Taiwan Top 50 Corporates

Rising Sustainability Awareness Opens Opportunities In The Electric Vehicle Supply Chain

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Corporate Ratings

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This report does not constitute a rating action

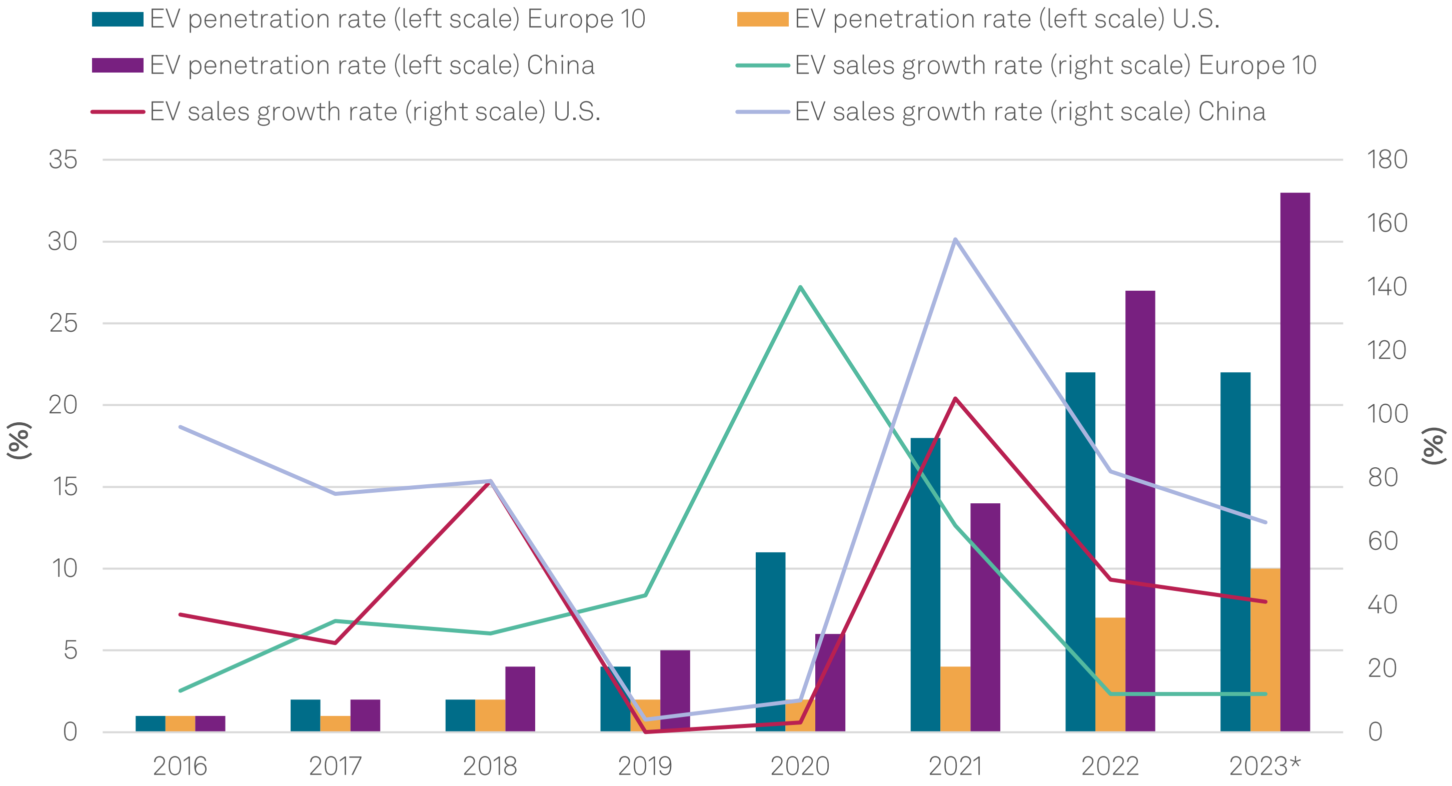
Key Takeaways: Opportunities Outweigh Risks

- Investments by the top 50 corporates in electric vehicle (EV), renewable energy, and sustainable products are generally positive to their business position and underpin potential growth prospects and improving business diversity.
- Intense competition for some products could increase business risk and offset the benefit of business diversity and growth potential.
- The benefit to business position alone is less likely to materially strengthen credit profiles over the next one to three years, given the limited EBITDA contribution from these products before at least 2025.
- Most companies can support investments in the three targeted areas mentioned above without materially weakening their financial position, albeit with some exceptions.
- Growth of renewables damages Taipower's profitability. Government efforts to control inflation are likely to cap Taipower's capacity to pass through high fossil fuel costs.

Notes: Chang Chun group -- Chang Chun Petrochemical Co. Ltd. and Chang Chun Plastics Co. Ltd. Source: Company data, Taiwan Ratings Corp.

