

## Post Exhibition - Electrification of Transport in the City - Strategy and Action Plan

File No: X093358

### Summary

This report seeks Council approval of the Electrification of Transport in the City Strategy and Action Plan (the Strategy and Action Plan). The Strategy and Action Plan creates the framework to guide the City of Sydney's approach to supporting the reduction of transport emissions to meet Net Zero Emissions by 2035. Transport accounts for around 20 per cent of emissions in the City of Sydney, and the relative proportion from this sector will increase as emissions from other sectors reduce.

Reducing the amount of motor vehicle travel is the most effective method of reducing transport emissions, and will also support the economic, environmental and social outcomes in Sustainable Sydney 2030-2050 Continuing the Vision. The priority for the City remains to create the city for walking, cycling and public transport. Achieving this reduces transport emissions while retaining accessibility, and providing opportunities for public domain, planting to mitigate heat and activities such as outdoor dining.

The Strategy and Action Plan outlines the City's commitment to working in partnership with residents, businesses, and other levels of government to reduce transport sector emissions within the city for walking, cycling and public transport framework.

The Strategy and Action Plan reflects the different fleets that operate in the City of Sydney. It reflects the changes required across the whole transport system to accelerate electrification, ranging from fuel standards and fleet availability to vehicle charging needs and opportunities. The needs and opportunities in different City of Sydney locations and land use/built form typologies inform the Strategy and Action Plan. The Strategy and Action Plan contains 21 actions ranging from advocacy actions to direct City leadership actions.

On 20 February 2023, Council approved public exhibition of the Draft Strategy and Action Plan for six weeks to allow an opportunity for the community to provide feedback. The exhibition closed in early April 2023. There were more than 900 page views on Sydney Your Say and more than 250 document downloads. 162 people completed the online survey. The City also received 17 submissions from individuals, community groups and businesses.

Feedback provided indicated strong support for the plan and for the City's proposed approach to transport system electrification. The feedback highlighted the following key areas: support for the emphasis on emissions reduction by reducing motor vehicle travel (while maintaining access); support for limiting the impact on public domain of any public charging; recognition of the opportunity and challenges of retrofitting charging into strata apartment buildings; concern that there are some areas where public charging opportunities are likely to be limited without direct intervention; concern that proposed actions will not be adequate to support Net Zero emissions by 2035; and a concern that the City's analysis of potential future public charging needs could translate into a fixed or capped supply of public charging.

Based on the nature of the feedback provided, the final Strategy and Action Plan requires only minor amendments to clarify the City's plans in several specific areas.

If adopted, the City will accelerate implementation. The City's draft budget for 2023/24 contains proposals to fund early action on key City responsibilities:

- supporting electric vehicle charging in existing buildings, with an extensive deep dive research into the opportunities and constraints of different types of strata apartment buildings; and
- preparing our depots for electrification of transport, to support further electrification of the City of Sydney's fleet.

Other priority actions will be further trialling electric vehicle charging options with low public domain impact, finalising the planning and development framework to support charging in new buildings, continued advocacy to the Australian Government on vehicle emission standards, and continued advocacy to the NSW Government for bus and other fleet electrification.

## Recommendation

It is resolved that:

- (A) Council note the submissions and feedback received through the public exhibition period as shown at Attachment C to the subject report;
- (B) Council adopt the Electrification of Transport in the City Strategy and Action Plan, incorporating amendments, as shown at Attachments A and B to the subject report;
- (C) Council note the proposed expenditure in the 2023/24 budget on leadership actions consistent with the Electrification of Transport in the City Strategy and Action Plan; and
- (D) authority be delegated to the Chief Executive Officer to make amendments to the Electrification of Transport in the City Strategy and Action Plan in order to correct any minor drafting errors and finalise design, artwork and accessible formats for publication. .

## Attachments

- |                      |   |
|----------------------|---|
| <b>Attachment A.</b> | Marked-up Version - Electrification of Transport in the City - Strategy and Action Plan |
| <b>Attachment B.</b> | Design Version - Electrification of Transport in the City - Strategy and Action Plan    |
| <b>Attachment C.</b> | Summary of Feedback and Engagement Report   |

## Background

1. The City of Sydney has declared a Climate Emergency and adopted a target of net zero emissions by 2035. Sustainable Sydney 2030-2050 - Continuing the Vision, the Community Strategic Plan - Delivering Sustainable Sydney 2030-2050, and the City's Environmental Strategy 2021-2025 all outline the imperative for achieving net zero emissions by 2035.
2. Transport accounts for around 20 per cent of emissions in the City of Sydney, and the relative proportion from this sector will increase as emissions from other sectors reduce.
3. Reducing the amount of motor vehicle travel is the most effective method of reducing transport emissions, and will support the economic, environmental and social outcomes in the Community Strategic Plan - Delivering Sustainable Sydney 2030-2050. Reducing emissions from motor vehicles completes the transition to net zero emissions.
4. The City's particular context is relevant in developing the Strategy and Action Plan. The land use and transport system create greater opportunity to reduce vehicle travel/emissions compared to the rest of Greater Sydney. The City of Sydney has higher density development and crowded public domain; heritage areas with little off-street parking; areas of intensive planned commercial and residential growth which can be made "electric vehicle ready"; relatively high accessibility by public transport, cycling and walking; significant proportion of households without a motor vehicle; and high impact of bus, freight/servicing and point to point fleets.
5. Factors such as availability of off-street parking and relatively low uptake of electric vehicles to date create different future needs and opportunities for an electrified transport system, compared to global cities such as Paris and London. In developing the draft Strategy and Action Plan, the City looked to these places to understand best practice, and then applied it to the City of Sydney's context.
6. The City of Sydney has a long history of actions to reduce transport emissions. The City continues to deliver a comprehensive cycleway network, and to improve streets for walking and public life. The City's planning system supports reduced car ownership and use through maximum (not minimum) parking rates in new development. The City has Australia's largest car sharing system. The City advocates successfully for public transport improvements, including: new metro lines, light rail, accessibility improvements to existing rail stations, and improved bus and ferry services.
7. The City introduced electric vehicle charging in its two major public car parks (Goulburn Street and King Cross). The City was also one of the first organisations to begin converting its fleet to zero emissions.
8. Equity was an important consideration in developing the Strategy and Action Plan. Equity in the electrification of transport within the city includes equity of access to electric vehicles and to electric vehicle charging. It also includes the broader aspects of equity of access to electric public transport, to public space, and to the equity aspects of imposing the ongoing costs of car ownership on residents, and of using public resources to support owners of electric cars. The Strategy and Action Plan aims to balance these competing needs, with a focus on equitable solutions for the community, residents, businesses, and visitors.

9. The City has worked with Ausgrid and its commercial charging partner EVX, to trial a pole-based charger in two dedicated spaces on St Johns Road, Glebe. This trial is ongoing. The City is working with Ausgrid to identify suitable locations for additional trials, in areas such as Pymont and Millers Point.
10. In early 2023, the Australian Government released a consultation paper on fuel efficiency standards with the aim of introducing standards for new cars by the end of 2023. The City will continue to advocate for broader emissions standards, including for last mile delivery vehicles. Complimentary targets and incentives on par with the USA and Europe are also required to reduce emissions from transport.
11. The then NSW Government enacted electric vehicle charging provisions in State Environmental Planning Policy (Transport and Infrastructure) 2021 in early 2023. One of the features is to enable residents without off-street parking to install their own charging infrastructure in the public domain, outside their homes, with a development application. The City is exploring the planning and development issues resulting from this. Such charging infrastructure will be subject to the City's current approach to current on-street parking, and the City will not reserve kerbside parking for private vehicle chargers.
12. The Strategy and Action Plan has key approaches, and 21 related actions including City-controlled actions, proposed collaborations with others including NSW Government, and direct advocacy to the Australian and NSW Governments.
13. The approaches and actions (summary description) are:
  - (a) creating a city for walking, cycling and public transport:
    - (i) Action 1 - reduce vehicle kilometres travelled by creating a city for walking, cycling and public transport;
  - (b) government pricing and policy that prioritises electric vehicles:
    - (i) Action 2 - Australian Government to raise fuel and vehicle emissions standards to make electric vehicles more affordable and available compared to internal combustion;
    - (ii) Action 3 - Australian Government to develop transition plan for electric vehicles by 2030 and electricity grid by 2035;
    - (iii) Action 4 - NSW Government to explore pricing mechanisms to speed uptake of electric vehicles accessing the city centre;
    - (iv) Action 5 - Australian and NSW Governments to offer subsidies based on fleet type i.e. not just private electric motor vehicles;
  - (c) a transition that focusses on high impact transport fleets:
    - (i) Action 6 - the City to maximise the electrification of its fleet;
    - (ii) Action 7 - the City to encourage the use of electric vehicles wherever possible through its procurement processes;

- (iii) Action 8 - the City to advocate to the NSW and Federal Governments to provide grants to facilitate local governments to upgrade the electric vehicle capabilities of their depots;
  - (iv) Action 9 - NSW Government to accelerate electrification of bus depots and fleets serving the City of Sydney;
  - (v) Action 10 - NSW Government to accelerate transition of service and delivery fleets;
  - (vi) Action 11 - the City to work with car share providers to electrify their fleet by 2030;
  - (vii) Action 12 - the NSW Government to accelerate transition of taxi and other point to point fleets;
- (d) supporting (and, in limited circumstances, providing) publicly accessible charging approaches that limit public domain impacts:
- (i) Action 13 - the City to prepare draft planning controls in the Development Control Plan 2012 requiring new development to be "electric vehicle ready";
  - (ii) Action 14 - the City to work with governments, industry, peak bodies and strata communities to support electrification of buildings and upgrades to enable onsite electric vehicle charging;
  - (iii) Action 15 - the City to integrate electric vehicle charging feasibility assessments as part of net zero plans and energy audits in the City's Green Building Grants, and provide guidance on electric vehicle charging through our energy actions plans in the Smart Green Apartments program;
  - (iv) Action 16 - NSW Government to support the provision of commercial public off-street charging, including transition of service stations;
  - (v) Action 17 – encourage public charging in car parks and service stations;
  - (vi) Action 18 - NSW Government to ensure public have information about charging locations;
  - (vii) Action 19 - the City to install additional publicly accessible charging in its public off-street car parks where feasible;
  - (viii) Action 20 - the City to work with private sector providers to trial paid on-street publicly accessible charging in residential areas with constrained private charging opportunities;
  - (ix) Action 21 - the City to investigate charging models for areas with constrained charging options, to be implemented only if required, and to only supplement other public charging offers; be based on an evidenced need; community acceptance; be cost neutral to the City; be based on available or advanced technology; and avoid negative impacts on the public domain including footpaths and planting.

## Key Implications

### Strategic Alignment - Sustainable Sydney 2030-2050 Continuing the Vision

14. Sustainable Sydney 2030-2050 Continuing the Vision renews the communities' vision for the sustainable development of the city to 2050. It includes 10 strategic directions to guide the future of the city, as well as 10 targets against which to measure progress. This plan is aligned with the following strategic directions and objectives:
  - (a) Direction 2 - A leading environmental performer - reducing transport emissions is a critical component in addressing the climate emergency and achieving net zero emissions by 2035.
  - (b) Direction 3 - Public places for all - the need for improved public places is a key consideration in developing the framework for future motor vehicle charging, in which most charging should occur off-street.
  - (c) Direction 5 - A city for walking, cycling and public transport - reducing the amount of motor vehicle travel is the most effective method of reducing transport sector emissions. The transition to an electrified transport system should occur within the City's broader framework for managing access and transport.
  - (d) Direction 6 - An equitable and inclusive city - the draft Strategy and Action Plan addresses the potential impacts of transport system electrification, particularly in the short-term when the price of electric vehicles is significantly higher than internal combustion engine vehicle options.

### Organisational Impact

15. The Strategy and Action Plan builds on the City's existing programs and resources. There will be some minor changes to focus for business units, including City Access and Transport, Sustainability, Sustainability Programs and Parking and Fleet Services.

### Risks

16. A key risk is the lack of Australian experience and guidance on this issue. Electrification of transport is a complex and fast evolving area and requires a systems view. The key considerations are base assumptions associated with cost, technology and fleet transition, which contribute to the demand for vehicle charging. To mitigate this risk, the City commissioned specialist technical consultants SGS Economics and Planning and Kinesis to develop a robust evidence base to inform the Strategy and Action Plan. The consultants also reviewed international experience and practise on this issue. Their findings and insights are summarised in the technical report provided to Council in February 2023, which was provided to the community as part of the exhibition process.
17. A second key risk is the unpredictability of the fleet transition to electric vehicles. This rate of transition constitutes a key base assumption that informs multiple aspects of the draft Strategy and Action Plan, especially demand for different types of vehicle charging. The factors determining the rate of transition are outside the City's control. Current uptake of electric vehicles is relatively slow, but there are signs it could be beginning to accelerate, as vehicles become slightly more affordable. Rather than just project this forward, the City has mitigated the risk that it accelerates (due to Australian or NSW Government policy changes) by ensuring that the Strategy and Action Plan will accommodate a range of 45 per cent (BAU) to 100 per cent fleet electrification by 2035 (while aiming for 100 per cent).

