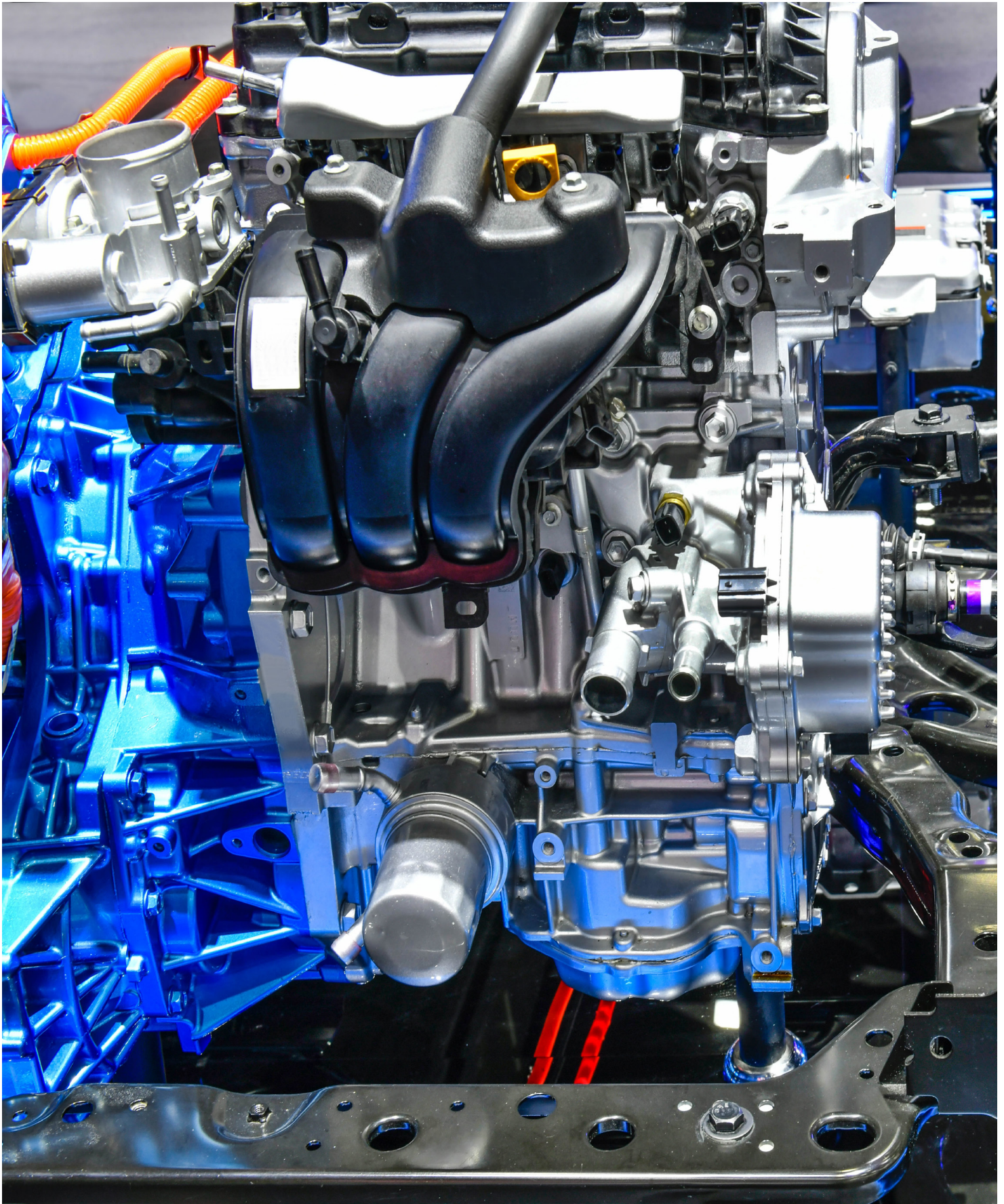


Is manufacturing making a come back?



Manufacturing's multiplier effect • Rising domestic capability • EV impact and decarbonisation



Manufacturing rebound

Generating new demand for industrial space

The green transition

As the world transitions toward net-zero emissions and the global demand for clean and sustainable energy grows, Australia has the potential to become a leading renewable energy provider. Various power systems, including wind, solar, hydro or bioenergy, along with battery technologies, are set to play an integral role in this transition, powering electric vehicles (EVs), energy storage systems (ESS), and the broader electrification of residential, commercial, and industrial sectors.

Batteries and advanced manufacturing

The establishment of specialised manufacturing facilities for batteries and ESS will be imperative to meet this demand, driving the need for industrial floorspace.

Moreover, investments in advanced manufacturing, biomedical, renewable energy, and low-emission technologies also have the potential to further amplify the demand for floorspace.

Green hydrogen also deserves mention, given the scaling up that's underway and the funding support being provided by the Federal government. Green hydrogen will play a crucial role in decarbonising the steel sector.

Behind all of this, data centres are needed to support storage, cybersecurity and AI capabilities.

Significant flow-on demand for industrial

Recent data from the Australian Bureau of Statistics (ABS) reveals a significant surge in private sector investments, with the value of factory construction and secondary production buildings reaching nearly AU\$2.7 billion in 2023. Over the past decade, this sector has maintained an impressive average annual growth rate of 10.2%. In addition to this growth, the value of private sector warehouse buildings amounted to c.AU\$10.1 billion, underscoring a significant amount of flow-on demand for transport, logistics and storage floor space.