Electrical Vehicles Provide A New Battlefield For Taiwan Corporates

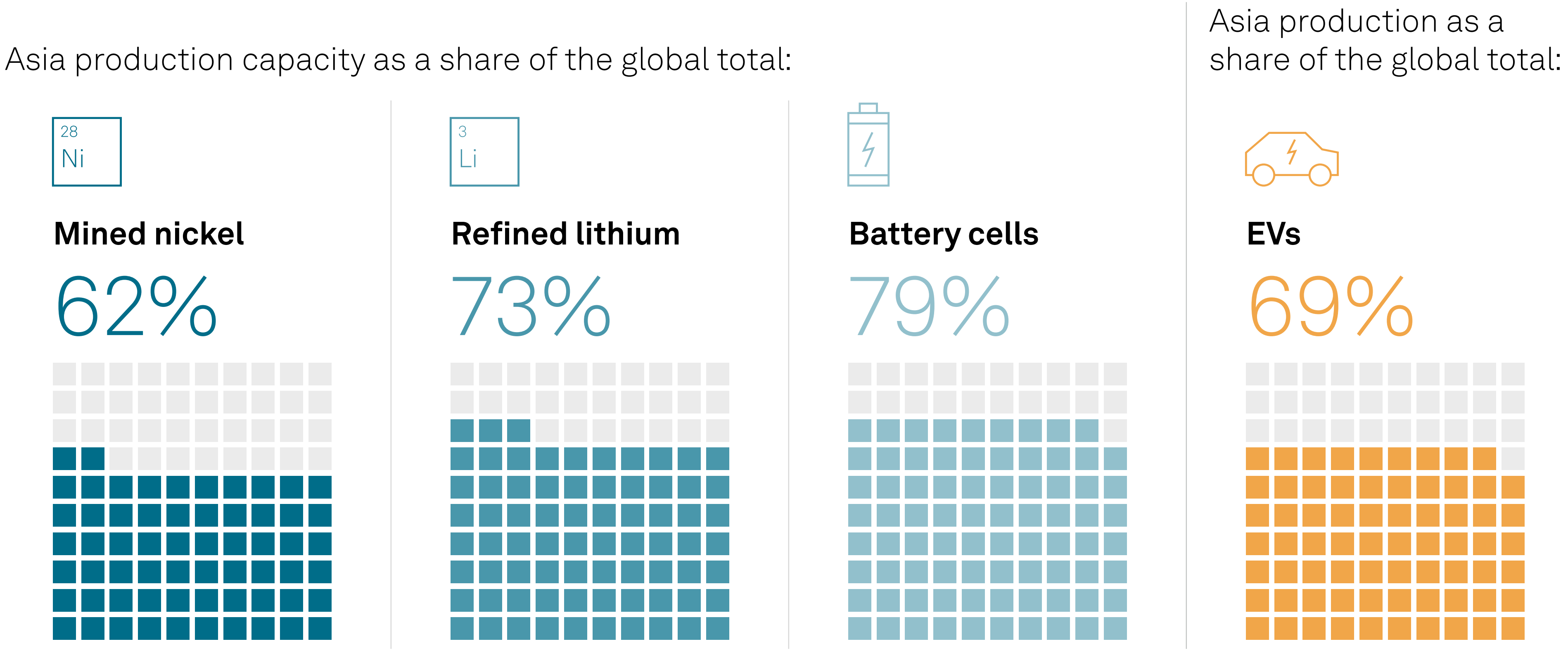
EV penetration will rise quickly



f--Forecast. a—Actual. Source: Global Auto Sales Forecasts: Macro Risks Demand Pricing And Production Discipline, published by S&P Global Ratings on April 18, 2023.

- **Rapid electrification of private and public transportation is reshaping the global auto supply chain.** This offers additional growth opportunity for Taiwan corporates.
- **Increasing electronics content in autos underpins new opportunities for new electronics-based entrants to the auto supply chain.** It also gives companies such as Delta Electronics and Hon Hai some advantage over traditional auto suppliers.
- **However, Taiwan's leading corporates lag regional peers for big supply chain items such as batteries.** Asia is the major base for key EV components such as battery and for assembly. Taiwan corporates have low shares in these areas. But some of the top 50 have advantages in semiconductor, components, materials and modules such as on-board chargers, wall chargers and charging poles.

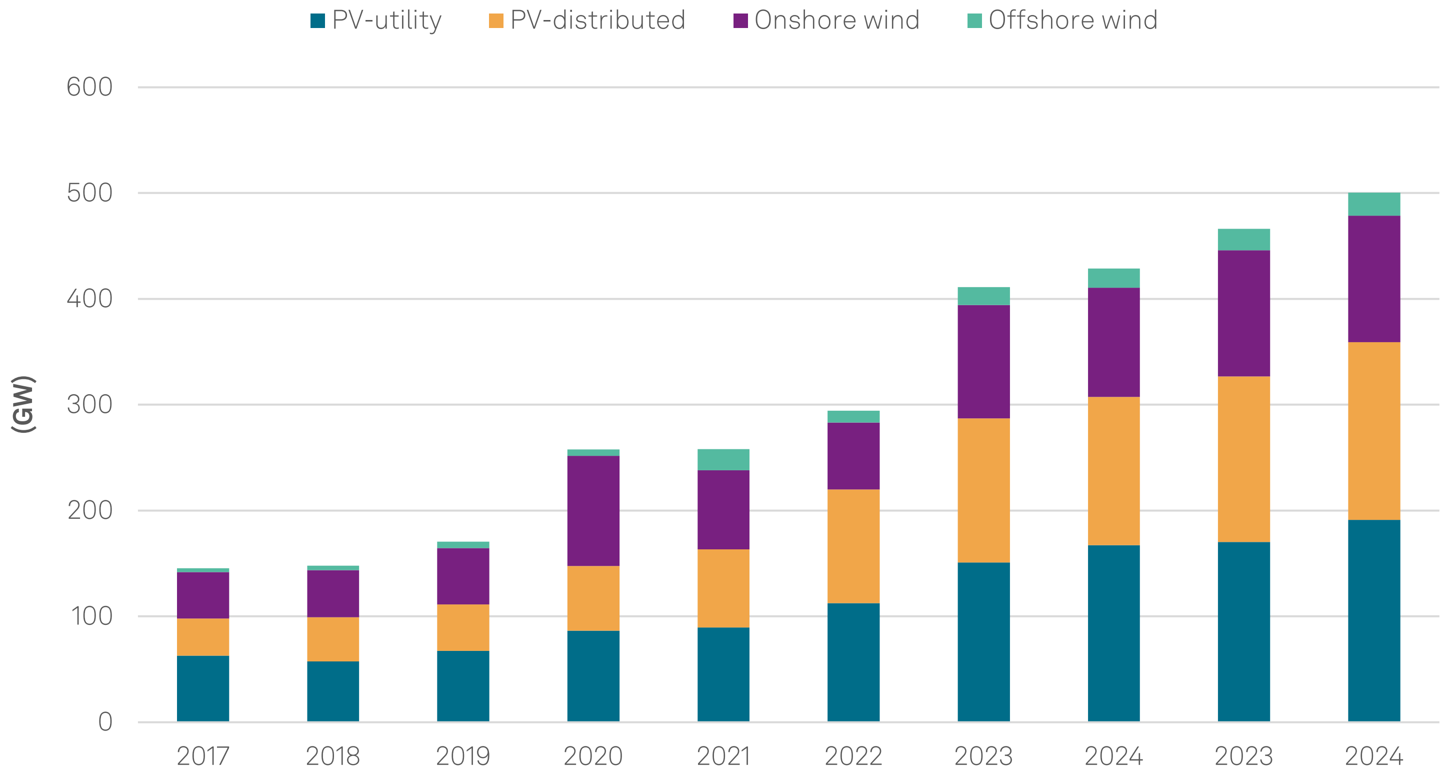
Asia dominates the global EV supply chain



Data are for 2022. The data only take into account the production capacity in Asia, and do not account for the production capacity of Asian players in other regions. EV--Electric vehicles. Source: Glimmers Of Winners Emerge In Asia's EV Push, published by S&P Global Ratings on May 14, 2023.