18. A third key risk is that the City, in providing even limited public charging, could impede the development of market-based public charging. The City has mitigated this risk by designing proposed City charging initiatives to be limited, targeted, responsive to specific short-term needs or for particular locations where it may be harder to attract commercial charging options, and are not intended to be "scaled up".
19. The proposed deep-dive research that supports Action 14 (supporting charging in existing buildings) will provide more analysis into any risks associated with activities such as installing charging into basements of existing apartment buildings.
20. The City will also follow rigorous risk assessment processes for any on-street charging, including trials of technology such as pole-based charging. This will address the potential for incidents such as shortages and fires. It will also assess trip hazards for users and non-users. This assessment will allow the City to manage its risk and its insurance liabilities.

### **Social / Cultural / Community**

21. Affordability is a key aspect of the access and transport system. For the short-medium term, electric vehicles are likely to be owned (or leased) by higher income households or business. To ensure equitable outcomes for the City's community, the Strategy and Action Plan emphasise the importance of creating the City for walking, cycling and public transport to maximise the affordable options for access.
22. In addition, in the short-medium term, the City is not looking to preference electric vehicles or limit internal combustion vehicles in parking or road space allocation, other than when they are being charged.
23. Motor vehicle access including car sharing continues to support some of the access needs for some residents and businesses. The transition to transport system electrification will occur within the City's broader framework for access and transport. The City will maintain access arrangements that support inclusion, such as mobility parking.

### **Environmental**

24. Reducing transport sector emissions in the City of Sydney is a key challenge in delivering net zero emissions by 2035. The transport sector contributes between 15 to 20 per cent of emissions in the City of Sydney, and the relative proportion will grow as emissions reduce from other sources such as residential and commercial buildings.

### **Economic**

25. The City's approach to electrification supports the broader economic outcomes in Sustainable Sydney 2030-2050 Continuing the Vision. While advocating for the early transition of vital fleets such as freight/servicing and point-to-point, the City recognises the important functions these fleets perform.

## Financial Implications

26. The City is developing proposals for funding to accelerate the leadership actions detailed above:
  - (a) supporting electric vehicle charging in existing buildings, with an extensive deep dive research into the opportunities and constraints of different types of strata apartment buildings; and
  - (b) preparing our depots for electrification of transport, to support further electrification of the City of Sydney's fleet.
27. Funding for these proposals has been sought in the draft 2023/24 Operating Budget, the subject of a separate report in the current Council reporting cycle.
28. Actions 1 to 5, 7 to 14 and 16 to 18 will have no direct financial impact as City staff can implement within existing resourcing.
29. Action 6 relates to maximising the electrification of the City's passenger and heavy vehicles and plant. The City seeks value for money in its use of the community's resources. Electric vehicles are currently significantly more costly to purchase than internal combustion engine comparable vehicles. Any additional costs will be considered as part of plant and asset budget submissions incorporated into future iterations of the City's Long Term Financial Plan and subject to Council approval.
30. Actions 19 to 21 relate to small-scale City-led approaches to public charging, including in its off-street car parks. The City will design any provision or facilitation of public charging (Actions 19, 20 and 21) with the aim of being revenue neutral. The emerging charging industry includes third party charging operators who could consider providing charging with no cost to the City (customers would pay the operator directly for the charge).

## Relevant Legislation

31. The NSW Environmental Planning and Assessment Act 1979 provides the framework for any planning control changes to facilitate electric vehicle charging in new private and public buildings, and commercial car parks.
32. The implications of changes in early 2023 to the State Environmental Planning Policy (Transport and Infrastructure) 2021 are being explored.
33. Any kerbside changes to provide for electric vehicle charging will be consistent with the NSW Roads Act 1993, Road Rules 2014 and Road Transport (General) Regulation 2021.
34. Local Government Act 1993.
35. Civil Liability Act 2002.

## Critical Dates / Time Frames

36. The City of Sydney has adopted a net- zero emissions target by 2035.



## Options

37. Staff considered the option of not developing an Electrification of Transport in the City - Strategy and Action Plan, as systems for vehicle standards, purchases and refuelling (charging) are not normal local government business. The City discounted this option as residents, businesses, property owners and charging service providers are seeking guidance and direction on a range of aspects associated with electrification of transport and are key partners in achieving net zero emissions by 2035.
38. In response to the community call for guidance and action, City staff considered the option of developing an Electrification of Transport in the City - Strategy and Action Plan that moves away from interim positions - i.e., the City taking responsibility for electric vehicle charging, providing significant on-street electric vehicle charging. The City discarded this option as it is not scalable within the City's limited resources, creates significant risk and would distort the development of a commercial charging system.
39. The City's eventual preferred option considered different scenarios for transition to electrification as part of developing the Strategy and Action Plan. These are outlined in the Technical Report. The proposed role for the City is one of targeted leadership.

## Public Consultation

40. On 20 February 2023, Council approved public exhibition of the Draft Strategy and Action Plan for six weeks to allow an opportunity for the community to provide feedback. The exhibition closed in early April.
41. There were more than 900 page views on Sydney Your Say. The Draft Strategy and Action Plan was available for download on the City of Sydney website. It was available as an accessible PDF. There were more than 250 document downloads.
42. 162 people completed the online survey. The City also received 17 submissions from individuals, community groups and businesses.
43. Feedback provided indicated strong support for the plan and the City's proposed approach to transport system electrification. The feedback highlighted the following key areas:
  - (a) support for the emphasis on emissions reduction by reducing motor vehicle travel (while maintaining access). The City's draft Access Strategy and Action Plan will provide the framework for this, building on the achievements to date and the approaches and concepts in Sustainable Sydney 2030-2050 Continuing the Vision.
  - (b) support for limiting the impact on public domain of any public charging. The City is working to trial approaches consistent with this.
  - (c) recognition of the opportunity and challenges of retrofitting charging into strata apartment buildings. This is a key action area for the City, with a proposed deep dive research project in 2023/24 involving exploration of issues and engagement with strata communities.

- (d) concern from residents of particular locations that there are some areas where public charging opportunities are likely to be limited without direct intervention. The City is exploring opportunities for trialling pole-based charging in locations such as Pymont and Millers Point.
  - (e) concern from some organisations and individuals that proposed actions will not be adequate to support Net Zero Emissions by 2035. The City will implement the actions in the Action Plan, and the periodic review of the Strategy and Action Plan will identify if further actions are required to support Net Zero Emissions.
  - (f) a concern that the City's analysis of potential future public charging needs represents or could translate into a fixed or capped supply of public charging. The City has clarified this issue in the final Strategy and Action Plan. Most of the public charging will be provided by commercial providers, who will react to projections of demand, may seek to lead demand with early provision, and who will compete with each other for market share.
44. Based on the nature of the feedback provided, the final Strategy and Action Plan requires only minor amendments to clarify the City's plans in several specific areas.
45. Attachment A identifies the proposed changes to the exhibited draft, with key amendments including:
- (a) At Section 1.1, inclusion of updated information of the full life-cycle emissions of electric vehicles, compared to internal combustion engine vehicles
  - (b) At Section 1.4, inclusion of material related to the Australian Government's 2023 Discussion Paper on fuel efficiency standards; and the former NSW Government's changes in early 2023 to the Transport and Infrastructure State Environmental Planning Policy 2021
  - (c) At Section 1.5, confirmation that private electric vehicle charging in existing buildings is best pursued as part of a broader electrification of buildings; and that the City will focus any on-street charging approaches at areas in which residents have limited access to onsite parking, and fewer options for other public charging
  - (d) At Section 1.5 (Key findings from the technical analysis and modelling highlight box), clarification that the City's estimate of future public charging needs will not act as a cap on provision of such charging (primarily by commercial providers)
  - (e) At Section 2.1, confirmation that the City will only reserve kerbside space for any on-street public charging, not private charging or general electric vehicle parking
  - (f) At Section 2.3, confirmation that the Car Sharing Policy will be the mechanism for formalising fleet transition targets for car share operators, and acknowledging the potential for pole-based charging for car share vehicles
  - (g) At Section 2.4, inclusion of additional context about the opportunities and challenges in different areas of the City of Sydney, and reference to the City's proposed deep-dive research project as part of implementing Action 14. Also amendment to Action 14 to make clearer the stakeholders involved in strata, and to reinforce that broader electrification of buildings is a key pathway to enabling onsite electric vehicle charging in them.

46. Attachment B is a design version showing the proposed final Strategy and Action Plan, based on the amendments in Attachment A.
47. A summary of all feedback received and the City's response is provided at Attachment C.

**KIM WOODBURY**

Chief Operations Officer

Peter Warrington, Transport Policy Manager

# **Attachment A**

**Marked-up Version – Electrification of  
Transport in the City Strategy and Action  
Plan**

# Electrification of Transport in the City

## Strategy and Action Plan



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SGS Economics and Planning with Kinesis undertook modelling and technical analysis for the development of this strategy and action plan.

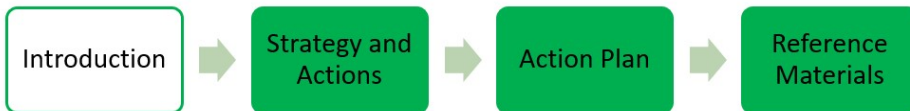
*Electrification of Transport in the City Strategy and Action Plan Technical Report 2022*

This is available at [\[link\]](#)

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# 1. Introduction



## 1.1. A strategy and action plan to reduce transport-related emissions by electrifying transport in the city

The *Electrification of Transport in the City: Strategy and action plan* ('strategy and action plan') outlines the approach of the City of Sydney (the 'City') for electrification of transport fleets within our local government area ('local area', 'area').

This strategy and action plan identifies key areas of action to electrify vehicle (EV) fleets in the immediate to short term and that are within the City's control or that the City can aim to influence. The strategy aims at 2035, with the action plan for today and for the next five years.

### Why we need this strategy and action plan

The City of Sydney is expected to grow – both in residents and in people that visit the city to work, study and play. Transport currently accounts for some 20 per cent of greenhouse gas emissions in the local area and is projected to increase as a proportion of overall emissions. Without intervention, we are not going to be able to sufficiently reduce our transport-related emissions.

We are committed to being a net-zero city by 2035. Transformation to net-zero emissions within our area by 2035 will require a significant shift in transport to walking, cycling and public transport, as well as the electrification of vehicle fleets and greening of the grid.

Our community has told us they want to respond to climate change. They want a city with improved air quality, and reduced emissions including carbon dioxide (CO<sub>2</sub>), NO<sub>x</sub> and noise, especially in high density and high activity areas. They want fewer cars and less congestion – and for vehicles to be electric.<sup>1</sup> They want more public transport, walking and cycling. We have committed to this in *Sustainable Sydney 2030–2050 – Continuing the Vision* and in the *Community Strategic Plan – Delivering Sustainable Sydney 2030–2050*.

### Vehicle electrification is only part of the solution

These commitments and the city's anticipated growth require a shift away from private vehicles, which have high emissions and require significant space for movement and for parking when not in use. The biggest impact we can have to reduce transport emissions is to facilitate a shift to walking, cycling and public transport.

However, not all trips can be taken this way. Some people are not able to walk, ride a bike or use public transport easily or for all trips. Much servicing and freight activity will continue to occur via

<sup>1</sup> City of Sydney (2022). *Sustainable Sydney 2030–2050 – Continuing the Vision*, available at <https://www.cityofsydney.nsw.gov.au/sustainable-sydney-2030-2050> and City of Sydney (2022). *Community Strategic Plan – Delivering Sustainable Sydney 2030–2050*, available at <https://www.cityofsydney.nsw.gov.au/strategies-action-plans/community-strategic-plan>.

## Strategy and Action Plan

vehicles. The electrification of vehicles, particularly high-impact fleets such as delivery and service (commercial), taxis, point-to-point (ride-share services) and car share vehicles, along with private vehicles, is necessary to reduce transport emissions. There are also additional benefits of reduced noise, localised air pollution and running costs. The average NSW driver will save about \$1,000 per year in running costs by switching to an electric vehicle.<sup>2</sup>

~~While electric vehicles do not produce tailpipe emissions that create harmful local air pollution, all vehicles, electric or otherwise, contribute to emissions associated with brake usage, tyre wear and roads. There are also carbon emissions embedded in the production of electric vehicles and components such as batteries. Although the overall life-cycle emissions of electric vehicles may be less than internal combustion engine vehicles, the total environmental impact of car production and usage means that the uptake of electric vehicles should not be pursued above the City's ongoing goals to reduce car use and prioritise walking, cycling and public transport.~~

~~Electric vehicles have zero air quality pollution or greenhouse gas 'tailpipe' emissions in operation. However, greenhouse gas emissions are produced in the extraction, processing, and transport of resources to manufacture and power vehicles, known as 'well-to-wheel' or 'life cycle' emissions.~~

~~The energy and minerals used to make electric vehicles is often taken out of context. The International Energy Agency<sup>3</sup> shows comparative life-cycle greenhouse gas emissions of a mid-size battery electric vehicle is less than half of an equivalent internal combustion engine vehicle.~~

~~An electric vehicle will be lower life-cycle emissions to a fuel alternative after around a year or two of driving<sup>4</sup>. The emissions associated with manufacturing and using electric vehicles will continue to decrease as more renewable electricity comes online. The Australian Government expects the national electricity grid to be 82% renewable by 2030.~~

~~There are also innovations underway in battery technologies that reduce or avoid the need for precious minerals, expand the energy density (which means smaller batteries with more power), and improve recyclability. The commonwealth, state governments, and the electric vehicle industry must ensure that recyclability and circular economy systems are central as markets expand.~~

~~The energy produced for electric vehicles also needs to be considered. If charged by standard grid electricity, which is today mainly coal fired, there will be attributable carbon emissions. An electric vehicle is only low-carbon if charged with renewable electricity.<sup>5</sup> The NSW electricity grid is on track to reach at least 60 per cent renewables by 2030.~~

~~Although the overall life-cycle emissions of electric vehicles may be less than internal combustion engine vehicles, the total environmental impact of car production and usage means that the uptake of electric vehicles should not be pursued above the City's ongoing goals to reduce car use and prioritise walking, cycling and public transport.~~

Private vehicles, electric or otherwise, are inefficient in space. Charging infrastructure for these vehicles cannot be at the detriment of the public realm.

