTRIC VEHICLES

Scan the QR code to submit questions



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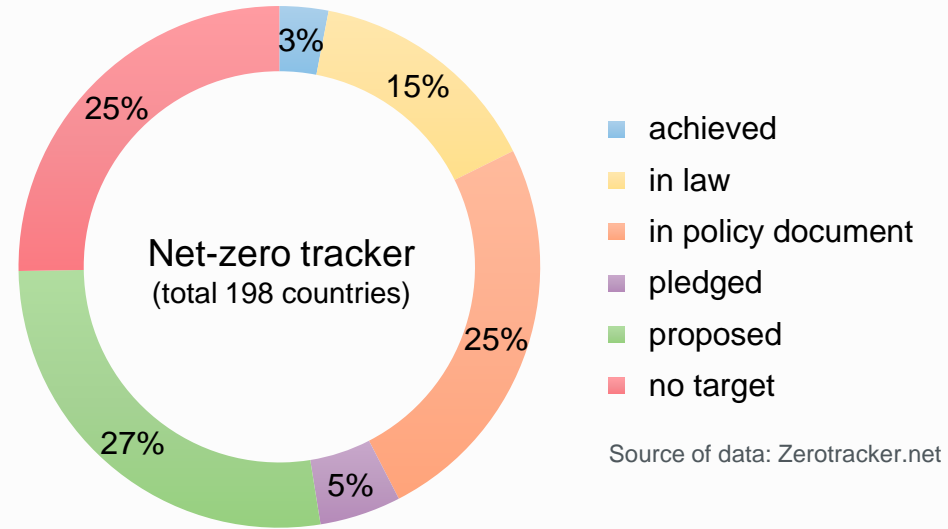
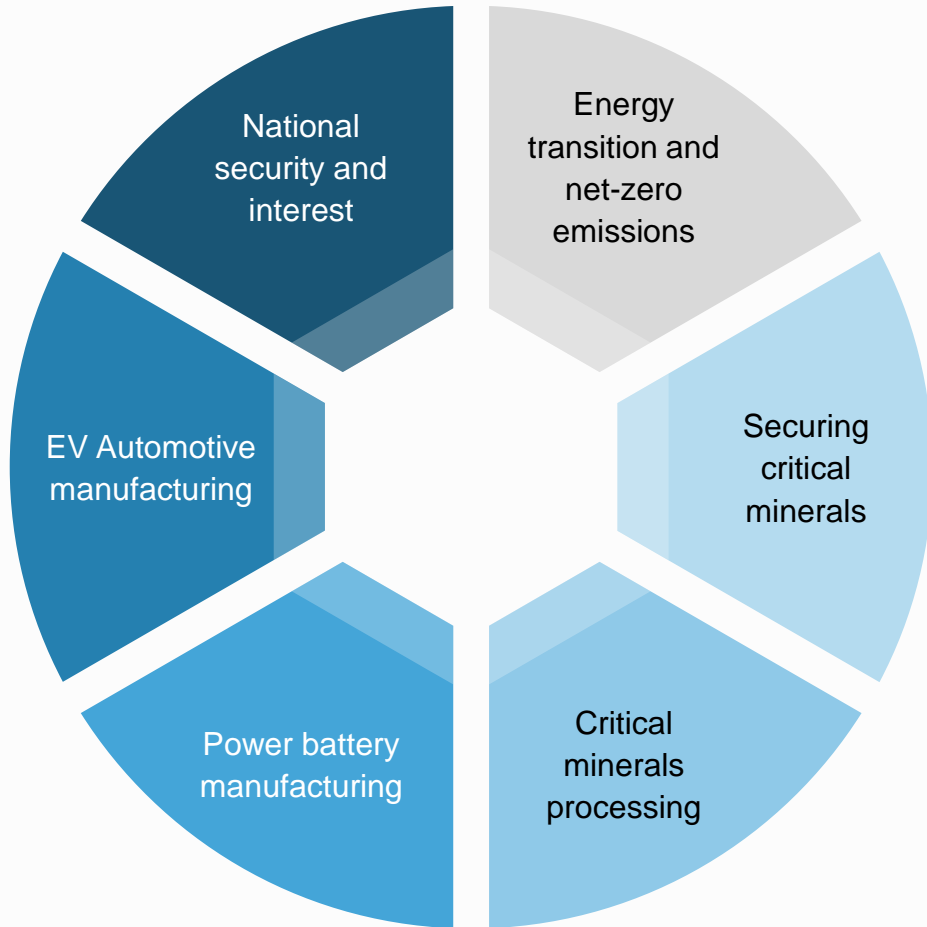
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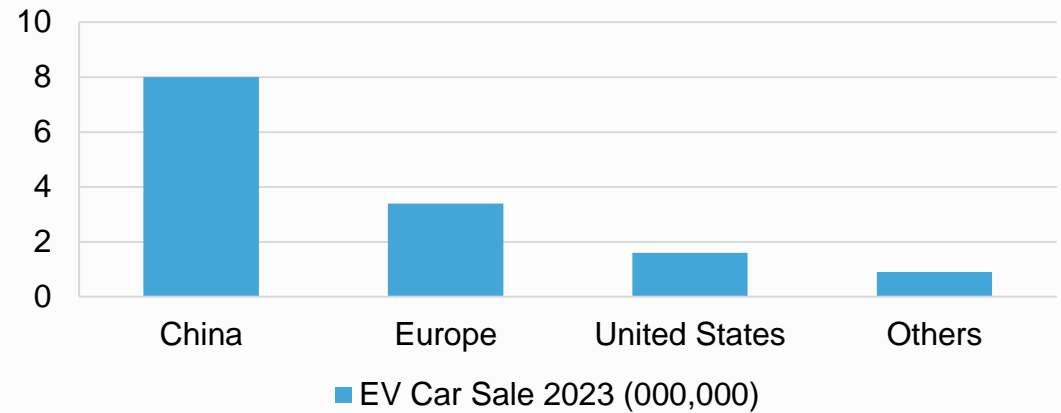
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OVERVIEW