Rising Global Renewable Investments Offer Limited Opportunities For Taiwan's Top 50

Solar power will be the major growth driver for global renewable energy

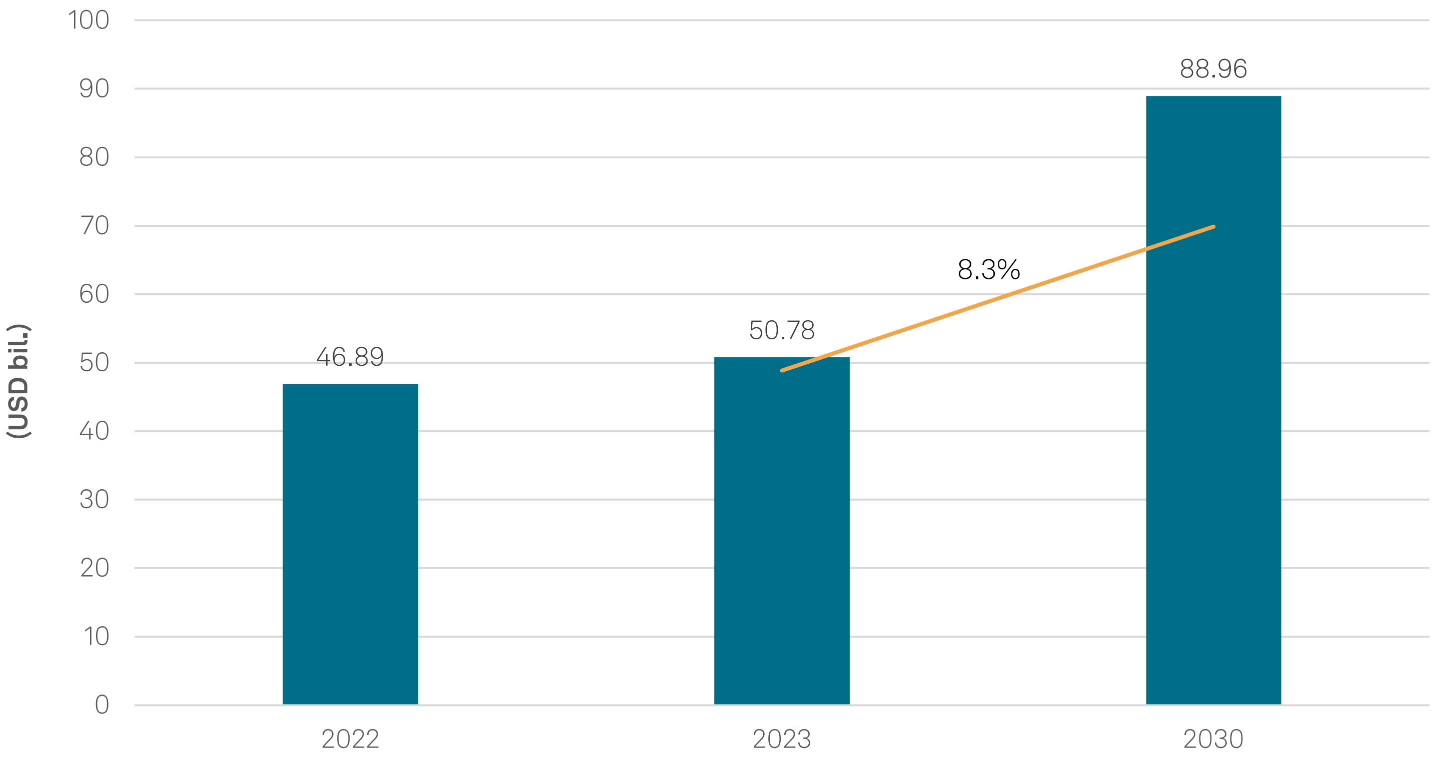


GW—Gigawatt. PV—Photovoltaics. Source: International Energy Agency (IEA).

- **Global renewable energy installations are growing fast amid a surge in extreme weather conditions.** Global installations will accelerate, particularly for solar power. This will increase demand for panels, modules and other components, such as inverters.
- **Some among the top 50 see a potential for stable long-term cash flow sources in renewable electricity generation and storage.** Nonetheless, most of the top 50's investments in solar or wind power are to lower greenhouse gas emissions to fulfill ESG goals and regulatory requirements.
- **Chinese and other global firms dominate equipment supply.** But Taiwan's top 50, which are mostly component providers, could improve their product diversity. This includes Delta's inverters used in solar power and Walsin Lihwa's cabling for offshore wind farms.

Taiwan Corporates Could See A Competitive Edge With Sustainable Products

Demand for recycled plastics could accelerate

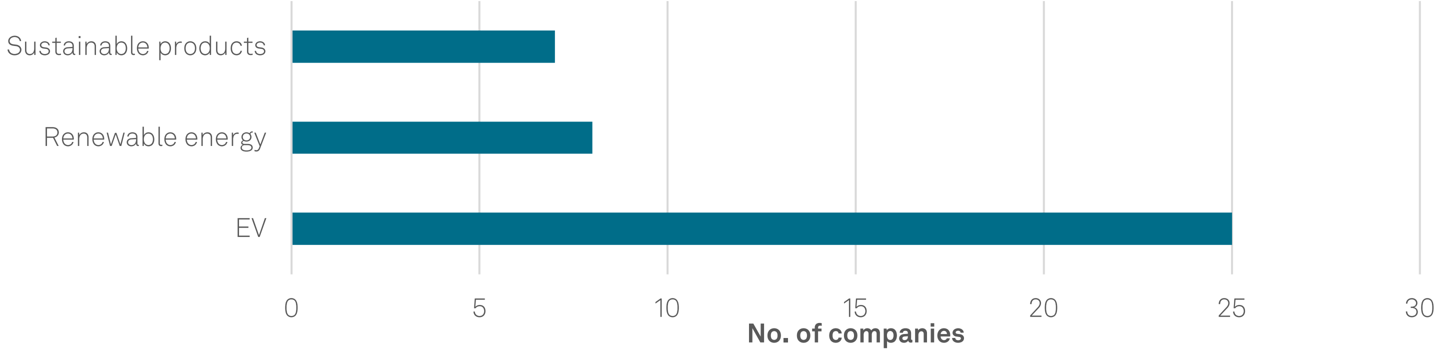


Source: International Energy Agency (IEA).