Electric public transport and reducing emissions associated with public transport activities are an essential part of this transition.

<sup>2</sup> NSW Government (2021). *NSW Electric Vehicle Strategy*. Environment, Energy and Science and Department of Planning, Industry and Environment. Available at <https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Climate-change/nsw-electric-vehicle-strategy-210225.pdf>.

<sup>3</sup> <https://www.iea.org/data-and-statistics/charts/comparative-life-cycle-greenhouse-gas-emissions-of-a-mid-size-bev-and-ice-vehicle>

<sup>4</sup> <https://www.reuters.com/business/autos-transportation/when-do-electric-vehicles-become-cleaner-than-gasoline-cars-2021-06-29>

<sup>5</sup> City of Sydney (2021). *Environmental Strategy 2021–2025*. Available at <https://www.cityofsydney.nsw.gov.au/strategies-action-plans/environmental-strategy>.

## Strategy and Action Plan

### The role of the City

This strategy and action plan supports the transition to electric vehicles in the immediate future, within the framework of the City's aspirations to be "a city for walking, cycling and public transport" (the strategic framework is outlined in Section 1.8).

The City needs to develop a balanced approach to any role in organising and supplying charging opportunities, infrastructure and power supply for the transport fleets in the local area. Historically, the City does not take responsibility for refuelling internal combustion engine transport fleets in our area. There is a role to facilitate charging given the City's strong support for electrification of transport – and to support our advocacy for it to happen well in advance of the aspirations of other levels of government in Australia – but the City must also consider the appropriate role of local government in the transition (Section 1.4) and the competing demands for the City's funds and resources.

To manage this balance, the City is facilitating and enabling the transition to electric vehicles in a way that respects local context, urban form, residents, visitors, businesses, and is embedded within the longer-term strategic vision and objectives for the city.

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## 1.2. Aim of the strategy and action plan

We are aiming for all vehicles that operate in our local government area to be zero emissions (tailpipe and greenhouse gas) by 2035, as part of achieving net-zero emissions.

The City's research indicates the current biggest barriers to having an electric vehicle are availability and affordability, especially for commercial vehicles.

The NSW Government estimates that "currently, the average EV [Electric Vehicle] sold into the NSW market is about \$28,000 more expensive than the average petrol or diesel car."<sup>6</sup> Potential factors for the price gap include the relatively small size of the Australian market compared to other markets such as Asia and Europe, and to the initial higher cost of new technology such as batteries. The cost of electric vehicles in the medium to longer term has the potential to be cheaper than petrol and diesel vehicles if: battery costs decrease with technology and scale; and capital costs decrease with increased scale of production particularly as electric vehicles are more standard and have significantly fewer parts. Maintenance and running costs are already lower for electric vehicles with fuel costing about a third of petrol/diesel vehicles.

With the City aiming for all vehicles and public transport operating in its area to be zero emissions by 2035, decisive action by the Australian Government is needed for 100 per cent of vehicle sales to be zero emissions by 2030. This will require the right Australian and NSW tax and policy frameworks to enable this to happen, much of which is outside of the City's control.

Fleet turnover will then take Australia towards a fully zero-emissions fleet in the next decade.

This strategy and action plan is necessary to identify areas where the City can facilitate this transition. The main way is to ensure sufficient charging opportunities – from various sources and for various fleets – to enable the transition to fleet electrification to proceed smoothly.

<sup>6</sup> NSW Government (2021). *NSW Electric Vehicle Strategy*. Environment, Energy and Science and Department of Planning, Industry and Environment. P.14. Available at <https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Climate-change/nsw-electric-vehicle-strategy-210225.pdf>.

### 1.3. Principles for the equitable electrification of transport in the city

The transition to electric vehicles needs to be equitable and inclusive, supporting access to electric vehicle fleets for those who need them without entrenching the economic, social and place<sup>7</sup> costs of private vehicles.

We have a responsibility and opportunity to shape and prepare future actions to support broader liveability, sustainability, productivity and inclusion outcomes, while being proactive and action focused.

We encourage the uptake of electrification in transport fleets but not at the detriment to inclusion, access and quality of place, and access to walking, cycling and public transport infrastructure.

Equity in the electrification of transport within the city includes equity of access to electric vehicles and to electric vehicle charging, as well as the broader aspects of equity of access to electric public transport and to public space. It also encompasses the equity aspects of imposing the ongoing costs of car ownership on residents, and of using public resources to support owners of electric cars. This strategy aims to balance these competing needs, with a focus on equitable solutions for the community, residents, businesses and visitors. The principles guiding this strategy and action plan are shown in Box 1.

<sup>7</sup> Place is used in this context to refer to the quality, design and availability of the public space and public domain provided, along with the broader attributes of a place such as sense of place.

Box 1: Principles for the electrification of transport in the city

**We will be guided by the overall City strategy to encourage a shift in modes of transportation**

The City's *Sustainable Sydney 2030–2050 – Continuing the Vision* and supporting plans and strategies outline the way we will work to reorganise the planning and operation of transport systems. This will reduce emissions by reducing the amount of driving and creating an improved baseline for electrification to take us to net zero.

**Protect the public domain – public space is not the place for fuelling vehicles**

The city's public places are vital to achieving our *Sustainable Sydney 2030–2050 – Continuing the Vision* goals. Public street space is too important to allocate for fuelling vehicles – with petrol or electricity.

**Go early, but take the community with us**

The City has a strong commitment to net-zero emissions by 2035. We want to get there in ways that the community will support and remain committed to informing and engaging our community.

**Strong leadership**

The City's aim has always been to lead, serve and govern well. True leadership in this area involves understanding complex issues and making decisions based on the evidence. It also means identifying opportunities and using all levers, including advocacy, to influence the Australian electric vehicle policy framework.

**Focus on high-exposure fleets**

People on the city's busy streets are exposed to emissions, noise and pollution. Large fleets like buses and point-to-point vehicles account for a high proportion of vehicle kilometres travelled in our area and are responsible for a large amount of emissions; they also have the scale and commercial opportunity to transition to zero emissions quickly.

**Ensure new development is ready for electric vehicles**

Combining parking and vehicle charging makes sense. Many new commercial and residential buildings are being developed. It makes sense to use the planning system so building parking is "EV ready" from day one.

**Be inclusive, no special access for electric vehicles except for charging**

As electric vehicles are currently very expensive, more affluent people will be the ones who drive most of them. Until costs become more reasonable, we will not worsen inequity by preferencing electric vehicles on roads or at the kerbside, except to provide access to [the limited amount of](#) public charging.

**Expect the market to do the heavy lifting – vehicle refuelling is not a community obligation**

Providing fuel to private vehicles has always been a commercial undertaking. Providing electricity for charging should be the same, a new market opportunity rather than an obligation of any level of government.

**Aspire for multiple options to protect choice, build resilience and redundancy**

The future of charging is difficult to predict, with commercial approaches and technology evolving rapidly. The system will develop with the most choice – and the most resilience and capacity – if multiple options for publicly accessible off-street charging exist.

## 1.4. Roles and responsibilities in the electrification of transport fleets

**The City** does not control many aspects related to the electrification of transport fleets, including transport sector emissions, fleet turnover and low-emission vehicle availability and uptake.

We do have roles in the planning and development in our area; working with and providing guidance to residents and businesses; implementing changes to our streets and roads (working with the NSW Government); and in managing and enforcing kerbside arrangements such as parking.

We also have a leadership role and in influencing and working proactively with the Australian and NSW Governments.

**The Australian Government** is responsible for developing a national plan for zero-emission vehicles. It controls industry development and import systems, vehicle standards, research and development, and taxation. It is responsible for the framework for national approaches to electric vehicle charging, including direct investment in the national highways. It is responsible for national resilience, on issues such as fuel security and would have a lead role in introducing vehicle fuel efficiency standards. The Australian Government has announced forthcoming policies to support the uptake of electric vehicles in Australia. These are in development and evolving as this strategy and action plan is being adopted. ~~As of June 2022, announcements~~ include the development of a national electric vehicle strategy, policies to make electric vehicles more affordable by reducing tax, a fast-charging network with chargers every 150 kilometres on highways, the conversion of the Commonwealth's fleet to 75 per cent no-emission vehicles by 2025, and a plan to support low-emission freight vehicles. [In early 2023 the Australian Government released a consultation paper on fuel efficiency standards with the aim of introducing standards for new cars by the end of 2023. The City will continue to advocate for broader emissions standards, including for last mile delivery vehicles. Complimentary targets and incentives on par with the USA and Europe are also required to reduce emissions from transport. The National Electric Vehicle Strategy released in 2023 also outlines that the Australian Government is consulting to consider the case for mandatory Acoustic Vehicle Alerting Systems for light electric vehicles in Australia, to reduce potential pedestrian collisions.](#)

**The NSW Government** is responsible for road pricing and public transport and has the majority of control of traffic management. It is responsible for developing a network for vehicle charging stations in NSW. They have committed to net-zero emissions by 2050 and are developing programs to accelerate the uptake of zero-emission technologies, including providing electric vehicle charging at destinations and in areas with limited off-street parking. They have committed to co-fund 500 kerbside charge points to provide on-street charging in residential streets where private off-street parking is limited and to co-fund electrical upgrades in some 125 apartment buildings with more than 100 car parking spaces. They are providing grants for fast charging to accelerate the rollout of charging stations and for providing more charging in high-density areas with the aim of having around 500 fast EV charging bays (at 250 stations) across NSW. The first grant round (of three) was awarded in late 2022 for 86 stations, including two stations in our area (Alexandria and Eveleigh).<sup>8</sup> Each station will have between four and 15 bays, with a minimum of two ultra-fast charging bays and two fast charging bays. The NSW Government is also committed to electrify its buses and fleet vehicles – contributing to an important second-hand market.

[The NSW Government enacted electric vehicle charging provisions in State Environmental Planning Policy \(Transport and Infrastructure\) 2021 in early 2023. One of the features is to enable residents without off-street parking to install their own charging infrastructure in the public domain, outside their homes, with a development application. The City is exploring the planning and](#)

<sup>8</sup> See NSW Government Fast Charging Master Plan Map at <https://www.energy.nsw.gov.au/business-and-industry/programs-grants-and-schemes/electric-vehicles/Fast-charging-master-plan#master-plan-map>

## Strategy and Action Plan

development issues resulting from this. Such charging infrastructure will be subject to the City's current approach to on-street parking, and the City will not reserve kerbside parking for private vehicle chargers.

The City is partnering with the NSW Government to build a bicycle network and reallocate road and kerbside road space for walking, cycling and public transport. We will continue to advocate for public transport powered by renewable energy and to support public domain improvements around public transport stations and stops.

### 1.5. A strategy and action plan embedded in our local context

This strategy and action plan is designed to suit our local context. The city has a mix of housing and land-use types; good walking, cycling and public transport networks; an extensive car share network; and relatively low private car ownership.

The plan also reflects the distinctive village areas that make up the city. The availability of different charging types to facilitate the uptake of electric vehicle fleets will be different for different fleets and in different parts of the city.

#### Contexts and needs within our area for electric vehicle charging

This strategy identifies the following primary contexts and needs within our area for EV charging:

1. *Charging for public transport (buses).* This will occur at depots, largely outside the local area, and is the responsibility of the NSW Government. This will require coordination between the bus operators and the grid operators.
2. *Charging for commercial vehicles.* This will occur at depots and other origins, largely outside the local area, or in the southern industrial and urban services lands within the local area. There may be some need for destination or 'on-route' charging. This should occur off-street such as in publicly accessible charging facilities and destination parking.
3. *Charging for taxis, car share and point-to-point vehicles.* The operators of these fleets are responsible for the charging of these fleets. Indications are that they will transition swiftly, when electric vehicles become more available, due to the savings in running costs.<sup>9</sup> The City has a role to facilitate this.
4. *Charging for private vehicles, residents and visitors:*
  - Publicly accessible charging off-street. This is already occurring in our area, such as charging at retail destinations and hotels, within car parks (including two City of Sydney car parks) and at charging facilities such as those provided for by the NSW Government grants, specific vehicles and in the near future at service stations.
  - Private charging off-street. This is already occurring in residential and commercial facilities. There is a large role for the City to play in using planning controls to make sure that new developments are "EV ready", and in assisting existing developments to electrify their buildings and provide charging as appropriate. Many of our residents have access to on-site parking, either a garage, driveway or dedicated parking space, and will charge there for the reasons outlined in Section 1.3. Commercial facilities such as offices are providing electric vehicle charging for employees. This can be facilitated

<sup>9</sup> The NSW Government estimates that "a taxi driver can save up to around \$4500 per year by switching from a hybrid petrol car to a battery EV or even more if switching from a traditional petrol vehicle" (p. 10). NSW Government (2021). *NSW Electric Vehicle Strategy*. Environment, Energy and Science and Department of Planning, Industry and Environment. Available at <https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Climate-change/nsw-electric-vehicle-strategy-210225.pdf>.

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through the planning system to ensure new office buildings provide charging facilities in any car parking provided.