Upwards growth trajectory

Although higher interest rates and construction costs have curtailed some development starts in 2024, more than 10 million sqm of new industrial floorspace has been added to the east coast markets since 2019, further underscoring this ongoing growth trajectory. At the same time, robust tenant demand from the transport and logistics industries, wholesalers and manufacturers drove the vacancy rate to near or below 1.0% in some markets, while rents surged.



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Industrial preferred

While demand for industrial warehousing in recent years has primarily been fuelled by the pandemic and the rise in e-fulfilment, other factors such as the security of supply chains and pressure to onshore manufacturing (or parts of it), alongside Australia’s population growth are also exerting considerable influence. This has contributed to the investment frenzy seen over the last few years.

In fact, industrial/logistics has overtaken residential as the preferred sector for investment in APAC markets, with 93% of respondents in the ANREV Investment Intentions Survey 2024 indicating they would invest in the sector, up from 76% in 2023.

Beyond resiliency

The interplay of geopolitical, economic, and environmental influences intensifies supply chain complexity. Persistent disruptions to transportation and logistics, the most recent example being the Red Sea disruption, coupled with rising freight and fuel costs, present some headwinds to manufacturers and, in some cases, prevent operations at full capacity. In Australia, this is compounded by extreme weather events.

Localising supply chains extends beyond resiliency. It encompasses sustainability and creates opportunities for the local workforce. In this context, industrial real estate emerges as critical infrastructure to support this.

In this report, Savills Research reviews some of these structural forces and their impacts on industrial real estate in Australia.

QUICK STATS



10 million

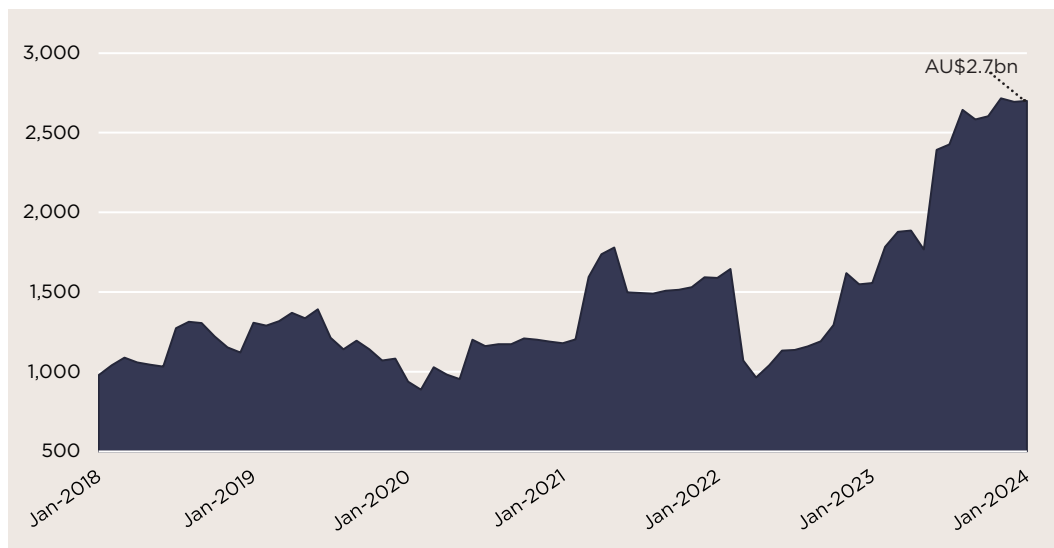
More than 10 million sqm of new industrial floorspace has been added to the east coast markets since 2019.



93%

93% of respondents in the ANREV* Investment Intentions Survey 2024 indicated they would invest in the sector, up from 76% in 2023.

Total value of building jobs for private sector factories & secondary buildings
AU\$’000 million, annual year to January



Source Savills Research using ABS

*The Investment Intention Survey is carried out by three regional real estate associations, including the Asian Association for Investors in Non-Listed Real Estate Vehicles (ANREV), European Association for Investors in Non-listed Real Estate Vehicles (INREV) and the Pension Real Estate Association (PREA). The 2024 survey attracted responses from 90 participants globally, of which 85 are institutional investors, and 5 are funds of funds managers from 19 countries. The survey coverage reached more than 89.7 billion USD of AUM in real estate.

Source Savills Research / ANREV



Multiplier effect

Manufacturing investment has significant downstream benefits

Manufacturing's multiplier effect

Manufacturing in Australia plays a pivotal role in the economy, with its investments in facility expansion or upgrades creating a ripple effect. This effect is not limited to the manufacturing sector but extends to construction projects, engineering, design, equipment, and raw materials.

The Grant Thornton Manufacturing Benchmarking report data (2020) revealed that for every Government dollar spent, an additional 30 cents worth of revenue is generated. This finding echoes the Australian Industry Group's assessment in 2006, which indicated 25 cents of additional revenue. The multiplier effect of Australian manufacturing is profound, stimulating jobs, investments, and sales in other downstream sectors (NSW Business Chamber, 2011).

Rising domestic capability to buoy demand

30% of manufacturers say they are now manufacturing or sourcing in Australia and 72% of manufacturers in Australia expect to increase production levels in the next 12 months, according to the 2023 Commbank Manufacturing Insight report.

While there are a few recent examples, the Australian Government's establishment of the National Reconstruction Fund (NRF), will encourage this investment by allocating AU\$15 billion to partner with the private sector to support investment.

The mandate was officially released in November 2023 and requires the Corporation to target a rate of return of between 2 and 3% above the five-year Australian Government bond rate

over the medium to long term. Sectors such as renewables and low emissions technologies, advanced and medical manufacturing, science, and transport are expected to benefit from this initiative, providing clear opportunities for potential investors.