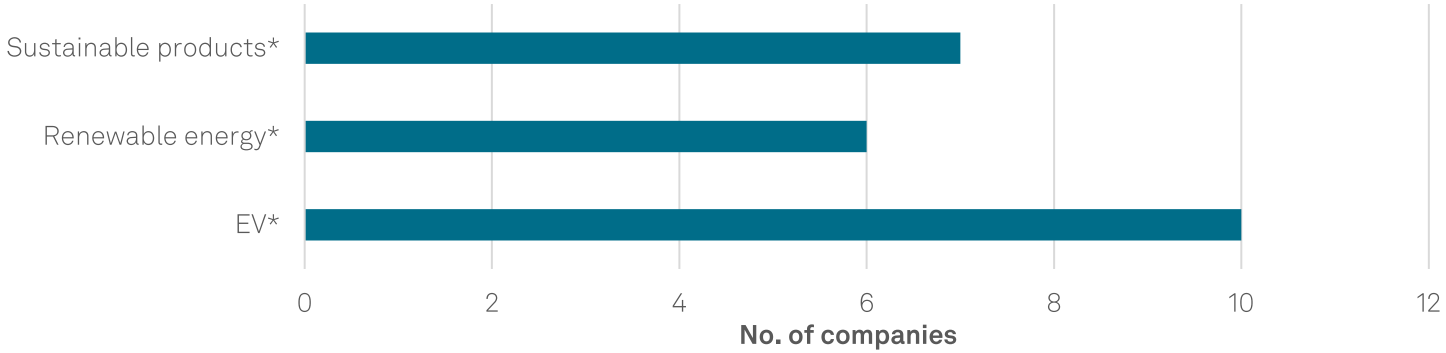
- **Recycled products are an increasingly important tool to differentiate sellers amid increasingly intense competition.** Differentiation is gaining important because aggressive capacity additions in China could pressure product spreads for most commodity chemicals and synthetic fibers.
- **Recycled products generate higher margins.** Leading global brands are willing to pay a premium to secure sufficient supply for their aggressive sustainability targets, given constraints in technology and recycling infrastructure limit supply growth.
- **Polyester has the highest recycle rate.** In addition, the recycling of other plastics such as polyethylene and polypropylene is growing fast. Technology for high value applications of recycled materials is the key for Taiwan's top corporates to enhance their competitive advantage.

The Top 50 Has Relatively Higher Exposure To Electric Vehicles

Most top of the top 50 are engaged in EV-related business...



..but not all companies are dedicated to EV business

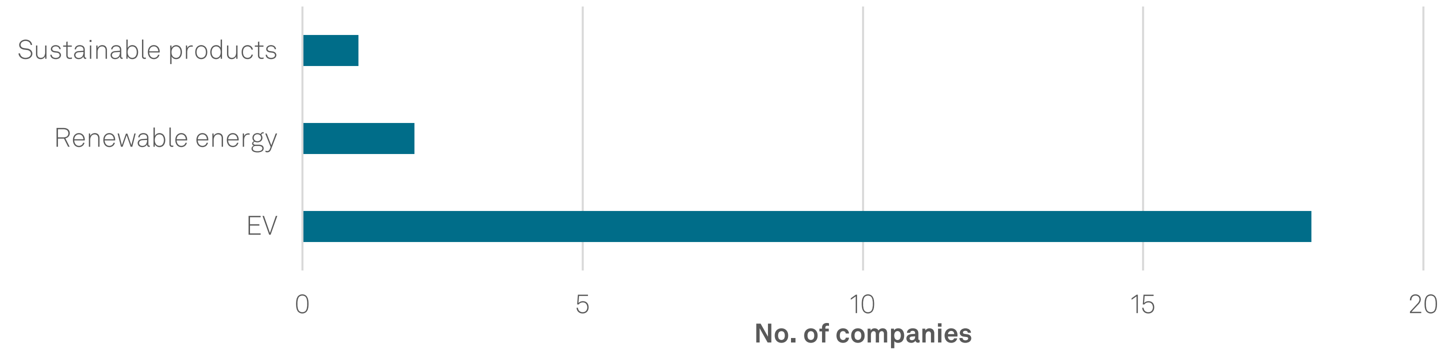


*Companies' products or services are dedicated to sustainable products, renewable energy and EVs. Source: Taiwan Ratings Corp.

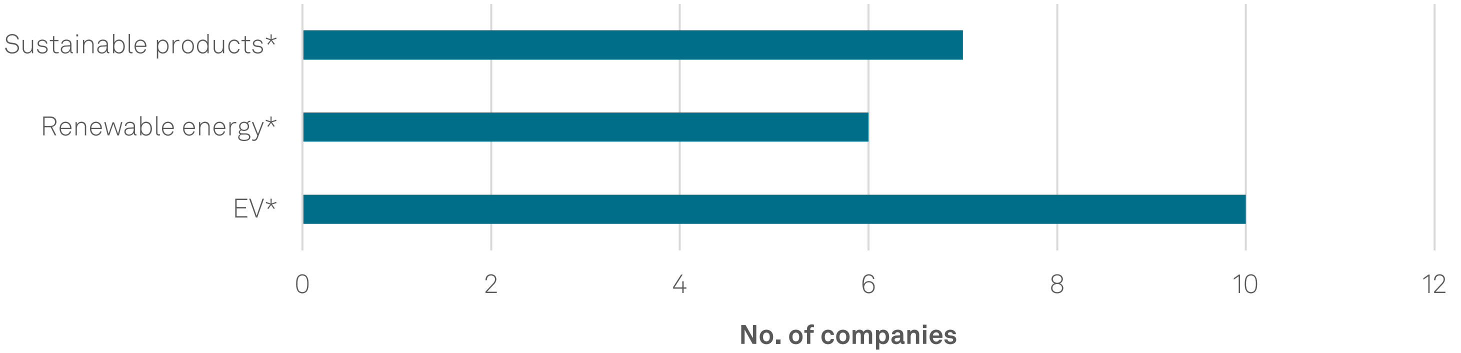
- **About half the top 50 firms are increasing their EV sales to provide general purpose or dedicated EV components and materials to EV makers.** About 40% of these (10 out of 25) supply parts and are materially dedicated to the EV sector.
- **EV batteries are generally not the expertise of Taiwan's top corporates.** They lead in some areas, such as on-board charging modules, charging poles, foundry services for auto chips, but lag in battery design and production. Battery investments are focused on niche segments such as high-performance lithium-ion batteries.
- **Only two companies are considering renewable energy generation and power storage as strategic growth areas.** Some are looking to expand product diversity and increase value added products. Others aim to invest in green power to offset internal green house gas emissions.