- **Charging for residents without on-site parking**, or easy access to off-street parking or publicly accessible off-street charging. The City has a role to play in facilitating these residents to transition to electric vehicles and can play a short-term, leadership role, **including by focussing initiatives such as the trial of pole-based charging to these areas.**

Different types, speeds and charging times of current charging technology are provided in **Error! Reference source not found.** (page 35).

Modelling of use and uptake of electric vehicles in our area demonstrated that most people will be able to charge off-street at their homes (in their driveway, garage or in a dedicated parking bay), at work, at a depot or at another off-street charging location such as a publicly accessible charging facility.

### Current and planned electric vehicle charging in the local area

In June 2022, there were around 120 publicly accessible electric vehicle chargers in our area. The availability and type of chargers are rapidly increasing.

The NSW Government has committed to fund and co-fund publicly accessible charging, particularly in areas with lower amounts of off-street parking, at destinations and along key routes.<sup>10</sup> They announced two charging stations in our area (Alexandria and Eveleigh) as part of the first funding round in late 2022.<sup>11</sup> The NSW Government's target is "to add approximately 250 fast and ultra-fast charging stations in total across NSW, ensuring chargers are no more than 5km apart in metropolitan areas and no more than 100km apart on major roads and highways across NSW."<sup>12</sup> Retail locations, public car parks and companies such as NRMA and other private organisations are already providing charging.<sup>13</sup> Service stations are starting to provide electric vehicle charging. The NSW Government and Plug Share both provide maps of publicly accessible chargers.<sup>14</sup>

### What residential electric vehicle use are we planning for?

Box 2 provides a summary of the modelling undertaken by SGS Economics and Planning with Kinesis to support the development of this strategy and action plan.

There are relatively low levels of car ownership in our area; around 65,000 vehicles for around 246,300 residents in 2019.

About 37 per cent of households in the 2021 Census reported not owning a car. The proportion of residents that do not own a car in our area is increasing. While gross vehicle ownership is growing due to the growth in residents and jobs, it is not predicted to grow at the same rate as residential and commercial growth. This is due to the established nature of our city, our dense urban form of around 9,000 people per square kilometre,<sup>15</sup> walkable streets, access to public transport and our planning controls and parking policies. This liveable, dense and relatively connected urban form is suitable for car sharing for many households.

<sup>10</sup> See "NSW Government's Electric Vehicle Strategy" at <https://www.nsw.gov.au/initiative/nsw-governments-electric-vehicle-strategy> and "Electric vehicles" at <https://www.energysaver.nsw.gov.au/reducing-emissions-nsw/electric-vehicles>.

<sup>11</sup> See NSW Government Fast Charging Master Plan Map at <https://www.energy.nsw.gov.au/business-and-industry/programs-grants-and-schemes/electric-vehicles/Fast-charging-master-plan#master-plan-map>

<sup>12</sup> See NSW Government's update <https://www.nsw.gov.au/media-releases/supercharges-ev-rollout>

<sup>13</sup> The Electric Vehicle Council keeps a list of charging organisations. See <https://electricvehiclecouncil.com.au/about-ev-charger-map/>.

<sup>14</sup> See <https://www.transport.nsw.gov.au/projects/electric-vehicles/charging-an-electric-vehicle/charging-map> and <https://www.plugshare.com/>.

<sup>15</sup> This varies with Potts Point–Woolloomooloo having about 16,600 people/square kilometre and Pyrmont–Ultimo 16,500 people/square kilometre.



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Based on recent patterns in car ownership from 2016 to 2021 and on the projected growth in dwellings, residential car ownership in our area is predicted to grow from 65,000 vehicles in 2019 to around 71,000 vehicles in 2035. For the predicted 44 per cent increase in dwellings, there is only predicted to be an 8 per cent increase in private vehicles.

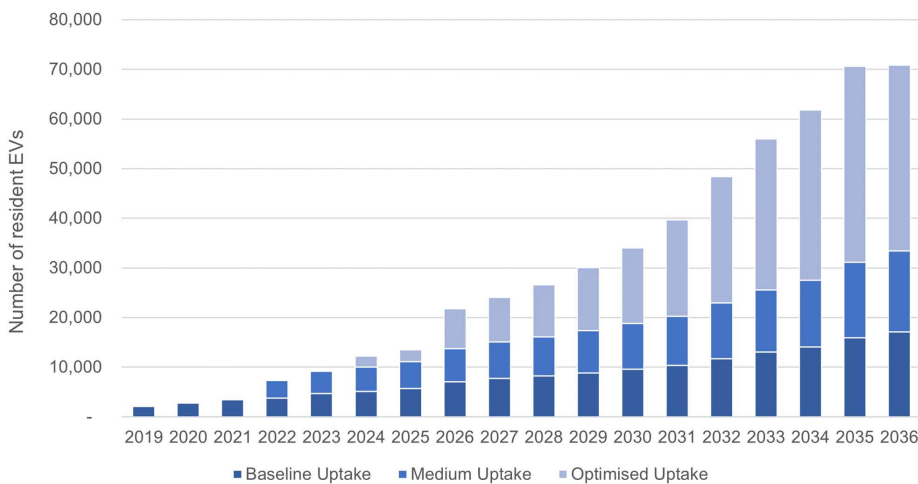
City residents currently drive on average around 9 to 10 kilometres per day. Increasing densification, mixed-use development and improvements to public transport, walking and cycling infrastructure and networks will result in this figure reducing over time.

In 2022, 5 per cent of vehicles in the local area are electric. Under natural uptake, based on current government settings, this will grow to around 45 per cent of vehicles by 2035. [Figure 1](#) provides the projected uptake of electric vehicles using the NSW Government policy and strategies as a baseline, the uptake under the NSW Government's and Federal Government's policies and an optimised uptake of 100 per cent of vehicles being electric.

This strategy and action plan aims to avoid any restrictions to City residents owning electric vehicles because of access to charging. This will require a flexible approach to respond to the rapidly evolving technology, availability and public policy environment.

We are planning for, and facilitating, a rapid uptake: aiming for 100 per cent of vehicles in our area to be electric by 2035.

Figure 1. Residential electric vehicle uptake forecasts [holding graphic].



Source: SGS Economics and Planning with Kinesis (2022) Electrification of Transport in the City Strategy Technical Report<sup>16</sup>

Most electric vehicles can drive at least 200 kilometres before needing to charge. Ranges are rapidly increasing, with newer models able to travel 400 kilometres on a single charge. The NSW Government provides a database on the range and charging needs of various available electric vehicles.<sup>17</sup>

<sup>16</sup> SGS Economics and Planning with Kinesis Technical Report, electric vehicle projects under three scenarios based on current NSW Government policy, current Federal Government policy and optimised for 100 per cent electric vehicle take up in the local area. Data sources used: ABS census, NSW Registrations, City of Sydney LSPS 2012, NSW Government electric vehicle strategy and the Labor Government's election policy announcements.

<sup>17</sup> See <https://www.transport.nsw.gov.au/projects/electric-vehicles/charging-an-electric-vehicle/range-and-charging>

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Most private vehicle drivers in the local area will need to charge once every two to four weeks, assuming an “empty to full” charge.

Many residents will charge at home at an off-street parking space. Car ownership and use varies across the City’s villages, and so does the availability of on-site parking at homes, including driveways, garages and dedicated parking spots. [Figure 2](#) provides the levels of residential car ownership and availability of residential off-street parking in the local area. [Source: SGS Economics and Planning with Kinesis \(2022\) Electrification of Transport in the City Strategy Technical Report](#)

[Figure 3](#) [Source: SGS Economics and Planning with Kinesis \(2022\) Electrification of Transport in the City Strategy Technical Report](#)

[Figure 3](#) demonstrates the variance in car ownership and off-street parking access across the city, with some areas having more off-street parking than vehicles and some areas having higher vehicle ownership than off-street parking (see Box 3.).

For those that charge at home, this would add around 10 per cent to the average household electricity consumption, equivalent to \$100 per year in electricity costs.

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### Box 2. Key findings from the technical analysis and modelling.

#### Key findings from the technical analysis and modelling

SGS Economics and Planning with Kinesis undertook best practice research, technical analysis and strategic insights to support the development of this strategy and action plan.

The technical analysis and modelling considered and forecast the uptake of electric vehicles for all vehicle fleets operating in the city for three different uptake scenarios: baseline (current policy settings), medium (more supportive policy settings based on the announced but not implemented Federal Government policy, noting that the 2022 Federal election occurred during the modelling) and optimised ('100 percent') uptake. For the three scenarios, by 2035:

- Baseline uptake: around 17,000 resident electric vehicles
- Medium uptake: around 31,000 resident electric vehicles
- Optimised uptake: around 71,000 resident electric vehicles.

Vehicle ownership and parking arrangements vary across the City of Sydney villages. Most residents will be able to charge at home at a dedicated parking spot, or at work. Some residents do not have access to a dedicated parking spot and will need to use publicly available charging to fuel their vehicle. Visitors and commercial vehicles may need to charge on route while they are in the city.

Based on the modelling, in 2035, the following publicly accessible chargers may be required:

- Baseline uptake: 50-100 publicly accessible chargers
- Medium uptake: 100-150 publicly accessible chargers
- Optimised uptake: 200-350 publicly accessible chargers.

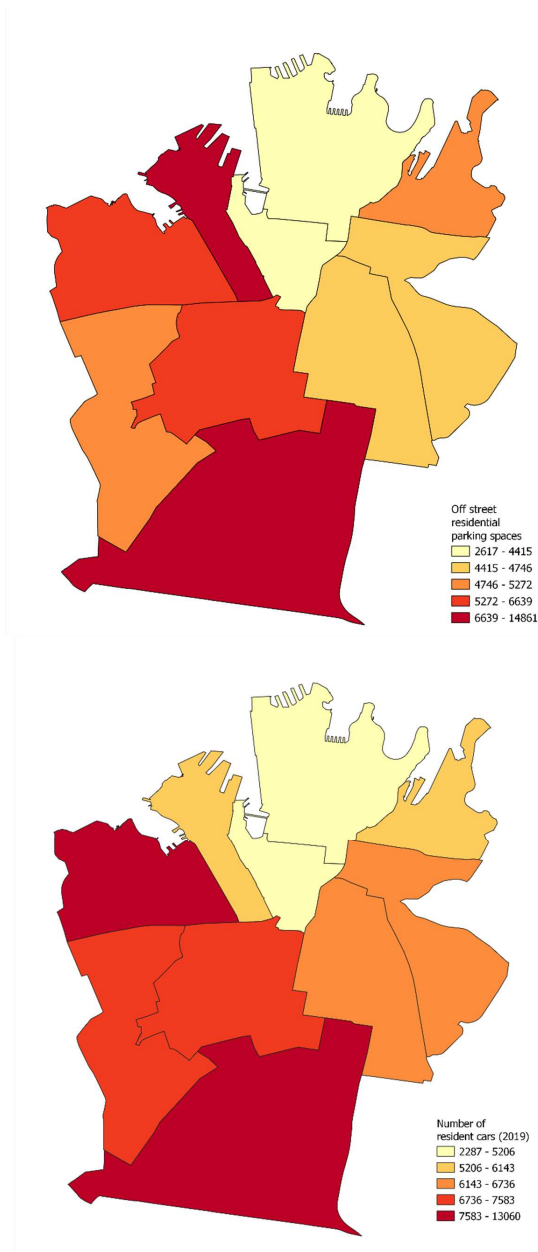
These numbers are an estimate only. They are not a cap, and there may be additional provision as commercial operators seek market share. The City will monitor the availability of public charging over the life of the Strategy and Action Plan to assess if further action is required to support the Net Zero transition.

In July 2022, there were around 120 publicly accessible chargers in the city, although they are not evenly distributed with most currently clustered in the central area.

The technical report is available [\[Link\]](#).

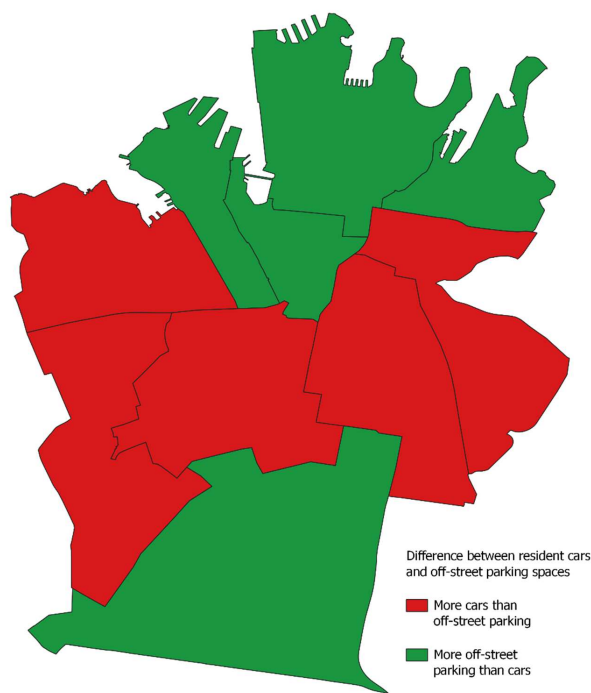
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Figure 2. Residential car ownership (top) and residential off-street car parking availability (bottom) [holding graphic]



Source: SGS Economics and Planning with Kinesis (2022) Electrification of Transport in the City Strategy Technical Report

Figure 3. Amount of off-street parking available compared to vehicle ownership [holding graphic]<sup>18</sup>



Source: SGS Economics and Planning with Kinesis (2022) Electrification of Transport in the City Strategy Technical Report

### Box 3. Residential parking in the city

#### Residential parking in the city

There are around 61,000 off-street residential car parking spaces across the city. However, availability and access to off-street parking is not evenly distributed across the local area due to different types of development. Some areas, such as Pymont and Green Square, have greater amounts of off-street parking than some areas with more terrace housing, such as Surry Hills, Glebe and Millers Point.