Australian manufacturing backing

State governments are also backing advanced manufacturing as a growth sector as it moves from low-value production to increasingly technology-driven. Victoria, South Australia, and Queensland are the most recent to lead this charge with 10-year roadmaps to improve their manufacturing capabilities.

In a recent example, the Victorian Government has secured targeted investment in Parkville's biomedical precinct by on-selling the bulk of the former CSL manufacturing 11.2ha site to Zoetis Australia, a global animal health company, in a deal reportedly worth AU\$350 million. The agreement includes a capital investment to help establish sovereign manufacturing capabilities and will create up to 95 new jobs. Zoetis will expand its operations when CSL relocates to its new facilities.

In South Australia, construction has started on an AU\$100 million facility for Noumed Pharmaceuticals within the Nexus North Industrial Estate. The new manufacturing facility, expected to create up to 250 construction jobs and employ more than 180 people when production begins in 2026, will receive up to \$20 million in funding from the Australian government as part of the state's 10-year health and medical industries strategy.



30%

of manufacturers now say they are manufacturing or sourcing in Australia



72%

of manufacturers plan to increase production levels in the next 12 months

Source 2023 Commbank Manufacturing Insight Report

Making space

Jobs growth and investment

The net-zero transition opportunity

The government has committed to significantly reducing carbon emissions by 2030, with a long-term goal of achieving net-zero emissions by 2050.

The transition largely hinges on the rapid electrification of various sectors. The Australian Energy Market Operator (AEMO) predicts that business and industry will double their grid electricity consumption to support an economy focused on decarbonisation. More equipment and technologies will be needed, the most crucial being renewables, EV batteries and ESS. While there are challenges in reaching net-zero goals, it also presents opportunities for industrial property, which forms the backbone of the industries needed to make this transition.

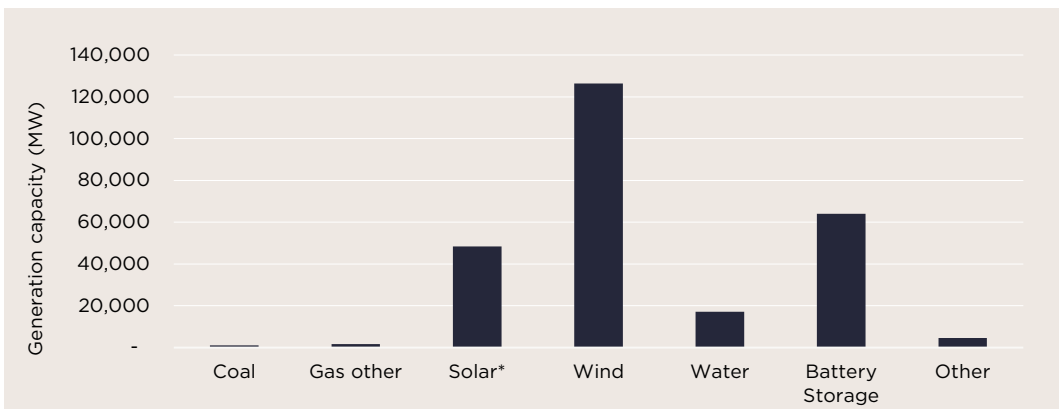
Manufacturing will drive market demand and expand industrial boundaries

As unit battery costs fall through economies of scale, the overall market demand is tied to commissioning large scale renewable projects across Australia on the National Electricity Market (NEM), which also influences the type of batteries contracted each year. The size and scale of projects is estimated to increase with various projects proposed across the states, requiring large land parcels for development.

According to AEMO's February 2024 data release, more than 245 battery storage projects are proposed for development across Australia, with a storage capacity of approximately 64,000MW. This is more than double the proposed storage capacity forecast by AEMO in January 2022 (113 projects; c.26,790MW).

Proposed existing and new developments by fuel-technology category

Generation capacity (MW) of publicly announced projects



Source Savills Research using Australian Energy Market Operator data release 7 February 2024
Solar* Fuel-Technology category excludes Rooftop PV installations; Other includes Hydrogen, Green Energy, Other Renewables

QUICK STATS



90%

About 90% of the NEM's coal fleet is forecast to retire before 2035 and the NEM must almost triple its capacity to supply energy by 2050.



82%

Federal policy dictates that 82% of electricity in the National Electricity Market (NEM) will be supplied from renewable sources.

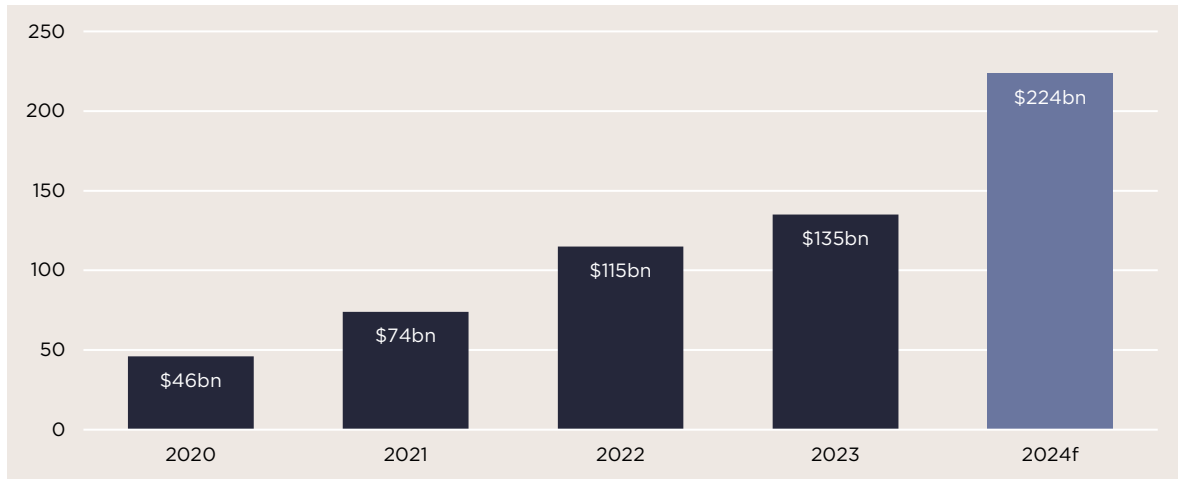
Source Savills Research using AEMO and NEM

A domino effect?