Top 50 Exposure To EVs (cont'd)

Tech companies focus more on EVs using their current technology



Non-tech companies are more diverse in their approach to the three emerging areas



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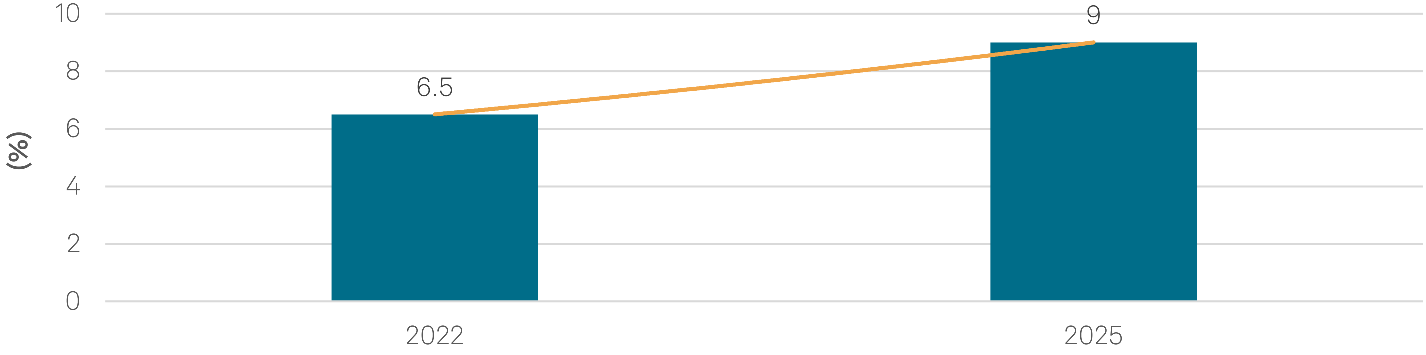
- **Tech companies focus more on EV-related products.** This is mostly to extend their core technology capability and products to new applications, given the similarity in technology.
- **Chemical companies focus on recycled plastics and fibers in the face of substitution risk.** They also face oversupply risk. Other branded or original equipment manufacturing companies are increasingly using recycled materials, but the scale remains very limited.
- **Non-tech companies' investments in some aspects of the EV and renewable value chain could face bigger hurdles.** Their relatively limited track record and expertise could limit business development. Expansion through acquisitions carries high execution risk, such as the initial losses of Taiwan Cement Corp.'s acquisition of Europe-based NHOA S.A.

EBITDA Contributions From Sustainability Businesses To Remain Limited

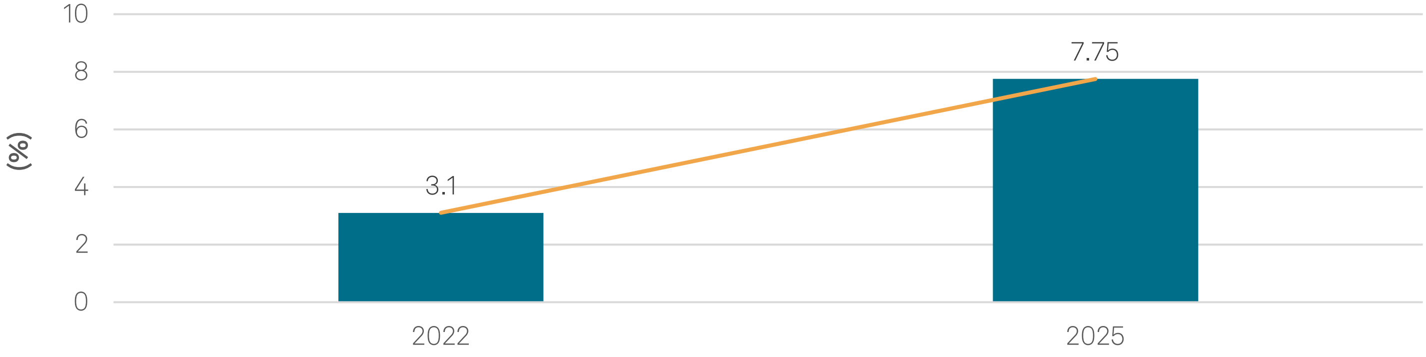
Revenue to expand faster than the corporate average