EV Car Sales 2023 (million)



Source of data: International Energy Agency

CRITICAL MINERALS

REGULATORY CHALLENGES

The growing demand for power batteries places significant pressure on the supply of critical minerals, which are increasingly seen as of national security and interest.

On the one hand, resources nationalism is on the rise, and States on the supply end are seeking to increase their dominance in critical mineral supply.

On the other hand, States on the demand end are trying to reduce reliance on China.

Indonesia:

- Ban on export of unprocessed minerals, minerals to be refined domestically before being shipped overseas
- Foreign investment restrictions require divestment of foreign ownership down to 49%

China:

- Restrictions on the export of graphite and artificial graphite
- Prohibitions on the cross-border toll manufacturing of lithium hydroxide

US:

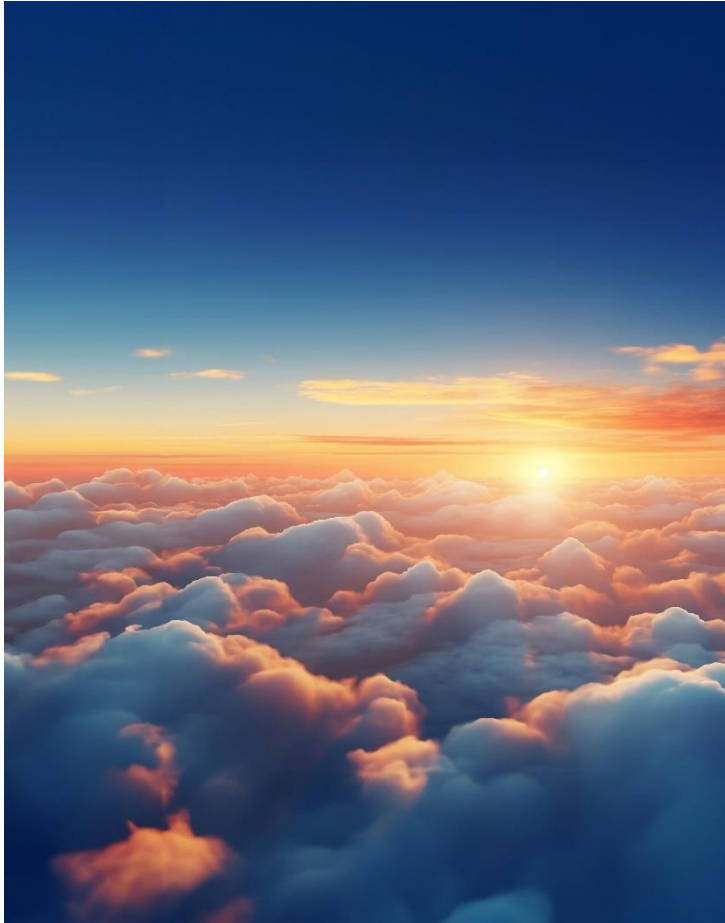
- Inflation Reduction Act of 2022 (IRA): recent developments and implications for critical minerals, batteries, and electric vehicles;
 - (IRC Section 45X);
- US National Security Implications for Critical Minerals
- US-Japan Agreement on Strengthening Critical Minerals Supply Chain and potential for similar agreements including US-EU and US-Korea