Global demand for batteries is soaring

New and planned clean-tech factory investment is surging

US\$billion (real 2023)



Source Savills Research using BloombergNEF Energy Transition Investment Trends 2024 Report, released 30 January 2024. Note: Clean tech includes upstream factories for solar and batteries, electrolyser assembly for hydrogen and nacelles for wind.

Are we underestimating the domino effect of batteries?

A regulatory shift toward sustainability, which includes net-zero targets and bans on diesel and petrol cars in some countries, will see the global demand for batteries soar. McKinsey & Company recently suggested that at least 120 to 150 new battery factories will need to be built between now and 2030 globally.

Although new manufacturing will be the largest growth segment, battery recycling is also projected to rise significantly.

According to Bloomberg New Energy Finance (BNEF), investment into equipment factories and battery energy technologies reached a new record at US\$135 billion in 2023 (up from US\$46 billion in 2020) and is set to surge further over the next two years. This is considerably higher than the combined investment in solar and wind factories (US\$33 billion), according to BNEF. Investment plans show a 66% increase is expected from 2023 to 2024 due to a large pipeline of battery gigafactories globally.

Significant industrialisation is needed. Could this be the fourth industrial revolution?

While many of the products associated with decarbonisation and electrification will be manufactured in a large-scale facility known as a gigafactory, Australia does face challenges in competing to scale, despite being the only country with all 11 critical minerals required for EV batteries. Even so, with all these new technologies and record take-up of EVs on our roads, there will be an increased need to localise these supply chains.

Coming back to batteries, EVs and ESS, how does this impact industrial and logistics real estate in Australia?

Demand and growth of EVs, ESS and the market for batteries could increase the demand for industrial property for energy storage, to manufacture EVs, its charging infrastructure, components, and parts, as well as space for EV conversion and from other sectors that support energy transformation, including recycling, hydrogen, and bioenergy.

While the benefits of industry clusters are well understood, untangling the paradox of where these clusters are located can drive a change in the market dynamics by shifting occupier and investor perceptions of the locations due to the projects that anchor them.

This demand can transform new, underutilised areas or secondary industrial precincts where they will typically be located. It will also help expand industrial use beyond existing boundaries to future growth corridors and shift both occupier and investor perceptions of the location due to high-profile projects getting underway. This shift could also help occupiers bypass the low vacancy profile in the traditional core areas, where there are typically higher rents and sale prices.

In a U.S. example, after Tesla announced they would be opening a Gigafactory in Reno, Nevada, in 2015, the vacancy rate of the wider market declined from 10.4% to 4.4%, and average rents rose 70% over the next six years.

Batteries charging up

EV sales are gathering pace in Australia, but sales are coming off a lower base compared to other global markets.

The growth of EVs & EV infrastructure will create demand for industrial real estate

The transition to EVs will create demand for jobs, not just in vehicle production and maintenance but also in the production, maintenance, and installation of the infrastructure. How many jobs are needed? Recent research conducted in the U.S. by the International Council on Clean Transportation said the growth of charging infrastructure could create more than 160,000 jobs in the U.S. by 2032, including blue-collar and white-collar roles.

Jobs related to EV infrastructure installation and maintenance, as well as ESS, are especially important because they are carried out at the site. This creates a growing opportunity for the demand for industrial real estate and the spillover of economic benefits to local markets.

Megaprojects and gigafactories

EV megaprojects are multibillion-dollar investments, each employing thousands of workers and taking up several hundreds of thousands of square metres of industrial property. For example, Tesla's Gigafactory in Texas cost more than US\$1 billion and consisted of nearly 1 million sqm (10 million sq ft) of operational space across several floors when it was completed in 2022.

This is an extreme example but not outrageous when we consider that the global sales of EVs

exceeded 10 million in 2022, compared to just 120,000 in 2012, according to the International Energy Agency (IEA 2023).

IEA expect to see 14 million in sales by the end of 2023, representing a 35% year on year increase. To meet global EV demand, the IEA says that more than 50 gigafactories (each with 35 GWh of annual production capacity) would be needed by 2030 in policy targets in addition to today's battery production capacity.