Median % of revenue



EBITDA to grow faster than revenue with improving margins

Median % of EBITDA

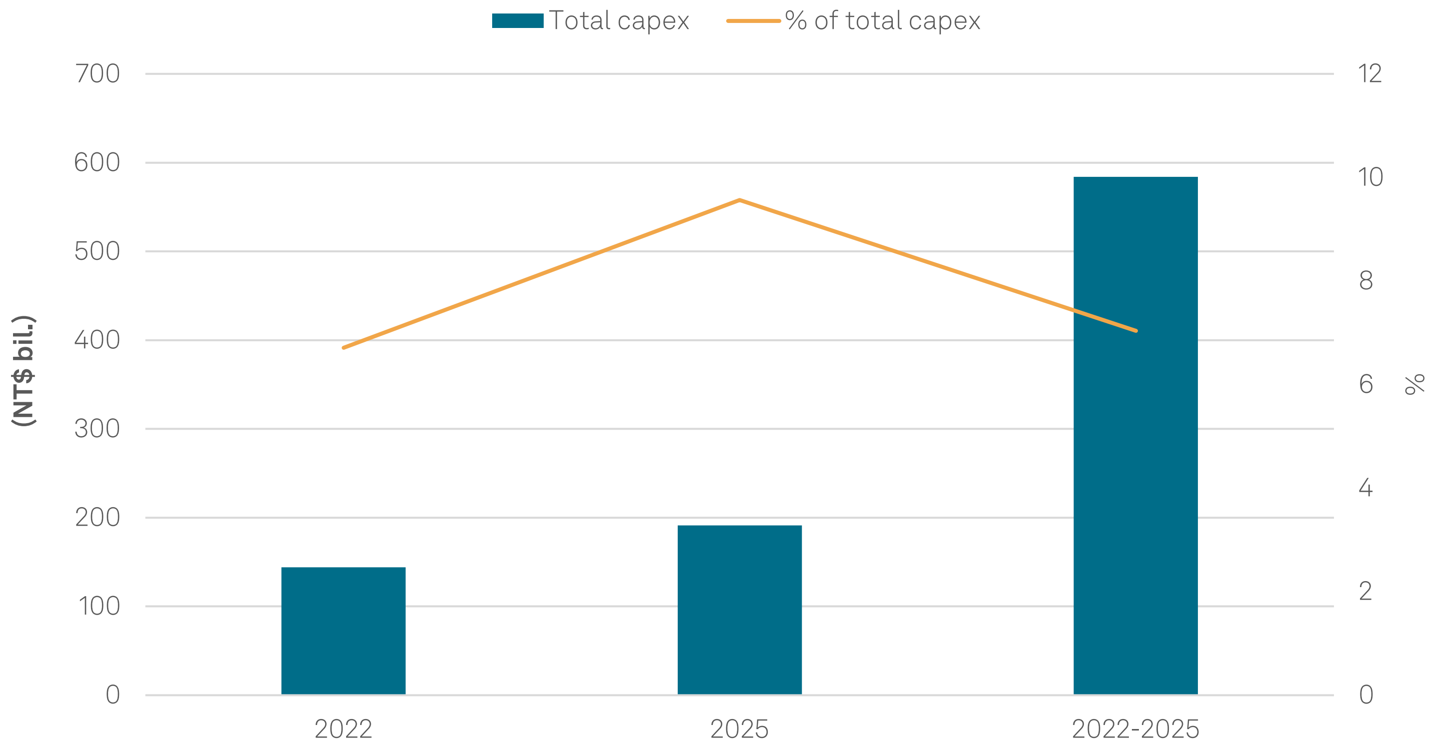


Source: Taiwan Ratings Corp. estimates.

- **Most companies are still at the early stage of developing sustainability businesses.** Hence, revenue and EBITDA contributions from such new businesses remain low as of 2022, according to our estimates.
- **Contribution to EBITDA is lower than the contribution to revenue.** This suggests that revenues associated with sustainability businesses are still below the corporate average, particularly for EV-related businesses. Profitability should catch up gradually along with growing business scale, despite material competition risk.
- **Renewable power generation and recycled plastics and fibers could generate better initial profitability.** Government renewable energy subsidies enable green power generators to receive higher tariffs. In addition, top global brands' willingness to pay premiums for recycled materials allows better margins than for virgin materials.

Investments Will Not Be Aggressive, But Acquisitions Could Grow

Proportion of capital expenditure on EVs and renewables

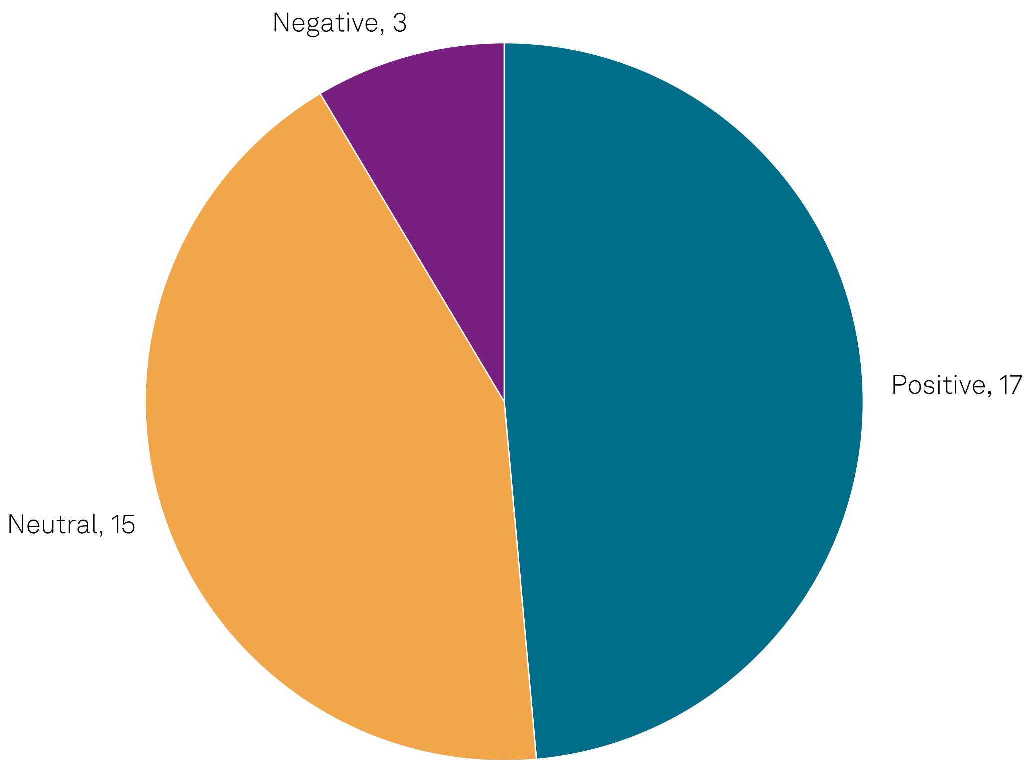


Source: Taiwan Ratings Corp. estimates.

- **Only a few companies will be aggressive in capex on EVs and renewables.** Most firms are conservative in their capex, spending well below 10% of overall capex on these businesses. Only 4 firms spend over 20% of their capex in the three sustainability fields.
- **High capex could negatively affect debt leverage for some.** However, capex and investments in sustainable businesses are less likely to bring material negative impact on the financial position of most companies.
- **Acquisitions could play a bigger role in business development.** Some top corporates, including Hon Hai, Delta and Taiwan Cement, have turned to acquisitions to accelerate the development of their EV and renewable energy businesses. Acquisitions could grow, given the general weakness in a company's market position and supply chain strength in these fields.