EU:

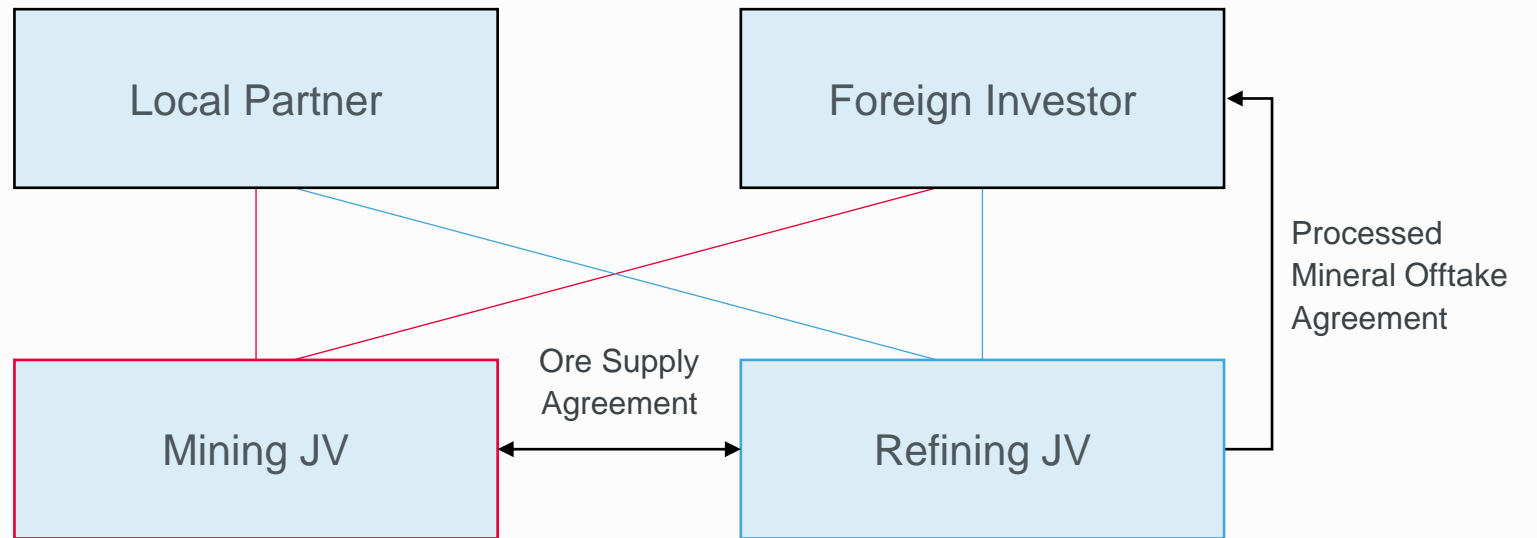
- EU Council approved the Critical Raw Materials Act to incentivize local supply and recycling of raw materials in EU
- New technology aiming to reduce reliance on critical minerals

CRITICAL MINERALS

DEAL STRUCTURES AND ISSUES



- Foreign investors (eg OEMs) partnering with upstream suppliers in two JVs: one in mining and one in refinery



- Supply of minerals from the upstream JV to the downstream JV for processing
- Foreign investor secures offtake of processed minerals on long term contracts

CRITICAL MINERALS

DEAL STRUCTURES AND ISSUES (CONTINUED)



Key Joint Venture issues:

- Governance – Board composition, Reserved Matters, Deadlock
- Conflicts of interest
- Future funding obligations



Where there are 2 Joint Ventures (mining and smelting):

- Where shareholding differs for each JV
- Inter-company arrangements between the 2 JVs
- Exits of one or both? What happens to the offtake contract?