2023 EV sales three times higher than 2022

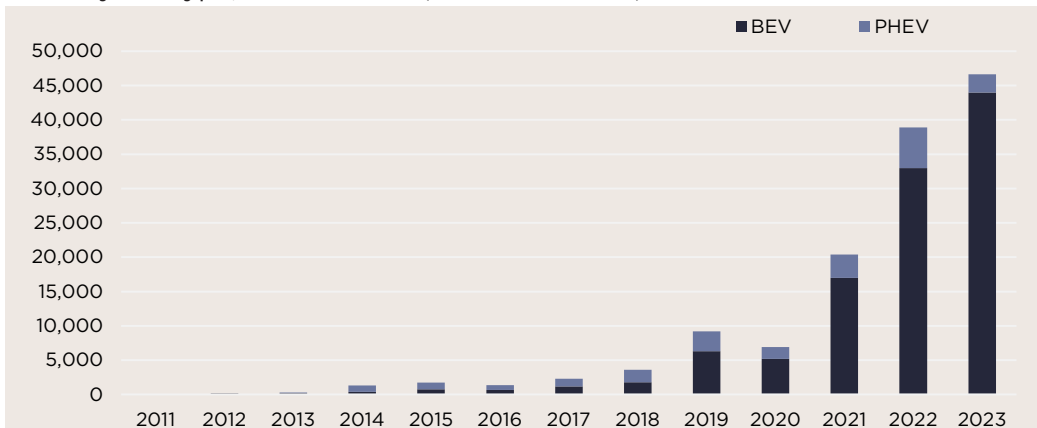
In Australia, the sale of EVs has continued to increase, with the total volume of sales in the first half of 2023 so far exceeding the total for 2022, according to the Electric Vehicle Council (EVC) 2023 report. As of the end of June 2023, 46,624 EVs had been sold in Australia – almost three times higher than the same period in 2022 (a 269% increase).

EVs now represent 8.4% of all new cars sold in Australia. This is up from 0.8% in 2020 and more than double the 2022 share of 3.81%, EVC data shows.

This demand outlook gets even more compelling when we consider that the market for lithium-ion battery cells—the critical power source component—is forecast to grow by more than 30% annually through to 2030, reaching \$400 billion globally, according to McKinsey & Company.

Electric Vehicle sales in Australia

Sales by EV Type, 2011 to 2023 (YTD June 2023)



Source Savills Research using Electric Vehicle Council State of Electric Vehicles JULY 2023 Report
BEV = Battery Electric Vehicle; PHEV: Plug-in Hybrid Electric Vehicle

QUICK STATS



8.4%

EVs now represent 8.4% of all new cars sold in Australia (Jan-23 to Jun-23). This is up from 0.8% in 2020 and more than double the 2022 share of 3.81%. (EVC 2023)



\$4.9 BN

2023 was a record-breaking year for new financial commitments to large-scale storage, with total investment reaching \$4.9bn, up from \$1.9bn in 2022. (CEC 2024)



40%

Renewables accounted for nearly 40% of Australia's total electricity supply in 2023, up from 17% in 2017. (CEC 2024)

Source Savills Research using Australia's Electric Vehicle Council 'State of Electric Vehicles' July 2023 report and Australia's Clean Energy Council 'Clean Energy Australia 2024' report



Is the EV catch up possible?

Green energy incentives can help the manufacturing rebound by creating jobs and driving investment

U.S. Manufacturing is coming back to life

In 2022, the Inflation Reduction Act was passed by the United States Congress. The groundbreaking legislation contains US\$624 billion worth of programs and funding to incentivise the transition to net zero. It is the largest-ever investment in climate initiatives, clean energy, electrification and energy efficiency with the overarching goal of supporting domestic manufacturing of EVs, batteries and other renewables to kickstart a clean energy industrial revolution.

Since its passage, the legislation has catalysed US\$110 billion in U.S. clean-energy projects, a Wall Street Journal analysis shows. Additionally, Savills Research in the U.S. found that two-thirds of recently announced manufacturing jobs were tied to advanced industries, including EV batteries, chips and clean energy. These gains are heavily concentrated in Sun Belt and Midwest states with advantages in access, infrastructure, labour and land availability.

While there are indications of a potential slowdown in activity for 2024, the imperative for supply chain resiliency is expected to drive a continued trend of reshoring manufacturing operations in the coming years.

Incentives so manufacturing can catch up?

To compete effectively with offshore manufacturing capabilities, particularly in Asia, Australia must prioritise access to skilled workers, mirroring initiatives undertaken in the U.S.

Funding in education and training facilities through public and private investment holds immense potential to strengthen Australia's manufacturing sector.

In the U.S., Ford and its partner, SK Innovation, are planning a US\$11.4bn investment in mega-sites, including Twin battery plants in Kentucky and an EV battery manufacturing facility called BlueOval City in Tennessee. BlueOval will feature an onsite training facility, following a \$2.4bn incentive package from the government. This move aligns with the U.S. Government's broader \$400 billion plan to help buoy 'green energy' manufacturing, further supported by a \$9.2 billion loan granted to Ford for its construction project.

Establishing strong connections between accredited training providers and businesses reliant on skilled labour can have far-reaching benefits. Beyond promoting infrastructure and the development of educational/manufacturing facilities, this approach can also facilitate the recruitment of top-tier talent and foster innovation and ingenuity, ultimately driving significant economic value.



Changing legislation

In 2021, US President Joe Biden declared half of all vehicles sold must be emissions free by 2030.

In February 2023, the European Parliament voted to approve a new law banning the sale of petrol and diesel cars from 2035, while Britain has proposed to ban the sale of new petrol or diesel cars from 2030.

Australia does not currently have a timeframe set for stopping sales of new petrol and diesel cars, but the states and territories do offer varying EV incentives.



Decarbonising transport

Major economies are adopting policies to support uptake of EVs and to promote transport decarbonisation.

In February 2024, during a speech in Newcastle in NSW, Prime Minister Anthony Albanese highlighted Australia's potential as a renewable energy superpower on the global stage.

Early indications suggest that the Australian government is considering a scheme to rival initiatives like the U.S. Inflation Reduction Act and similar country schemes. This proposed scheme is expected to involve a mix of subsidies and co-investment to bolster the renewables sector.