The Credit Impact Of EV-Exposure Is More Positive Than Negative

The impact on BRP is largely positive

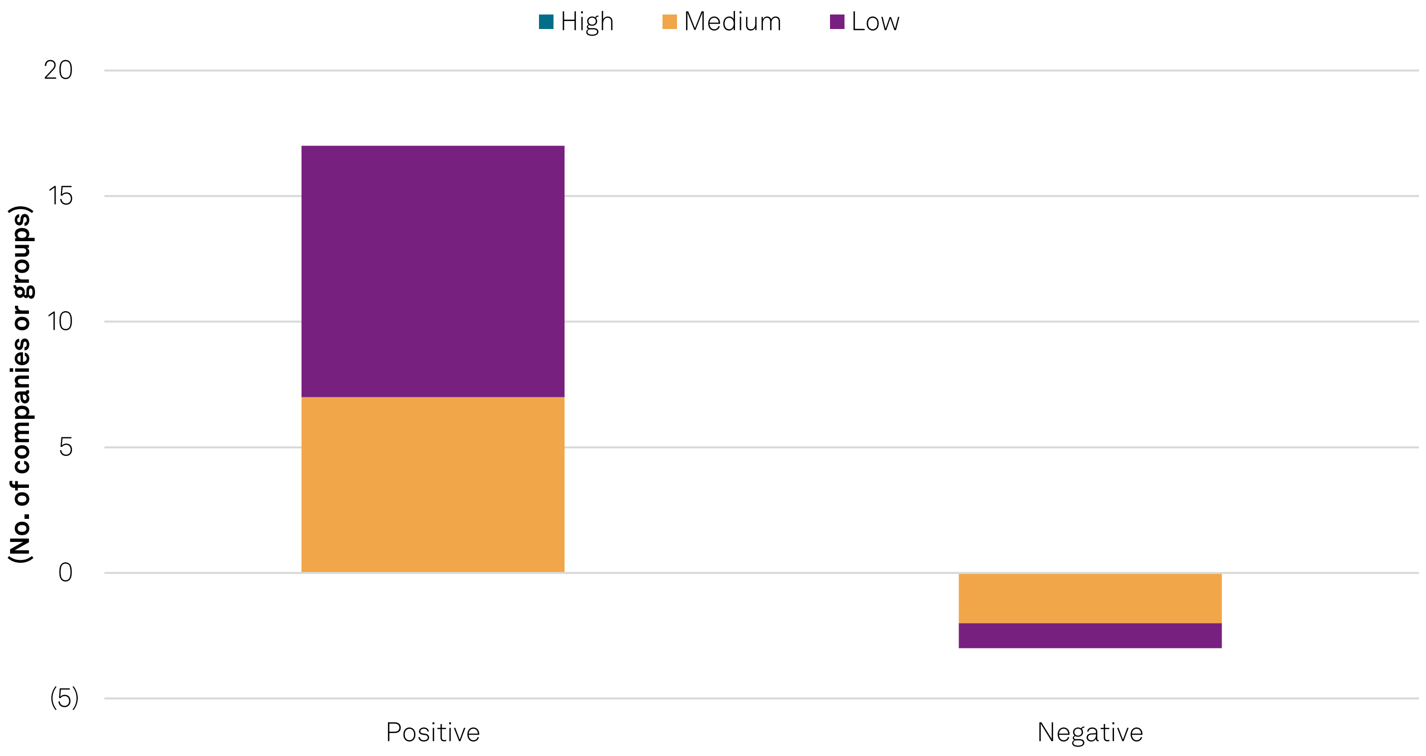


BRP—Business risk profile. Source: Taiwan Ratings Corp. estimates.

- **The effect on business risk profiles (BRP) is generally positive.** Of the 35 firms or groups exposed to EV, renewable energy and sustainable products markets, the impact on BRP is positive for 17. Stronger growth prospects and increasing business diversity are key factors supporting this.
- **Generating positive results from these businesses takes time.** Most firms are in the initial stage of business development with limited revenue and EBITDA generation from these areas. Competition risk in the EV supply chain also adds to uncertainties.
- **New applications for existing products could still bring benefit.** Rising demand from EVs, is particularly positive for semiconductor, electronics components and battery materials. Growing renewable installations are also positive to some chemical and electrical companies.

Booming EV And Renewable Market Business Could Hurt Those Unprepared

The magnitude of impact for EV exposure is low to medium and not immediate

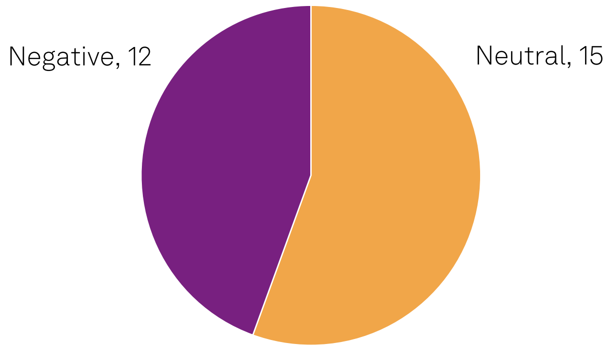


Source: Taiwan Ratings Corp. estimates.

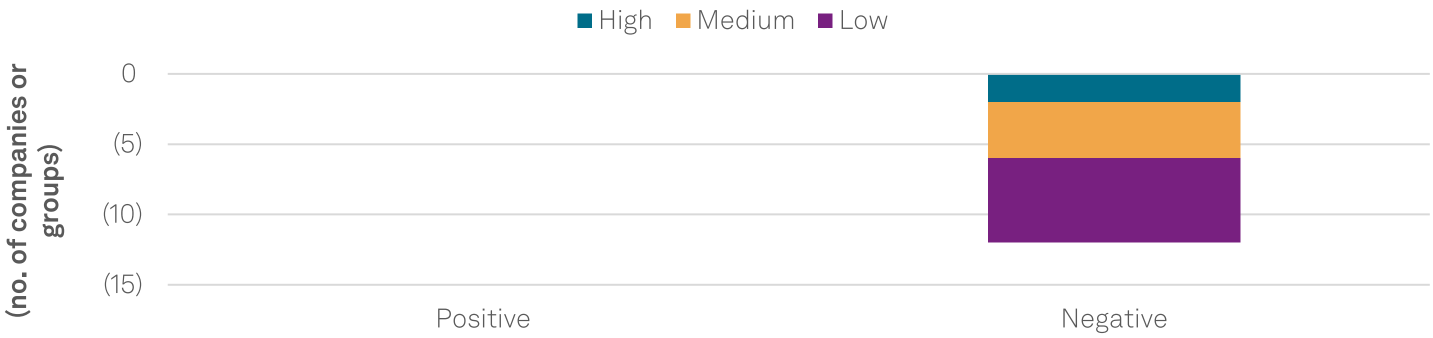
- **Rapid market transition to EVs could weaken the credit quality of auto suppliers that do not timely cope with the shift.** Auto suppliers that fail to shift to EV products could lose revenue; e.g., Chen Shin Rubber due to the company's key customers in China are largely foreign brands with limited EV sales in the domestic market.
- **Growing electrification hurt CPC Taiwan's long-term demand.** However, the real effect cannot be felt until the EV infrastructure improves in Taiwan. Similarly, auto firms will not be affected so soon. Nonetheless, weaker brands without a strong EV product line could lose markets in the long term.
- **Rising use of renewables will hurt Taiwan Power's profitability.** High fossil fuel prices are likely to cap Taipower's capacity to pass through high costs amid inflation concerns.