Key Offtake issues

- Pricing, quantity, delivery
- Exclusive arrangements for supply / minimum supply requirements
- Minimum offtake requirements / take or pay
- Economics / margin
- Liability regime and caps
- Continuity of arrangements in case of exit from a JV

POWER BATTERIES

REGULATORY LANDSCAPE

Batteries for EVs are of national strategic importance to many countries' climate targets

China currently dominates the production of EV batteries

The US and Europe are rolling out incentives to bolster their onshore production of EV batteries

EU:

- “Matching aid”: An exceptional measure adopted in March 2023 to allow EU states to provide higher amounts of aid to companies when there is a risk of investment being diverted from Europe
- The EU Batteries Regulation came into force on 17 August 2023: Supply chain due diligence obligations

US:

- Inflation Reduction Act of 2022 (IRA)
 - IRC Section 45X – Advanced Manufacturing Production Credit
 - For “battery cells,” a production tax credit equal to US\$35 per kilowatt-hour
 - For “modules using battery cells,” a production tax credit equal to US\$10 per kilowatt-hour
 - IRC Section 48 – Energy Credit

POWER BATTERIES

GIGAFATORIES

What?

- A huge factory that produces very large number of batteries for electric vehicles
- The production capacity is typically expressed in gigawatt hour (GWh)

Why countries need gigafactories to be built?

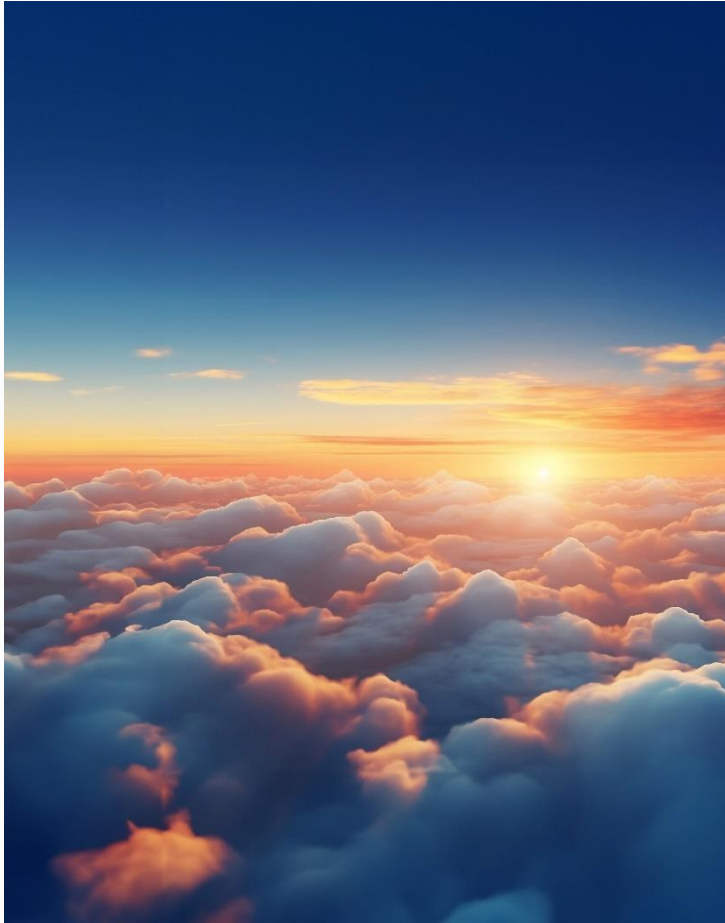
- Gigafactories are needed for the EV revolution
- Many countries around the world (including the UK, Europe and many US states) have announced that they will ban internal combustion engine vehicles within the next decade
- The presence of gigafactories in a location are vital to the survival of vehicle manufacturers which are under regulatory pressure to abandon ICEs
- Under the EU-UK Trade and Cooperation Agreement, commencing from 2027, only those electric vehicles that comply with the rules of origin can benefit from tariff-free trade. Gigafactories can help automobiles locally produced to meet the local contents requirements to avoid tariff. It is crucial since an EV battery takes up around half of a vehicle's weight and around 40% of its costs

Where?