There are more than 45,000 on-street parking spaces across our local area, with a range of access including restricted, non-restricted, permit and non-permit. We issue some 13,400 residential permits for residents to access on-street parking. This equates to around 20 to 40 per cent of residents needing to park on the street in some areas such as Macleay Street and Woolloomooloo Village, Newtown and parts of Glebe and Surry Hills. However, not all residents that need to park on the street need a permit to do so as kerbside parking restrictions vary across the city, for example someone who drives to work outside of the City of Sydney could park over night if parking restrictions ended at 6pm and didn't start until 8am the next morning.

<sup>18</sup> SGS Economics and Planning with Kinesis. Areas with a deficit in off-street residential parking.

### What visitor electric vehicle use are we planning for?

In 2019, there were some 92,000 vehicle trips to work per day to the city. This is expected to grow to about 100,000 by 2035. Significant investments in public transport and cycling infrastructure are assisting this relatively low expected growth.

11 per cent of people drive to work in the city centre, however this varies across the local area, e.g. 57 per cent in the Green Square and City South village area. Most commuting-related vehicle trips are in the range of 5 to 10 kilometres. About 10 per cent of journey to work trips are attributed to local residents.

While there will be an additional 200,000 jobs in our area by 2036, the share of work related transport trips taken by driving to work is not predicted to increase accordingly, due to the above-mentioned investment in public transport, walking and cycling.<sup>19</sup> Most driving visitors to our area in electric vehicles will charge at their origin or during their trip, as they do currently. There is likely a need for some limited 'top-up' charging at their work or end destination. Most people visiting the city by car for work or recreation park their vehicle at a public parking station, their work or another commercial car park, such as a retail destination. There are about 25,000 off-street commercial office car parking spaces across the city, 1,600 off-street retail car parking spaces and 25,000 public car parking spaces. Off-street commercial and public parking are not evenly distributed across our local area.

### Predicted energy impacts

Based on current Australian and NSW Government policies (Scenarios 1 and 2 in [Figure 1](#)[Figure 4](#)), we estimate electric vehicles will add 16 per cent to the total annual residential electricity demand of our area in 2035. Under a 100 per cent take up, electric vehicles would increase residential electricity demand by 36 per cent. To put this into perspective, new residential buildings are expected to increase the current residential electricity demand by 40 per cent in 2035. At the same time, the grid is expected to green rapidly, meaning that emissions will be significantly reduced despite increasing demand for electricity.

Most residential charging occurs at home, overnight. Publicly accessible charging has a different profile, with users charging through the day. [Figure 4](#)[Figure-4](#) illustrates a mix of charging profiles based on assumptions of publicly available charging use and at-home charging.<sup>20</sup> The indicative increase to peak demand across our area would therefore be minimal; however, there would be variances across substations and charging technology.

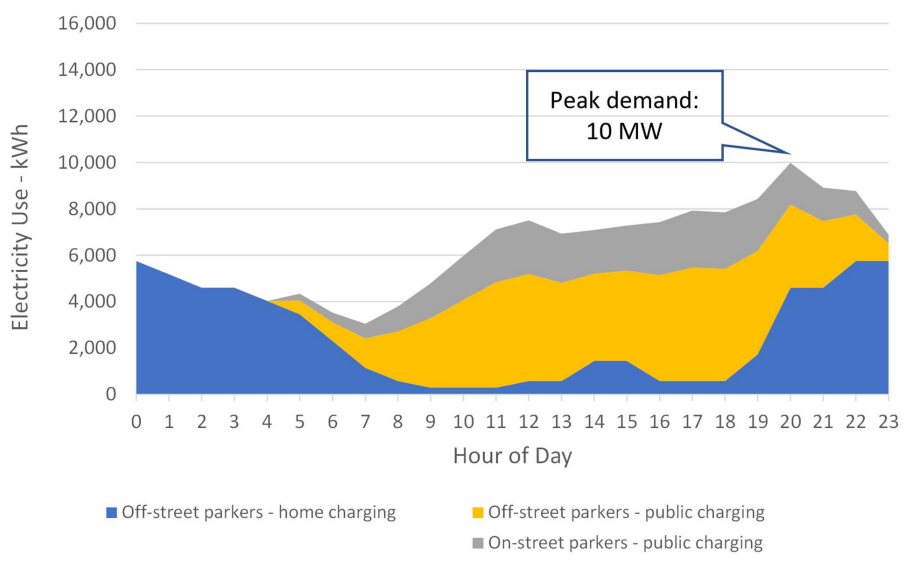
Larger electricity-use fleets, such as buses, will charge at depots. There are 30 to 40 bus depots across Greater Sydney. The electrification of bus depots is the responsibility of the NSW Government and the electricity authority, including any upgrades to the grid required.

<sup>19</sup> *Draft City of Sydney Access Strategy and Action Plan*

<sup>20</sup> Reference SGS Economics and Planning with Kinesis Technical Report. Modelling of home and public charging profiles. Charging profiles are indicative only and based on a Danish study calibrated to electric vehicle charging demanded in the local area using car use from Transport for NSW's Household Travel Survey.

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Figure 4. Predicted electricity use based on 100 per cent of residential vehicles being electric and the mix of charging requirements for residents. [Holding graphic]



Source: SGS Economics and Planning with Kinesis (2022) Electrification of Transport in the City Strategy Technical Report

## 1.6. Timeframe of the strategy and action plan

A strategy for 2035, an action plan for today and the next five years

Electrification of transport, both in fleet uptake, availability and charging technology is rapidly evolving. This strategy and action plan will enable us to adapt to the rapidly changing environment in the short term, with a longer-term view of the next 10 to 15 years with the growth of electric vehicle use and the associated infrastructure.

The availability and affordability of electric vehicles along with fleet turnover means that this is a time of transition. The average vehicle has a useful life of 15 years. People purchasing a vehicle now are unlikely to purchase a new vehicle for a few years. Some fleets are anticipated to turnover much quicker, such as car share, taxis and uber-type vehicles, referred to as point-to-point. Operational cost savings will drive this transition, especially as upfront price parity between electric and internal combustion models is reached.

This strategy and action plan is to provide support for the transition at this crucial point in time. The City assumes this strategy and action plan will need to be reviewed after five years to determine whether any new actions are necessitated by the rapid evolution. Eventually electric vehicles will become business as usual and a continuous strategy to support electric vehicle uptake should not be needed.

## 1.7. Exclusions

This strategy and action plan does not cover the technology of charging, type of chargers or business models for providing charging.

## 1.8. Strategic framework

*Sustainable Sydney 2030–2050 – Continuing the Vision* sets the community's vision for a city for walking, cycling and public transport, with more public transport and zero-carbon vehicles and more people choosing to walk and ride bikes. The city is greener and calmer with more space for people on the streets.

This strategy and action plan facilitates the ambitions of *Sustainable Sydney 2030–2050 – Continuing the Vision* and provides actions to achieve the aims of the City's *Community Strategic Plan – Delivering Sustainable Sydney 2030–2050*, *Environmental Strategy 2021–2025*<sup>21</sup> and *City Access Strategy and Action Plan*. It also reflects the Australian and NSW Governments' policies and directions, including publicly accessible electric vehicle charging to facilitate electric vehicle uptake, along with market forces such as electric vehicle availability, electric vehicle affordability, the market-based provision of electric vehicle charging, evolving and emerging technologies, and fleet turnover (Figure 5).

*Sustainable Sydney 2030–2050 – Continuing the Vision* sets overarching targets that this strategy facilitates:

- By 2035, we will achieve net-zero emissions in the City of Sydney local area.
- By 2050, there will be a minimum overall green cover of 40 per cent, including 27 per cent tree canopy cover.
- By 2050, people will use public transport, walk or cycle to travel to and from work. This includes 9 out of 10 people working in the city centre and 2 out of 3 people working in the rest of the local area.
- By 2030, every resident will be around a 10-minute walk to what they need for daily life.

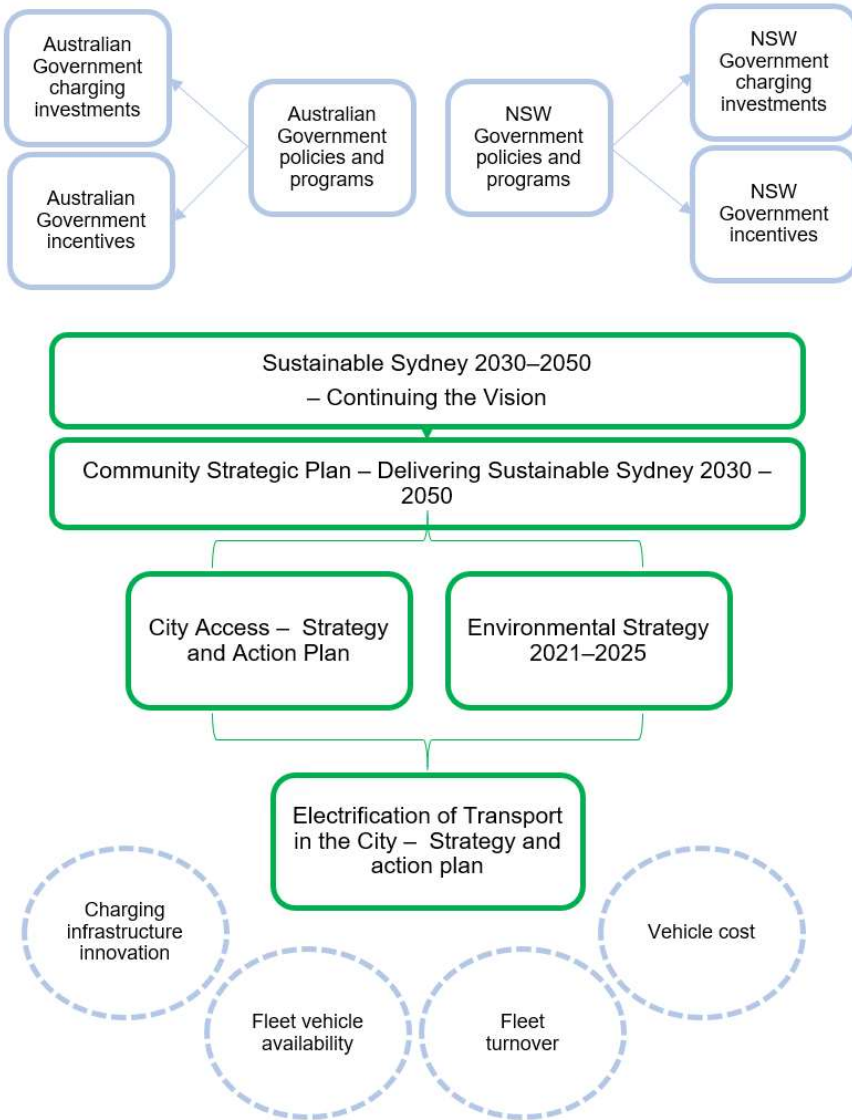


<sup>21</sup> See City of Sydney (2021). *Environmental Strategy 2021–2025*. Available at <https://www.cityofsydney.nsw.gov.au/strategies-action-plans/environmental-strategy>.



## Strategy and Action Plan

Figure 5. Strategic context of the strategy and action plan [Holding graphic]



## 2. Strategy and Actions



### 2.1. Creating a city for walking, cycling and public transport

#### Reducing driving is the best way to address carbon emissions from transport

##### Approach

To achieve our net zero by 2035 target, significant changes will be required to the transport system in our city. These changes involve reducing and eliminating tailpipe emissions, speeding up the shift from private cars to walking, cycling and public transport, transitioning public transport and private vehicle fleets to zero-emissions fuel sources and supporting off-street charging for electric vehicles.

Facilitating a reduction in transport emissions through supporting a mode shift to walking, cycling and public transport is the most effective way to respond to the climate emergency and to support our community to transition to net zero.

Motor vehicles will continue to be an important access option, including for servicing, trades and deliveries, as well as for older people and people with disability. These vehicles will need to be electric in a net zero future. Reducing non-tailpipe emissions<sup>22</sup> will require continued prioritisation of shared forms of motor vehicle use wherever possible, including car share, taxis and point-to-point services. These fleets will also need to be electric.

##### Justification

The biggest reduction in transport emissions will be through a shift to walking, cycling and public transport. The electrification of all residential transport in the city would reduce residential carbon emissions by 7 per cent. By comparison, a mode shift away from car usage based on current programs and policies will reduce emissions by 23 per cent and will bring additional improvements to access, equity and safety.

Public, shared and active transport modes reduce emissions, while having other benefits such as reducing congestion and competition for scarce parking spaces for people who need them, and improving people's health and the city's economy. Walking and cycling are the least carbon intensive transport modes, so they are integral to a sustainable city. Public transport, while still involving some level of carbon emissions, is efficient at serving many people, reducing individual carbon footprints. These modes also are the most efficient users of the city's limited space.

Electric cars are as space inefficient as other cars. The City does not support providing priority access on roads or to kerbside parking, including for charging. This is especially the case in Central Sydney and surrounding areas. For the limited amount of public on-street charging the City envisages, we will reserve the kerbside for charging only (not for parking only). We will not reserve the kerb for charging that is not available to the public.