The EV impact and decarbonisation

Historically, Tesla and Nissan were the major automakers manufacturing EV batteries in the U.S. market, but production is increasingly being onshored as businesses pivot toward resiliency.

In Australia, the market is dominated by three models, Tesla Model Y, Model 3 and BYD Atto 3, according to the EVC. While the list of EV manufacturers is expanding, this doesn't even cover the progress in public transportation decarbonisation.

Several initiatives are underway across Australia, including the transition to zero-emission buses and zero-emission electric rail, alongside financial incentives to roll out charging infrastructure and increase the adoption of EVs, but the level of investment does vary.

State initiatives

- The NSW government is budgeting \$3bn for the initial stage of the Zero Emission Buses program, with a target to transition over 4,000 buses in Greater Sydney by 2035.
- In WA, the government is contributing \$125m to fund electric bus infrastructure and grid upgrades where 130 buses will be locally manufactured to make the transition.
- Victoria is undergoing a three-year trial to introduce zero-emission buses into their fleet, including electric and hydrogen, with extra funding in the 2023-24 budget to double the speed of this roll-out.
- SA is also undertaking trials of hybrid trains, hydrogen-powered, and battery-electric buses to achieve its 2050 target
- Qld is targeting 100% of their government passenger fleet vehicles to have zero emissions by 2026 and every new Translink-funded bus added from 2025.

Of course, this also comes at a risk. Increased adoption of EVs, which have lower operating costs, could decrease the use of public transport. However, lower private transport costs could increase the appetite to live further away from our work centres or encourage new urban centres to form outside the traditional city centres. This will drive an increase in the take-up rate of employment lands required to support these new centres.

Barriers but opportunity

Growing manufacturing domestically is a net positive for Australia’s industrial market

Are the barriers diminishing?

There is a growing pipeline of potential renewable energy projects in Australia, but all face barriers to uptake compared to other global markets. In addition to barriers to labour supply, particularly in regional labour markets where most of these projects are being developed, Australia has higher labour, land, and connection costs than some of our global partners.

There are also constraints within the nation’s grid capability and its ability to accommodate increased renewable capacity, as well as constraints within our planning policies and a significant lack of transmission infrastructure and investment. Australia has also got more exposure to significant and frequent extreme weather events, such as storms, flooding, wildfires and heat waves.

Manufacturing rebound is being stoked by the green-energy transition

Government policy has started accelerating the manufacturing rebound momentum, with numerous new projects being announced that indicate we are only at the early stages of this transition.

Coal is retiring, and the pace of this has recently picked up. 2023 was also a record-breaking year for new financial commitments to large-scale storage, according to Australia’s Clean Energy Council (CEC). In Q2, investment in big batteries broke the billion-dollar mark during a quarter for the first time, and by Q4-2023, that record had been broken. Total investment in large-scale storage stood at \$4.9 billion by the end of 2023, up from \$1.9 billion in 2022 – a 157.9% increase, CEC data shows.

Rooftop solar continues to expand, helping the clean-tech transition with the largest contribution (3.1 GW) of any technology, significantly up from 2022 (2.7 GW), according to CEC.

Increased activity will add to floorspace demand

Beyond the production of EVs, advanced and high-tech manufacturing growth stands to contribute to the expansion of industrial real estate in Australia.

There is already evidence of increased commercial activity, which coincides with a substantial surge in the value of private sector factories and other secondary production building jobs, totalling c.AU\$8.2 billion since 2019. This is in addition to the c.AU\$33.3 billion invested in warehouse buildings over the same period, indicating significant flow-on-demand benefits for transport, storage and logistics space.

The government’s AU\$15 billion financing vehicle, launched in late 2023, will support Australia’s manufacturing industry. While recent comments from the Australian government about a potential incentive scheme similar to the U.S. Inflation Reduction Act will also help stoke the frenzy.

While much of the growth comes from high-tech industries of EVs and ESS, there is a priority to increase Australia’s domestic manufacturing capability, be it renewables, advanced or medical manufacturing. These endeavours align with the nation’s pathway to electrification and decarbonisation and serve as potent structural tailwinds for industrial real estate, further cementing the sector’s position as the preferred asset class for investment long-term.