- China, North America, Europe, Japan, South Korea and Indonesia, etc.
- Clifford Chance has recently advised the Lenders and the Export Credit Agencies on the €4.4 billion debt raise from European automotive battery manufacturer, Automotive Cells Company (ACC), for the purposes of financing the construction of three gigafactories for lithium-ion battery cell production in France, Germany, and Italy, and for R&D. ACC is co-owned by Stellantis, Mercedes and Saft (a wholly-owned subsidiary of TotalEnergies). It represents one of Europe's largest-ever debt raises in this industry.

POWER BATTERIES

GIGAFACTORIES FINANCING – KEY ISSUES



Borrower structure

- Battery manufacturer, vehicle manufacturer and/or technology partner?
- Exit

Source of funds

- Massive capital costs
- Role of equity support and contingency (mitigating permitting & completion risk)
 - Sponsor completion guarantee?
 - Subsidies:
 - Subsidies received during construction considered as equity
 - Risk of subsidies rescission (if any)
 - D/E ratios

Involvement of export credit agencies (ECAs)

- Bespoke requirements of different ECAs
- Early and deep involvement

Offtake

- Fixed and guaranteed?
- Tenor of offtake vs. tenor of financing

Additional expansion facility

ELECTRIC VEHICLES

REGULATORY LANDSCAPE

EVs are of national strategic importance to many countries' climate targets

China's BYD has overtaken Tesla for the first time for global sales of BEVs as announced in January 2023

The US and Europe are rolling out incentives to boost their domestic production of EVs

US:

- Inflation Reduction Act of 2022
 - IRC Section 30D – Clean Vehicle Credit
 - Critical Minerals Requirement
 - Battery Components Requirement
 - “Foreign Entity of Concern” (FEOC) Disqualification
 - IRC Section 45W – Credit for Qualified Commercial Clean Vehicles
- Electric Vehicle Charging Infrastructure
 - IRC Section 30C - Alternative Fuel Vehicle Refueling Property Credit
 - Bipartisan Infrastructure Law
 - National Electric Vehicle Infrastructure Standards and Requirements
 - DoT/FHWA Funding to Install 500,000 new EV chargers
 - Enhancing “Buy America” Standards for EV Charging

ELECTRIC VEHICLES

FOCUS ON CHINA



China

- China was the world's e-mobility hot spot in 2023 with 1 in 4 cars being a BEV
- China also has many local EV manufacturers
- China EV companies focus on intelligent/connected tech, have an independent EV business, and a startup risk appetite

ELECTRIC VEHICLES

TECHNICAL COLLABORATIONS – KEY LEGAL ISSUES

Technical Collaborations – Key Legal Issues

We are seeing international automobile manufacturers and financial investors partnering with China EV companies through different modes:



	Mode 1: China EV co license to/JV with international Partner for sale and manufacture of existing vehicle model	Mode 2: JV / joint development of new vehicle model	Mode 3: China EV co license to/JV with international Partner for sale and production of new vehicle model by adapting existing model
Target market	Outside China	China market	Outside China
Brand ownership	China EV co	Foreign Partner	To be negotiated
Core technology ownership and licensor	China EV co is owner and licensor Key is to ensure protection of core technology: - In case of insolvency of the China EV co, it is important that the license that the Partner relies upon is not adversely affected. - For financial investors, to consider: i) warranty on IP; ii) key person non-compete; iii) global patent and trademark registration and protection; iv) seat on the board, with veto right in case of key IP related matter		
Technology improvement by the licensor	Inclusion in the license to be negotiated		
Technology improvement by the JV/Partner	Not expected	Yes – ownership to be negotiated	