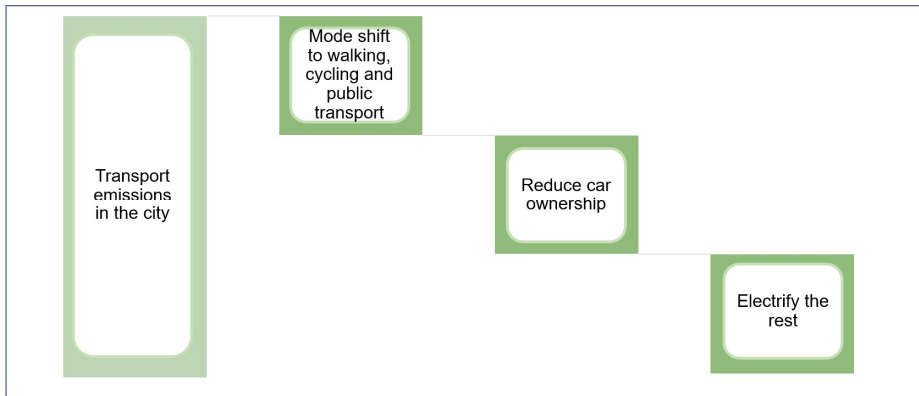
<sup>22</sup> These include emissions from brake wear, tyre wear, road pavement and road wear.

## Strategy and Action Plan

The principal action the City will take to reduce transport-related emissions is to continue facilitating and enabling reduced vehicle use through safe and attractive walking and cycling infrastructure and supporting public transport and car sharing.

Further details on the City's approach to creating the City for walking, cycling and public transport are outlined in *Sustainable Sydney 2030-50 Continuing the Vision* and *City Access Strategy and Action Plan*.

Figure 6 Reducing transport emissions in the city – illustrative only [Holding graphic]



**Action 1:** Work with the NSW Government to reduce vehicle kilometres travelled (VKT) by all vehicle fleets by creating a city for walking, cycling and public transport to reduce transport-related emissions.

## 2.2. Government pricing and policy that prioritises electric vehicles over internal combustion engine vehicles

**Advocate for policies that prioritise electric vehicles over internal combustion engine vehicles.**

### *Approach*

We will advocate for more stringent fuel and emissions standards for vehicles to facilitate the increased availability, affordability and diversity of electric vehicles in Australia. [The Australian Government's 2023 Discussion Paper and intention to introduce improved standards is an overdue but welcome move.](#)

Advocating for a transition plan for all new vehicles in Australia to be electric by 2030 requires the rapid adoption of emission standards to increase the availability, diversity and affordability of electric cars. This would facilitate an earlier transition of key fleets, such as car share, taxis and loading and service vehicles (see Section 2.3).

### *Justification*

## Strategy and Action Plan

The lack of more stringent emissions standards has been noted by major car manufacturers and has been identified as a reason to not bring newer electric vehicle models to Australia sooner, acting as a disincentive for their availability in Australia. Many other countries are transitioning much faster than we are. Europe has three times more electric vehicle models available to buy than Australia. All new vehicle sales need to be electric by about 2030 in order for the fleet to be electric by 2035. Targets and incentives should be considered.

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**Action 2:** Advocate that the Australian Government immediately raise fuel and emissions standards to make electric vehicles more attractive, and to avoid Australia receiving vehicles not saleable elsewhere.

**Action 3:** Advocate that the Australian Government develops a transition plan for new vehicles to be zero emissions by 2030 and powered by a fully renewable electricity grid by 2035.

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### **Advocate for pricing signals that prioritise electric vehicles over internal combustion engine vehicles.**

#### *Approach*

Any subsidies or incentives should, as a priority, support people to not use cars ahead of facilitating uptake of electric vehicles.

Any road pricing mechanisms (such as road user charges) should make electric vehicles more attractive than internal combustion vehicles – especially for vehicles that spend the most time on the road network.

A Low Emissions Zone in the city centre, where many taxis and service vehicles travel could incentivise operators to transition fleets to electric to reduce operating costs and assist in the City achieving net zero by 2035.

#### *Justification*

There has been significant increase in electric bike sales and use, potentially in response to the Covid-19 pandemic. Any government subsidies to encourage fleet electrification should also apply to electric bicycles, and other forms of electric micromobility.

There is an opportunity for broader road pricing, incorporating motorway tolls into a more comprehensive system that focuses on distance travelled, congestion and emissions. It could encompass various parking charges, such as the Parking Space Levy, to ensure a more coherent focus on travel demand management.

Changes to road user charges for electric vehicles were announced by the NSW Government but commencement deferred. As revenue from fuel excise declines, revenue streams created by pricing all vehicles (including electric vehicles) become more important. A Low Emissions Zone in the city centre could create a springboard for a city-wide system.

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**Action 4:** Advocate that the NSW Government investigates pricing mechanisms to incentivise the transition to electric vehicles in the city centre, including a low-emissions zone, parking levies and kerbside charging.

**Action 5:** Advocate that subsidies for electric vehicles (including for charging) proposed by the Australian and NSW Governments reflect the City's fleet transition hierarchy (i.e. e-bikes and other micromobility and public transport first then commercial, and finally private vehicles)

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## 2.3. A transition for electrification that focuses on high-impact transport fleets

### Prioritise electrification of different fleets based on impact

#### Approach

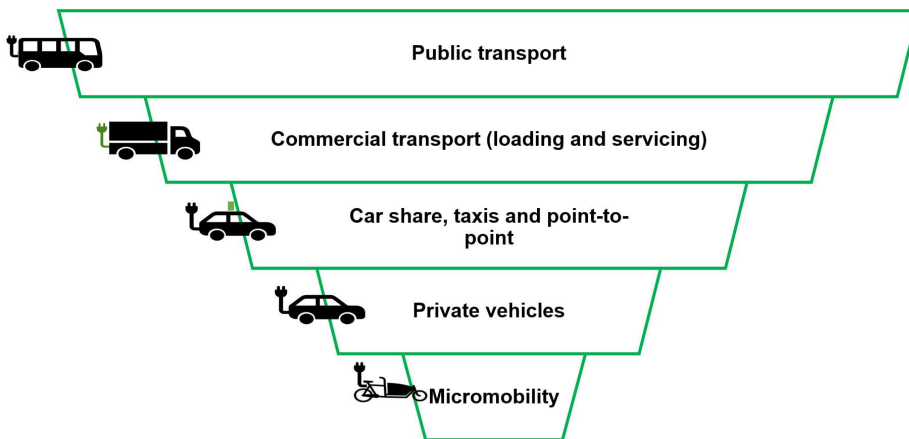
Vehicles are important to the economic functioning of our city. Delivery and service vehicles are vital for productivity, buses provide efficient transport for many people, point-to-point and taxis provide valuable transport over short distances such as the 'last mile',<sup>23</sup> and many residents and visitors are reliant on vehicles to meet their mobility needs.

This strategy and action plan supports a city for walking and cycling first and foremost while facilitating and encouraging the environmental benefits of electric transport, particularly in public transport and commercial fleets, which will also reap operational benefits. It describes the opportunities and challenges for electrification across the various transport fleets operating in the city, advocating for the priority electrification of fleets which have the most impact, in terms of kilometres travelled, moving people, emissions and impacts to the public domain such as noise (Figure 7).

#### Justification

Most transport-related emissions, around 60 per cent in our area, come from non-residential transport. While the transition to private electric vehicles is very important, the greatest impacts for reducing emissions, noise and air pollution will come from electrifying the bus, commercial vehicle, taxi and point-to-point fleets. These are also the fleets that people in the City of Sydney are most exposed to, especially in the city centre.

Figure 7. Priorities for the electrification of transport in the city fleets [Holding graphic]



<sup>23</sup> The 'last mile' in transportation planning is the final part of a journey, often from a transportation hub (e.g. a bus stop or train station) to the final destination (e.g. home or work).

## Strategy and Action Plan

### Electrification of the City's vehicle fleets

#### Approach

The City will manage and analyse low- and zero-emissions options for the City's light and heavy vehicle fleets and use fleet analytics to encourage low-emission driving behaviour and reduce carbon emissions.

Our fleet is diverse, reflecting the different operational functions of the City. We are confident that our passenger fleet will continue to transition.

However, unlike the passenger electric vehicle market, the electric truck and other plant industry is still reasonably immature. Availability and cost of suitable vehicles is a key consideration, but other factors the City needs to consider include:

- risk relating to reliability and maintenance, which diminishes as the market becomes more mature
- operational suitability
- charging requirements, including in City depots (which are also the charging bases for the City's passenger fleet).

The City therefore adopts a risk-based step-change approach. This is designed to ensure we maximise the electrification of the fleet without incurring significant and potentially unmanageable risk, and always seek value for money with our use of the community's funds.

Within that approach, we will continue to maximise the transition of our heavy vehicle fleet as they become available. We are aiming to have at least one electric vehicle of each type as soon as possible, so we can assess their effectiveness. The City can then proceed to broader procurement based on the results of that assessment. We anticipate the full transition of the non-passenger fleet may take 10 years, but we will be well-positioned to accelerate if possible.

We will also explore appropriate procurement approaches for contracted services, such as waste collection.

When we upgrade our depots, we will plan for electric vehicle charging for our fleets. We will advocate to the State and Federal Government that grants to encourage fleet electrification include local government depots to facilitate and encourage local governments to transition their fleets.

#### Justification

The City was one of the first organisations to start converting its fleet of vehicles to hybrid and electric, including a commercial electric vehicle. About 8 per cent of the City's fleet (19 vehicles and 1 truck) are fully electric and we have 73 hybrid cars and trucks. The City acquired its first electric truck in 2021 as a trial, a diesel truck which was converted to electric.

Governments, such as the City, have a role to encourage the uptake of more affordable electric vehicles by creating a second-hand market as fleet vehicles are sold.

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**Action 6:** The City will maximise electrification of its light fleet by 2030 and heavy fleet as soon as possible.

**Action 7:** The City will encourage the uptake of electric vehicles to be used in our contracted services through our procurement processes (including waste collection, cleansing and maintenance).

**Action 8:** Advocate to the State and Federal Government that grants to encourage fleet electrification include local government depots to facilitate and encourage local governments to transition their fleets.

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## Strategy and Action Plan

### Electrification of public transport fleets

#### Approach

The City will advocate for the prioritisation of electric bus fleets by routes that have the most impact on residents, public amenity and health. This includes high-frequency bus routes, routes that traverse our high streets and areas with large residential populations. These are the areas that will benefit the most from reduced noise and air pollution ([Figure 8](#) ~~Figure-8~~).

#### Justification

Buses create a lot of noise and air pollution; 78 per cent of Transport for NSW's emissions are from buses.<sup>24</sup> A trial by the NSW Government found that a transition of the full fleet of buses to electric buses could achieve between \$1.1 and \$1.9 billion in environmental cost savings.<sup>25</sup>

There are 4,090 buses operating in the Greater Sydney area; about 50 to 100 of these are in operation in the city at any time. About 90 per cent of these are standard buses. There are only 70 electric buses operating in the Greater Sydney network. The NSW Government has a target to transition the Greater Sydney bus fleet to electric by 2035,<sup>26</sup> accelerating the pace from 2023 onwards.

Bus fleets will be charged at the depot. These are spread across Greater Sydney. The City will advocate that depots serving densely populated and active streets such as the city centre and major gateway avenues should be priorities for electrification, and transitioned by 2030 at the latest

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**Action 9:** Advocate that the NSW Government accelerates the electrification of the bus fleet serving the City of Sydney, prioritised by depot and corridor, to reduce noise, localised pollution and carbon emissions by 2030.

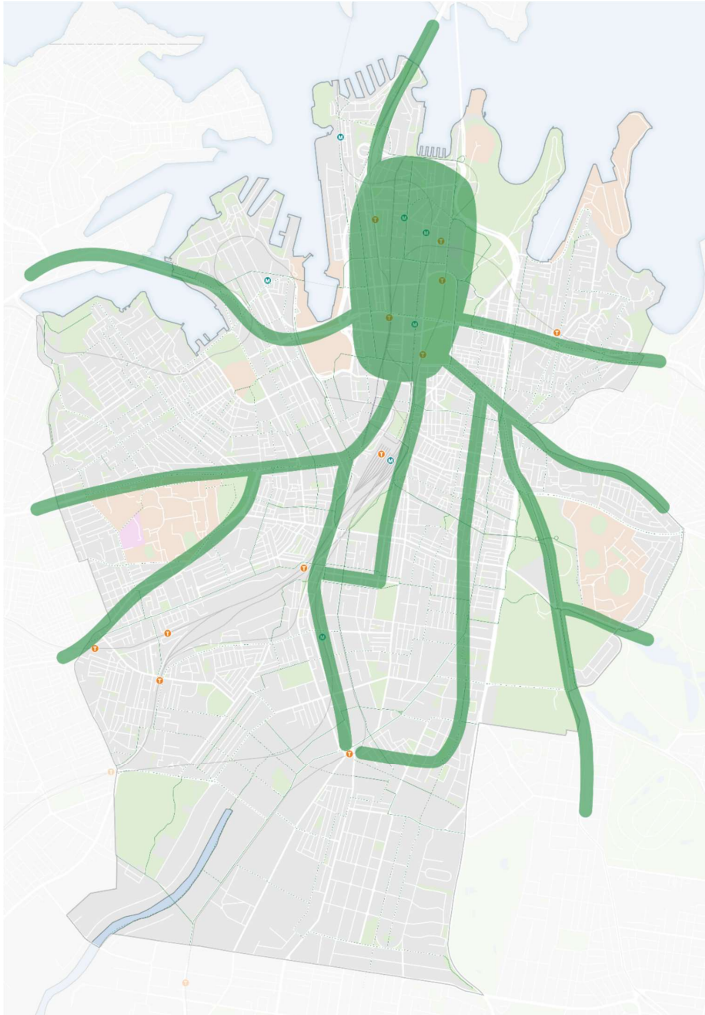
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<sup>24</sup> NSW Government (2022). "Zero Emission Buses" (Project update, June). Available at <https://www.transport.nsw.gov.au/projects/current-projects/zero-emission-buses>.