The Financial Impact From High Investments Could Be Material

Financial impact is consistently negative



High initial investments could materially hurt creditworthiness



Source: Taiwan Ratings Corp. estimates.

- **The financial impact of investing in EV, renewable energy and sustainable products could weaken credit metrics despite the positive effects on business profiles.** High capex relative to companies' cash flow could materially increase debt leverage before new businesses bear fruit. The impact is particularly significant for Taiwan Cement and Walsin Lihwa.
- **Most companies have cash flow to support investments.** Most can support the relatively limited capex needed through strong internal cash flow, especially leading tech firms-Delta, Hon Hai, TSMC and UMC.
- **Companies with high debt leverage need to sustain financial strength.** Companies such as Taiwan Cement and Walsin Lihwa have tapped the equity market to prevent debt leverage from deteriorating, given their investments in highly capital-intensive parts of the supply chain.

Appendix:

Companies or groups with exposure to EVs, renewable energy and sustainable products

Issuer	Primary Sustainability Businesses	Products	Dedicated products	Magnitude of FRP impact	Direction of FRP impact	Magnitude of BRP impact	Direction of BRP impact
Delta Electronics Inc.	EV	On board charger, charging poles, EV inverter, motor and powertrain, passive components	Y		Neutral	Medium	Positive
	Renewable energy	Solar inverters, energy storage system	Y				
United Microelectronics Corp.	EV	Auto chips	N		Neutral	Medium	Positive
Hon Hai Precision Industry Co. Ltd.	EV	EV assembly, components, software and platform, lithium battery, auto Electronics, body and structural components, motors.	Y/N	Low	Negative	Medium	Positive
AU Optronics Corp.	Renewable Energy	Solar Power EPC and O&M	Y	Medium	Negative	Medium	Positive
	EV	Car display	N				
Taiwan Cement Corp.	EV	Lithium battery, EV charging network EPC/O&M	Y	High	Negative	Medium	Positive
	Renewable energy	Solar power generation, energy storage	Y				
Walsin Lihwa Corp.	EV	Battery materials	Y	High	Negative	Medium	Positive
	Renewable energy	Sea cable for offshore wind farms	N				
Tatung Co.	Renewable energy	Energy storage, renewable energy	Y	Medium	Negative	Medium	Positive
Far Eastern New Century Corp.	Sustainable products	rPET, recycled fiber		Medium	Negative	Low	Positive
Catcher Technology Co. Ltd.	EV	Casing for infotainment system	N		Neutral	Low	Positive
Pegatron Corp.	EV	EV components, infotainment, powertrain and charging poles	Y		Neutral	Low	Positive
Eclat Textile Co. Ltd.	Sustainable products	Recycled fibers			Neutral	Low	Positive
Yageo Corp.	EV	Passive components for auto applications	N		Neutral	Low	Positive
Lite-On Technology Corp.	EV	Auto lightening module, charging pole module, onboard charging module, auto camera module	N		Neutral	Low	Positive
ASE Industrial Holding Co. Ltd.	EV	Assembly of auto chips	N		Neutral	Low	Positive

EV—Electric vehicles. FRP—Financial risk profile. BRP—Business risk profile, Notes: Formosa Plastics group includes Formosa Plastics Corp., Formosa Chemicals & Fibre Corp., Formosa Petrochemical Corp. and Nan Ya Plastics Corp. Low--Unlikely to lead to an FRP or BRP score change in the next one to three years; Medium--Likely to lead to and FRP or BRP score changes in one to three years; High--Highly likely to lead to an FRP or BRP score changes in the next one to three years. Source: Company data, Taiwan Ratings Corp.

Appendix cont'd

Issuer	Primary Sustainability Businesses	Products	Dedicated products	Magnitude of FRP impact	Direction of FRP impact	Magnitude of BRP impact	Direction of BRP impact
Quanta Computer Inc.	EV	GPS module, infotainment system	N	Low	Negative	Low	Positive
Formosa Plastics Group	EV	Lithium battery and materials	Y	Low	Negative	Low	Positive
	Sustainable products	Recycled plastics (rPET, etc.) and fibers	Y				
Innolux Corp.	EV	Car display	N	Low	Negative	Low	Positive
Chang Chun Group	EV	Mostly copper foil for lithium battery	Y		Neutral		Neutral
	Renewable energy	Material (epoxy resin) for wind turbine	N				
Advantech Co. Ltd.	EV	EV IoT	N		Neutral		Neutral
ASUSTeK Computer Inc.	EV	Infotainment system, chargers	N		Neutral		Neutral
Acer Inc.	Sustainable products	Recyclable NB cases and packaging	N		Neutral		Neutral
China Steel Corp.	EV	EV materials	N		Neutral		Neutral
CHIMEI Corp.	Sustainable products	rABS	Y		Neutral		Neutral
MediaTek Inc.	EV	Auto chips	N		Neutral		Neutral
Largan Precision Co. Ltd.	EV	Lens for auto cameras	N		Neutral		Neutral
Hotai Motor Co. Ltd.	EV	Distribution	Y		Neutral		Neutral
Pou Chen Corp.	Sustainable products	Recycled fibers	Y		Neutral		Neutral
Uni-President Enterprises Corp.	Sustainable products	Bottle Without Label	Y		Neutral		Neutral
Nanya Technology Corp.	EV	Automotive DRAM	Y		Neutral		Neutral
President Chain Store Corp.	Sustainable products	Rental Cup and Machine to collect used plastic bottles	Y		Neutral		Neutral
Unimicron Technology Corp.	EV	Substrates for auto chips	N		Neutral		Neutral
Taiwan Semiconductor Manufacturing Co. Ltd.	EV	Auto MCU, RF, memory chips to advanced CPU, GPU, ASIC for autopilot applications	N	Low	Negative		Neutral
Cheng Shin Rubber Ind. Co. Ltd.	EV	Tires for Electric motor and EV	Y		Neutral	Low	Negative
CPC Corp. Taiwan	Renewable energy	Declining petroleum demand	Y	Low	Negative	Medium	Negative
Taiwan Power Co.	Renewable energy	Rising costs for renewable procurement	Y	Medium	Negative	Medium	Negative

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