ELECTRIC VEHICLES

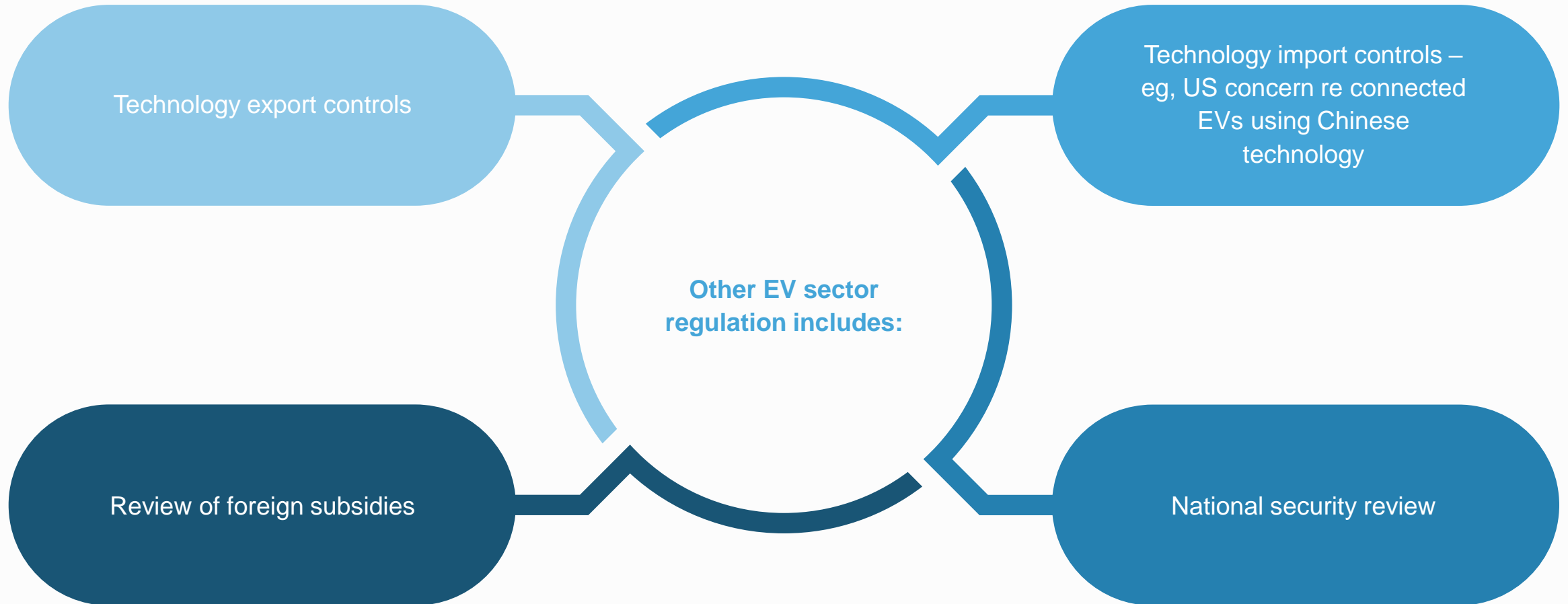
TECHNICAL COLLABORATIONS – KEY LEGAL ISSUES



	Mode 1: China EV co license to/JV with international Partner for sale and manufacture of existing whole vehicle model	Mode 2: JV / joint development of new vehicle model	Mode 3: China EV co license to/JV with international Partner for sale and production of new vehicle model by adapting existing model
Exclusivity	Exclusivity usually heavily negotiated. Foreign OEM may request for exclusivity of cooperation – i.e. the China EV player cannot cooperate with other competing OEMs.		
Non-compete	Non-compete usually heavily negotiated. In automobile sector – non-compete is tricky to define and implement.		

Not all about tie-ups with Chinese EV manufacturers; also EV collaborations between other car companies, eg, Japanese, Korean, US and European

ELECTRIC VEHICLES



CONCLUDING REMARKS

Opportunities for APAC region



- Host of critical minerals
- Many innovative battery and EV manufacturers in the region
- Market-leading technology

Challenges



- National security concerns
- Strong competition
- Increasing regulation

PLEASE GET IN TOUCH AND CONTINUE THE CONVERSATION

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