<sup>25</sup> NSW Government (2021). *NSW Electric Vehicle Strategy*. Environment, Energy and Science and Department of Planning, Industry and Environment, p. 10. Available at <https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Climate-change/nsw-electric-vehicle-strategy-210225.pdf>.

<sup>26</sup> See NSW Government (2022). Zero Emission Buses. Available <https://www.transport.nsw.gov.au/projects/current-projects/zero-emission-buses>. Note that prior announcements used 2030 as the deadline, rather than 2035.

Figure 8. Key bus corridors through the city – illustrative only [Holding graphic]



Source: Redrawn from SGS Economics and Planning with Kinesis (2022) Electrification of Transport in the City Strategy Technical Report

### Electrification of service vehicle fleets

#### Approach

Service vehicles, while important to the necessary function of the city, have a major impact on emissions and the public domain in terms of space and noise. We will advocate for the rapid transition of commercial vehicles, including for relevant subsidies and incentives available for work-



## Strategy and Action Plan

related vehicles. Moreover, a low emissions zone could help promote fleets' uptake of electric vehicles, as discussed in Section 2.2.

There is an opportunity, in conjunction with shared and public loading facilities (hubs), to facilitate micromobility fleet options for last mile delivery. The City in partnership with Transport for NSW provides a courier hub at the Goulburn Street car park, where deliveries can be transferred from a van to a bike or walked to the final destination.

Increasing efficiencies in freight and servicing vehicles, for example through consolidated procurement and loads to reduce empty running, shared and public loading hubs, and lockers and other storage for deliveries, will reduce the emissions associated with these vehicles, as well as improve congestion and productivity.

### *Justification*

The electric and low-emission commercial vehicle market in Australia is immature in comparison to the electric car market, with long lead times. Both new and used electric truck retail markets need to further develop and expand to enable prices to be more competitive and represent better value for money. Further significant developments via Original Equipment Manufacturers (OEMs) are not expected to flow through to retailers in the coming 12 to 24 months, making the cost of ownership not yet comparable with diesel variants in the commercial space.

However, the availability of electric commercial vehicles is increasing. The Electric Vehicle Council reported that "the van and truck sector has seen substantial growth in the [six months to March 2022], with the sector now having access to 21 different trucks, utility vehicles (5), vans (6), and trucks (10)."<sup>27</sup>

The impact of commercial vehicles is not evenly distributed across the local area. There is a significant freight and logistics presence in the southern portion of our area, particularly as it connects to Port Botany and the Sydney Airport.

Many delivery vehicles traverse our city centre every day, about 35,000 vehicle movements, but for most the city centre is not their point of origin or end-of-route destination. While the City provides kerbside loading zones, it is unlikely charging will be needed at them. Most delivery and servicing vehicles will charge at their point of origin or depot. Where appropriate, new off-street loading hubs could also provide brief charging windows.

---

**Action 10:** Advocate that the NSW Government accelerates the transition of service and delivery vehicle fleets to electric vehicles, including the use of e-bikes and other micromobility modes.

---

## **Electrification of car share vehicle fleets**

### *Approach*

Car sharing supports households and businesses who need infrequent access to a motor vehicle. The availability of car sharing reduces vehicle ownership and vehicle use. The City's Car Sharing Policy has already set benchmarks for fleet emission standards. An electric car-sharing fleet would contribute further to emissions reduction.

Car share is a unique fleet in that each vehicle in the City of Sydney has a "depot" in the form of its dedicated on-street space. While car share operators are responsible for the fleet, each individual user relies on the previous user to return the car ready for the next user. With users paying for time

<sup>27</sup> Electric Vehicle Council (2022). State of Electric Vehicles – March 2022, p. 4. Available at: <https://electricvehiclecouncil.com.au/reports/state-of-electric-vehicles-march-2022/>.

## Strategy and Action Plan

as well as distance, the current increased time for a user to charge a vehicle if required (compared to a quick refill for an ICE vehicle) could constrain the use of the car.

When there is a wide choice of publicly available charging, including fast charging, on-street charging for each dedicated car share bay or vehicle is unlikely to be demanded. The cost and impact is not justified by the charging requirements. It is expected that operators will develop systems where they, or their members, refuel (or recharge) the cars, as occurs with the current fleet. The City however recognises the potential for pole-based charging in existing or potential future car share spaces: these would be commercial arrangements between the charging providers and car share operators. There is also the potential for the development of mobile charging solutions.

The City will continue to work with car share operators to transition their fleet to electric vehicles through our regular Car Sharing policy-Policy reviews. The approach will include a target date in the City's Car Sharing Policy for 100 per cent fleet transition (most likely 2030). In future reviews, There there will also be transitional benchmarks, reflecting a reasonable and predictable uptake, noting that the electric vehicle options suitable for mass fleets such as car share are currently limiteded- The City's Policy reviews involve extensive consultation with operators, members and the broader community.

### *Justification*

There are around 850 car share vehicles across the local area. Each of these vehicles helps reduce vehicle emissions and reduce, delay or avoid car ownership and the associated competition for parking. The Car Sharing Policy currently mandates low emission vehicles. Car share vehicles in the local area are used on average 35 kilometres per day over about 5 hours, noting inconsistent usage patterns<sup>28</sup> and variations in each member's trip purpose. Based on this, a car share vehicle would be required to charge on average about once every two weeks. Users are generally expected to return a car share vehicle with a minimum amount of fuel.

Car share operators are responsible for the maintenance and condition of their vehicles. Early engagement with car share operators suggests that they will transition their fleets to electric vehicles for operational reasons once vehicles become available and affordable. Operators have existing systems for refuelling their internal combustion fleets. These are likely to be transferable to an electric fleet, when the expected growth in charging opportunities occurs. The City will work with operators to better understand the charging options in the initial stages of fleet transition (when fast charging opportunities will be less available).

Car share bays take the form of on-street bays in parking spaces provided by the City and off-street bays provided within the car parks of residential, commercial and retail developments. Off-street bays can provide charging facilities to car share vehicles more easily than on-street bays, enabling convenient charging while the car is between bookings. The planning system can be used to ensure new development provides charging facilities in all car share bays.

The City uses the Car Sharing Policy to establish the obligations of eligible operators. Amending the Policy to set the expectations for the predictable transition to an electric fleet is appropriate and builds on a legacy of requiring low environmental impact vehicles.

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**Action 11:** Work with car share operators to develop a model to electrify their fleet by 2030. This includes changes confirmed via periodic policy review and that are cost neutral to the City.

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<sup>28</sup> The City's Car Sharing Policy sets minimum use levels for each vehicle.

### Electrification of point-to-point and taxi fleets

#### Approach

We will advocate for the rapid transition of taxis and other point-to-point services to electric fleets. This will be assisted by measures that increase the availability and affordability of electric vehicles (Actions 2 to 5). Currently, there is not a suitable mass fleet option available in Australia. When one is available, fleets are expected to transition quickly, given the operational cost savings.

After that, electric taxis would then become available to the second-hand car market after three to four years of use, increasing purchase options in the late 2020s.

#### Justification

There are about 25,000 taxi movements in the Sydney city centre on an average weekday. Taxis travel about 200 to 300 kilometres per day. Most electric taxis will charge at a depot or other point of origin on a dedicated charger to meet their range needs.

There may be some need for refuelling during use. This would need to be met with rapid charging during a shift. The NSW Government's fast-charging network on major routes will play a role here. The development of charging options in service stations (or a similar charging facility) will also contribute, and facilities such as food and beverages, car washes and bathrooms would incentivise taxi drivers to take short multipurpose breaks that could include charging.

There may be some need for dedicated rapid charging at key locations to supplement point-of-origin charging. Airports are one potential location. Charging at taxi ranks, especially in the city centre, is unlikely to be a feasible or useful option for taxis.

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**Action 12:** Advocate that the NSW Government accelerates the uptake of zero-emission vehicles by point-to-point operators, including taxis.

---

## 2.4. Supporting electric vehicle charging options in ways that limit the impact on the public domain

### Respond to the specific charging needs of different City villages

#### Approach

Different transport fleets across the local area will have varying needs for electric vehicle charging. Most residents and workers will charge at home. The need to provide on-street charging is largely limited to areas with limited access to and availability of off-street parking and to the availability of publicly accessible rapid-charging facilities.

Most residents in the city have either off-street residential parking or utilise parking permits to park on the street. The local areas with higher levels of vehicle ownership are also generally areas with high levels of off-street parking (for example, Green Square and City South village). However, some areas of the city have limited access to off-street parking, such as [Millers Point](#), Macleay Street and Woolloomooloo Village, Newtown, parts of [Pyrmont](#), Glebe and Surry Hills ([Source: SGS Economics and Planning with Kinesis \(2022\) Electrification of Transport in the City Strategy Technical Report](#)

— [Figure 3](#) [Source: SGS Economics and Planning with Kinesis \(2022\) Electrification of Transport in the City Strategy Technical Report](#)

[Figure 3](#)). ~~Some areas also have relatively limited access to other public charging settings, such as large shopping centres, or City controlled car parks. Around 100 publicly available charges are currently available in the city, including at the City's Goulburn Street and Kings Cross car parks.~~

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The City may need to enable publicly accessible charging in village locations to supplement other charging options until the market develops (see Page 3227).

Around 100 publicly available charges are currently available in the city, including at the City's Goulburn Street and Kings Cross car parks. Due to the concentration of commercial activity in the city's south, there may also be some need for publicly accessible fast charging for commercial vehicle fleets. However, it is expected that most commercial fleets will charge at their depot or point of origin.

There will not be a need for the City to provide on-street publicly accessible charging in the city centre. Commercial car parks and destination car parks currently provide charging for the public, and this is anticipated to continue.

### *Justification*

Car ownership and access to off-street parking are fairly evenly matched across the city, with the exception of Pyrmont which has high levels of off-street parking and lower levels of car ownership, and areas such as Macleay Street and Woolloomooloo Village, Newtown and parts of Glebe and Surry Hills which have limited access to off-street parking compared to car ownership rates

(Source: SGS Economics and Planning with Kinesis (2022) [Electrification of Transport in the City Strategy Technical Report](#))

**Figure 3** Source: SGS Economics and Planning with Kinesis (2022) [Electrification of Transport in the City Strategy Technical Report](#)

**Figure 3).**

Under the City's optimised scenario, some 200 to 350 publicly accessible chargers are needed in or near the city, but the density required differs across village areas. These would supplement the already over 100 publicly available chargers in the local area, concentrated in the city centre.

## **Support off-street charging in new buildings**

### *Approach*

New buildings in our area will be "EV ready". The City is supporting the forecast growth in electric vehicle uptake by requiring new commercial and residential developments to provide an appropriate number of shared electric vehicle charging parking spaces, along with a conduit to all parking spaces to enable the easy provision of electric vehicle charging at dedicated spaces when required.

The City's planning controls will also facilitate the provision of electric car share vehicles within developments by requiring on-site car share bays in new developments to be fitted with electric vehicle charging facilities in common property ownership.

We will investigate requirements for new commercial development to provide electric vehicle charging facilities in visitor parking spaces, including retail customer parking spaces. This could help provide access to electric vehicle charging facilities to residents who do not have a way of charging at home and for 'top-up' refuelling opportunities.

As power demand increases over time, building managers can implement load balancing, individual metering and other models that all use the same underlying infrastructure ("EV ready").

### *Justification*

Planning controls are an important part of facilitating the transition to electric vehicles and an element within the City's control.

New development should meet the future needs of building users and planning controls can ensure this happens.

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## Strategy and Action Plan

Planning controls should not cause development to overprovide or overbuild infrastructure for electric vehicle charging that would exceed the forecast uptake.

---

**Action 13:** Prepare draft planning controls in the Sydney Development Control Plan 2012 requiring new development to be 'electric vehicle ready', with car parking spaces enabling electric vehicle charging.

---

### Support off-street vehicle charging in existing buildings

#### *Approach*

The City will work with the NSW Government, the energy sector and building owners in priority sectors to understand and help facilitate options for charging provision in existing buildings and to promote publicly accessible charging (see Section 2.4). This will help building owners to make more informed decisions about what charging is, or is not, required on-site.

[We know EV charging and electrification of existing apartment buildings can be complex for owners and renters. We will undertake research to explore the technical, governance and management challenges facing strata communities. The research will include an in-depth study of a small sample of the different types of apartment buildings in our local government area in terms of size, age and complexity.](#)

We will assist building owners in priority sectors to investigate electric vehicle charging options as part of a broader energy management plan. Our Green Building Grants supports Owners Corporations and building owners in the accommodation sector to undertake environmental ratings, certifications, audits and assessments for existing buildings to be resource efficient and achieve net zero emissions by 2035.<sup>29</sup>

We will also provide guidance on electric vehicle charging options through our energy actions plans in our Smart Green Apartments program.<sup>30</sup> Through our Smart Green Apartments program we work with an intake of Owners Corporations annually, supporting them to improve efficiency, sustainability and resilience of their apartment buildings and residential precincts.