Five biggest large-scale battery systems under construction at end of 2023

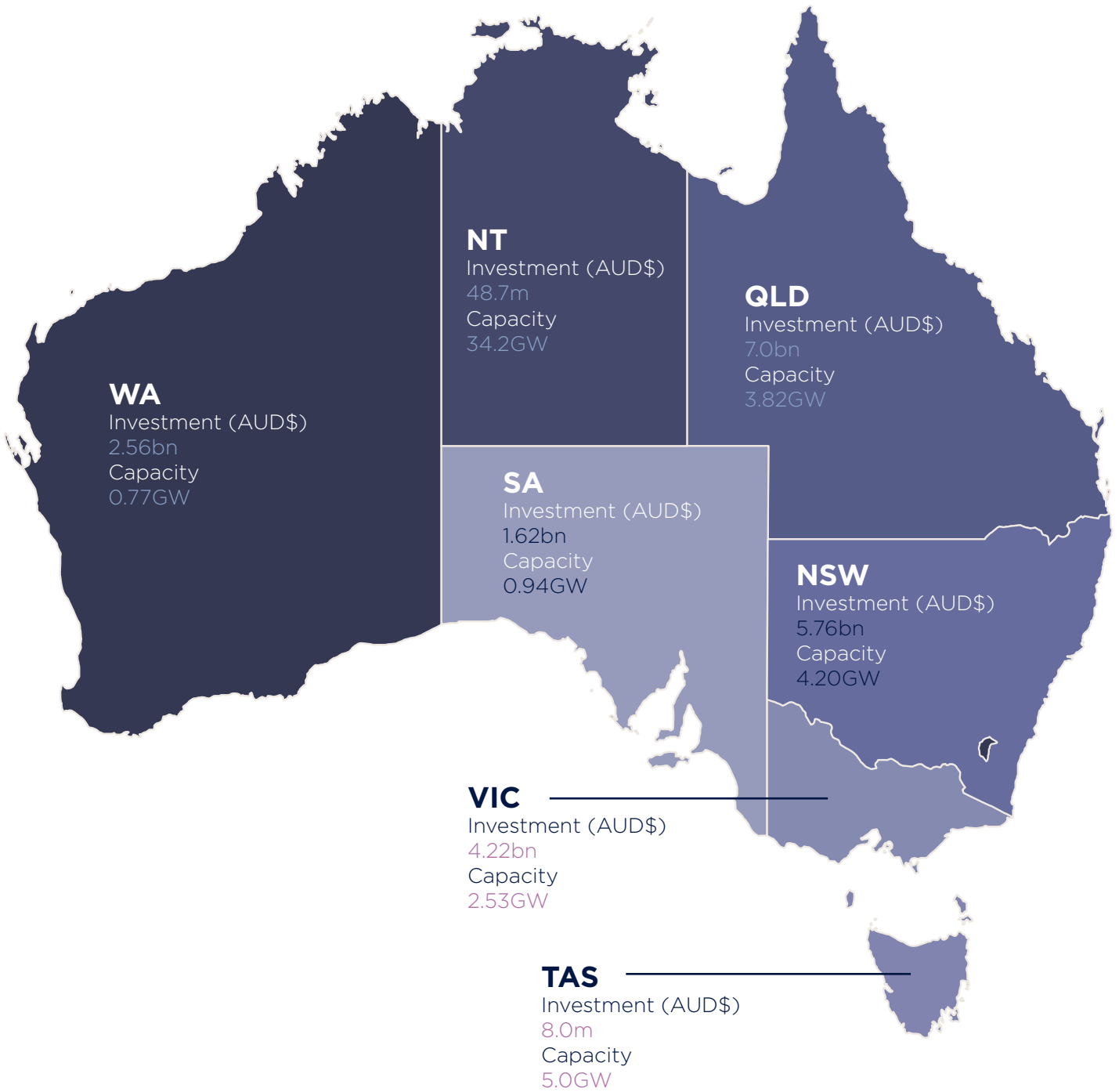
By state, project name and size of system

	Project Name	Project Owner	Location	Size of system
NSW	Waratah Super	Akaysha Energy	Colongra	850 MW/ 1,680 MWh
VIC	Melbourne Renewable Energy Hub -Phase 1	Equis Australia	Melton	600 MW/ 1,600 MWh
NSW	Liddell Power Station	AGL Energy	Muswellbrook	500 MW/ 1,000 MWh
NSW	Eraring Battery-Stage 1	Origin Energy	Eraring	460 MW/ 920 MWh
QLD	Western Downs Green Power Hub	Neoen Australia	Hopeland	270MW/540 MWh

Source Savills Research using Clean Energy Council’s ‘Clean Energy Australia 2024 Report’ (Battery Storage pages 55-56)

Investment in and capacity of energy generation projects

Projects currently at financial commitment or under construction as at 31 December 2023



Source Savills Research using Clean Energy Council's 'Clean Energy Australia 2024 Report' (page 12)



Jolt to industrial markets

Case Study:

Mark Russo, U.S. Head of Industrial Research and Max Ervin, Research Associate, reviewed the impact of EV megaprojects on industrial property pricing in 2022. This is their case study.

Substantial investments can serve as transformative catalysts for smaller, secondary industrial markets where they typically take root.

In this case study, Savills Research reviews three EV manufacturing investment projects in the U.S. that occurred between 2012 and 2022, and their transformative impact on vacancy, rents and prices.

In late 2012, Nissan opened a new plant 20 miles southeast of Nashville, Tennessee creating 1,300 jobs to produce lithium-ion batteries for its LEAF model electric vehicle.

Over the next two years, vacancy in the Nashville industrial market declined by 350 basis points—almost twice the decrease experienced in the overall U.S. market during the same period.

Similarly, rents in Nashville grew by 11.0% (compared to 6.4% in the overall U.S.), while sale prices for industrial properties spiked by 35.5% (compared to 19.6% in the overall U.S.).

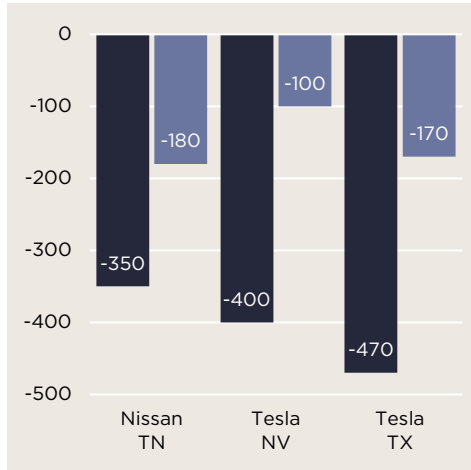
Similar stories unfolded following the completion of Tesla's Giga Nevada, outside of Reno, in 2016 and the announcement of its Gigafactory Texas in Austin in 2020.

While other macro forces likely contributed to the growth of these markets, the sheer scale of the megaprojects relative to the size of these secondary industrial markets suggests that they were a significant driver. For example, Austin's industrial market is less than 10% the size of Southern California.

Two-Year impact of EV Megaprojects on industrial property pricing: Local Market vs. U.S. Benchmark

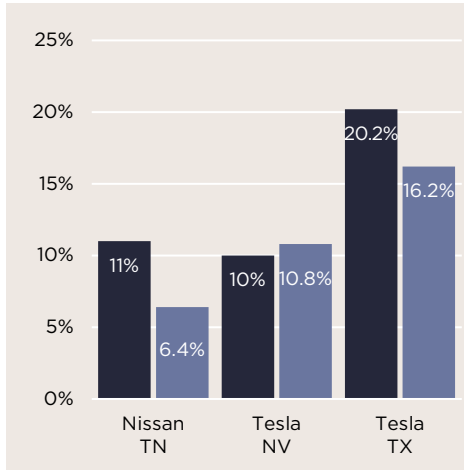
Vacancy rate decline

Two year decline in basis points (bps)



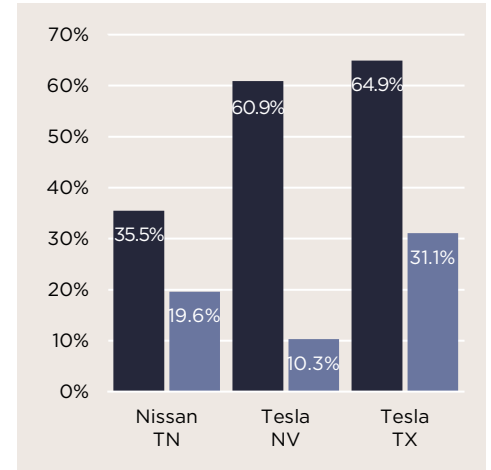
Asking rent growth

% increase in asking rents



Sale price increase

% increase in sale price

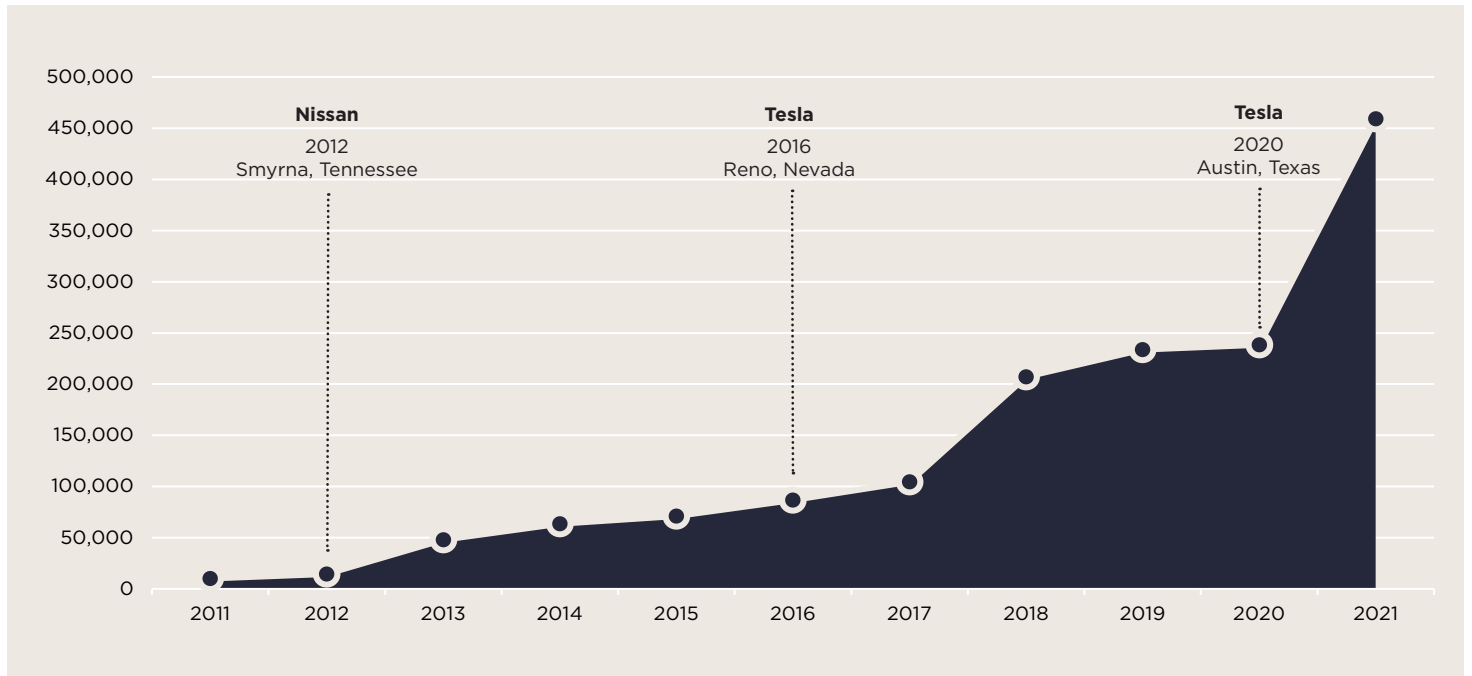


Source Savills Research

<https://www.savills.us/blog/article/329916/us-articles/electric-vehicle-megaprojects-deliver-jolt-to-secondary-industrial-markets.aspx>

Electric Vehicle Sales in the U.S. against the three major EV plant openings

EV sales 2011 to 2021



Source Savills Research using U.S. Department of Energy Data available at <https://tedb.ornl.gov/data/> as of Jun. 21, 2022

<https://www.savills.us/blog/article/329916/us-articles/electric-vehicle-megaprojects-deliver-jolt-to-secondary-industrial-markets.aspx>



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