While there are challenges with retrofitting, grid supply and heritage constraints, the City envisages ongoing expectation from people in private buildings with off-street parking to charge their electric vehicles there. They may see other people with off-street parking taking advantage of the opportunity – charging when they like at a speed that suits their needs, potentially using electricity they themselves generate. Feasibility of occupiers meeting that demand will vary from building to building. We will investigate classifying electric vehicle chargers as exempt development in local planning controls so they don't require planning approval and this will apply to the installation of chargers in shared, commercial and non-private contexts.

#### *Justification*

The NSW Government Office of Energy and Climate Change has developed guidance for residential strata buildings<sup>31</sup> and for commercial office buildings<sup>32</sup> on electric vehicle charging.

<sup>29</sup> More information available at <https://www.cityofsydney.nsw.gov.au/environmental-support-funding/green-building-grants>

<sup>30</sup> More information available at <https://www.cityofsydney.nsw.gov.au/environmental-support-funding/smart-green-apartments>

<sup>31</sup> NSW Government Energy Saver. "Making your residential strata building EV ready". Available at <https://www.energysaver.nsw.gov.au/reducing-emissions-nsw/electric-vehicles/electric-vehicle-ready-buildings/making-your-residential-strata-building-ev-ready#the-5-steps-to-ev-readiness>

<sup>32</sup> NSW Government Energy Saver. "Making Your Commercial Building EV Ready". Available at <https://www.energysaver.nsw.gov.au/reducing-emissions-nsw/electric-vehicles/electric-vehicle-ready-buildings/making-your-commercial-building-ev-ready>.

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NSW planning controls allow for electric vehicle charging for private use to be installed without a development application.

There is a significant stock of existing apartment buildings and offices with off-street car parking that can be retrofitted to support electric vehicle charging. Solving this challenge in place matters. There is no 'one-size-fits-all' solution, as differences in buildings' age, location and size and other factors require a mix of information, incentives and guidance. Some buildings may not be suitable for retrofitting.

There are many residents in the city that rent rather than own their dwelling. Under current systems, it is a challenge to facilitate them to be able to access electric vehicle charging on-site. incentives and guidance.

By 2035, at 100 per cent uptake, around 5 to 20 chargers will be needed in the average strata building, noting that the size, availability of off-street parking, age and location of strata buildings vary across our area (Section 1.5).

---

**Action 14:** [Work with governments, industry, peak bodies and strata communities to support electrification of buildings and upgrades to enable onsite electric vehicle charging](#)~~Work with the NSW Government to provide guidance to residential building owners and managers to enable informed decision-making regarding appropriate provision of on-site charging.~~

**Action 15** Fund electric vehicle charging feasibility assessments as part of net-zero plans and energy audits in Green Building Grants and provide guidance on electric vehicle charging through our energy actions plans in the Smart Green Apartments program.

---

### **Support publicly accessible vehicle charging in ways that assist the transition to electric vehicles while limiting the impact on streets and public space**

#### *Approach*

Electric vehicle charging will take place primarily off-street, through a combination of charging facilities in residential and commercial buildings and through market-driven, private approaches to charging stations accessible to the public.

The City already provides publicly available charging stations in two of its car parks: the Goulburn Street Car Park and the Kings Cross Car Park.

To supply confidence to the burgeoning public charging network, the City will lead the early provision of publicly accessible chargers. We will work with service providers to deliver a number of paid publicly accessible chargers in our off-street car parks at no or minimal cost to Council. In addition, we will work with private sector providers to trial paid on-street publicly accessible charging in residential areas with constrained private charging opportunities. This would limit the impact of charging infrastructure on the public domain, especially footpaths. It is important that this is paid rather than free parking / charging to meet the equity aims of this Strategy. The aim is to provide additional public charging in the first few years of transition during which the private sector establishes a more extensive, scalable charging network.

Charging options are rapidly being developed that reduce impact on the public domain from charging infrastructure. On-street models can be explored to respond to a particular area's needs if required. This would be managed to support access and limit impact on the public domain as well as costs and the use of public funds for private vehicle use. For example, charging directly from power poles is a model that uses infrastructure already in the public realm, adjacent to parking. [We will include areas with relatively low availability of potential public charging options in trials and rollout of on-street charging.](#)

## Strategy and Action Plan

The City will also work with operators of commercial car parks to promote charging in these locations and we will work with the NSW Government to make sure the public know available charging locations.

### *Justification*

To protect the liveability of our neighbourhoods for a diverse population and encourage increased use of public transport, walking and cycling, the City, through its *Neighbourhood Parking Policy*, prioritises use of on-street, kerbside parking spaces for residents, businesses and their visitors and customers. Maintaining this priority requires that commuter on-street parking in residential neighbourhoods and commercial areas be actively discouraged. Publicly accessible on-street electric vehicle parking with charging will only be considered where it is in line with these objectives and priorities.

A key element of the transition to electric vehicles will be the expansion of the publicly accessible charging network, including fast charging for those who need it.

Providing on-street refuelling ('charging facilities') for one type of private vehicle is not equitable, especially considering the current affordability and availability issues. Most vehicles refuel now at publicly accessible service stations, not on public streets. The infrastructure requirements, impacts and costs are unlikely to make publicly accessible on-street charging feasible or scalable in our area, where many people have access to off-street parking.

Retail locations and public car parks in our area are already providing electric vehicle charging. It may be already easier for our residents to charge an electric vehicle than fuel up a petrol vehicle. There are already over 100 publicly available electric vehicle chargers in the City – underlining the importance of making sure the public know where they are.

There are 7 service stations within the City of Sydney with over 20 additional stations within a 2-kilometre range. Major service station operators are transitioning to provide dedicated electric vehicle charging. These types of facilities, which are already optimally located on key routes and near key destinations, will expand publicly accessible charging access, and serve an important role in facilitating the transition for our residents that are not able to charge at home.

The NSW Government has planned for fast charging along the M1 and the A4 (City West Link).

The City will play an important early leadership role that still allows the rapid development of market-driven public charging facilities in the medium and long term.

---

**Action 16:** Advocate that the NSW Government investigates appropriate and feasible market driven options for scalable publicly accessible off-street charging.

**Action 17:** Work with owners of publicly accessible car parking and servicing (including service stations, retail parking, public parking stations) to promote the opportunity to provide EV charging for public use.

**Action 18:** Support the NSW Government to ensure the public knows where publicly accessible chargers are.

**Action 19:** Provide additional public charging in City-controlled car parks across the LGA in locations where feasible.

**Action 20:** Work with private sector providers to trial paid on-street publicly accessible charging in residential areas with constrained private charging opportunities.

**Action 21:** Investigate scalable models for on-street charging for areas with limited access to off-street locations for charging. This model should only supplement other public charging offers; be based on an evidenced need, including the majority of residents supporting on-street charging in that location; be cost neutral to the City; be based on available or advance technology; and avoid negative impacts on the public domain including footpaths and planting.

---

## Strategy and Action Plan



# 3. Action Plan



The City is not responsible for providing charging but has a responsibility to facilitate access and equity through enabling the right charging solutions in the right places.

This strategy outlines key actions the City can do to support this transition, including **working with**, **advocating**, and actions within the **City's control**.

## Strategy and Action Plan

Action number	Action	New or continuing	Timeframe	Responsible Business Unit	Other agencies
<b>Creating a city for walking, cycling and public transport</b>					
Action 1	<b>Work with</b> the NSW Government to reduce vehicle kilometres travelled (VKT) by all vehicle fleets by creating a city for walking, cycling and public transport to reduce transport-related emissions.	Continuing	Immediate	City Access	NSW Government
<b>Government pricing and policy that prioritises electric vehicles over internal combustion engine vehicles</b>					
Action 2	<b>Advocate</b> that the Australian Government immediately raise fuel and emissions standards to make electric vehicles more attractive, and to avoid Australia receiving vehicles not saleable elsewhere.	Continuing	Immediate	Sustainability & Resilience	Federal Government
Action 3	<b>Advocate</b> that the Australian Government develops a transition plan for new vehicles to be zero emissions by 2030 and powered by a fully renewable electricity grid by 2035.	Continuing	Immediate	Sustainability & Resilience	Federal Government
Action 4	<b>Advocate</b> that the NSW Government investigates pricing mechanisms to incentivise the transition to electric vehicles in the city centre, including low emissions zone, parking levies and kerbside charging.	Continuing	Immediate	City Access	NSW Government
Action 5	<b>Advocate</b> that subsidies for electric vehicles (including for charging) proposed by the Australian and NSW Governments reflect the City's fleet transition hierarchy (i.e. e-bikes and other micromobility and public transport first then commercial, and finally private vehicles).	Continuing	Immediate	City Access	NSW Government Federal Government
<b>A transition to electrification that focuses on high-impact transport fleets</b>					
Action 6	The <b>City will</b> maximise electrification of its light fleet by 2030 and heavy fleet as soon as possible.	Continuing	Ongoing	Fleet services	
Action 7	The <b>City will</b> encourage the uptake of electric vehicles to be used in our contracted services through our procurement processes (including waste collection, cleansing and maintenance).	Continuing	Ongoing	Fleet services	
Action 8	<b>Advocate</b> to the State and Federal Government that grants to encourage fleet electrification include local government depots to facilitate and encourage local governments to transition their fleets.	New	Immediate	Fleet services	Federal Government NSW Government

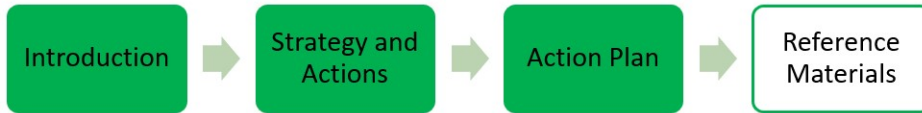
## Strategy and Action Plan

Action number	Action	New or continuing	Timeframe	Responsible Business Unit	Other agencies
Action 9	<b>Advocate</b> that the NSW Government accelerates the electrification of the bus fleet serving the City of Sydney, prioritised by depot and corridor, to reduce noise, localised pollution and carbon emissions by 2030.	Continuing	Ongoing	City Access	NSW Government Transport for NSW
Action 10	<b>Advocate</b> that the NSW Government accelerates the transition of service and delivery vehicle fleets to electric vehicles, including the use of e-bikes and other micromobility modes.	Continuing	Ongoing	City Access Sustainability Programs	NSW Government
Action 11	<b>Work with</b> car share operators to develop a model to electrify their fleet by 2030. This includes changes confirmed via periodic policy review and that are cost neutral to the City.	Continuing	Ongoing	City Access	Car share operators
Action 12	<b>Advocate</b> that the NSW Government accelerates the uptake of zero-emission vehicles by point-to-point operators, including taxis.	Continuing	Ongoing	City Access	NSW Government NSW Point to Point Commission
<b>Supporting electric vehicle charging options in ways that limit impacts on the public domain</b>					
Action 13	<b>Prepare</b> draft planning controls in the Sydney Development Control Plan 2012 requiring new development to be 'electric vehicle ready', with car parking spaces enabling electric vehicle charging.	Continuing	Immediate	Planning	NSW Department of Planning and Environment
Action 14	<del><b>Work with governments, industry, peak bodies and strata communities to support electrification of buildings and upgrades to enable onsite electric vehicle charging. Work with the NSW Government to provide guidance to residential building owners and managers to enable informed decision making regarding appropriate provision of on-site charging.</b></del>	Continuing	Immediate	Sustainability Programs	NSW Office of Energy and Climate Change
Action 15	<b>Fund</b> electric vehicle charging feasibility assessments as part of net-zero plans and energy audits in Green Building Grants and provide guidance on electric vehicle charging through our energy actions plans in the Smart Green Apartments program.	New	Immediate	Sustainability Programs	NSW Government Building owners and Managers
Action 16	<b>Advocate</b> that the NSW Government investigates appropriate and feasible market-driven options for scalable publicly accessible off-street charging.	New	Immediate	City Access	NSW Government

## Strategy and Action Plan

Action number	Action	New or continuing	Timeframe	Responsible Business Unit	Other agencies
Action 17	<b>Work with</b> owners of publicly accessible car parking and servicing (including service stations, retail parking, public parking stations) to promote the opportunity to provide EV charging for public use.	Continuing	Ongoing	City Access City Communications Planning	Public parking providers Commercial parking operators
Action 18	<b>Support the</b> NSW Government to ensure the public knows where publicly accessible chargers are.	New	Immediate	City Communications	NSW Government
Action 19	<b>Provide</b> additional off-street publicly accessible charging in City-controlled car parks across the LGA in locations where feasible (other than in City parks).	New	Immediate	City Access CITO	DPIE
Action 20	<b>Work with</b> private sector providers to trial paid on-street charging in residential areas with constrained private charging opportunities. This should be cost neutral to the City and avoid negative impacts on the public domain including footpaths and planting.	New	Immediate	City Access CITO	Electric Vehicle charging providers Grid operators
Action 21	<b>Investigate charging models</b> for areas with constrained charging options. This is a contingency. The model should only supplement other public charging offers; be based on an evidenced need; community acceptance; be cost neutral to the City; be based on available or advanced technology; and avoid negative impacts on the public domain including footpaths and planting.	New	2 to 3 years	City Access City Design Traffic Operations City Engagement	NSW Government Electric Vehicle charging providers

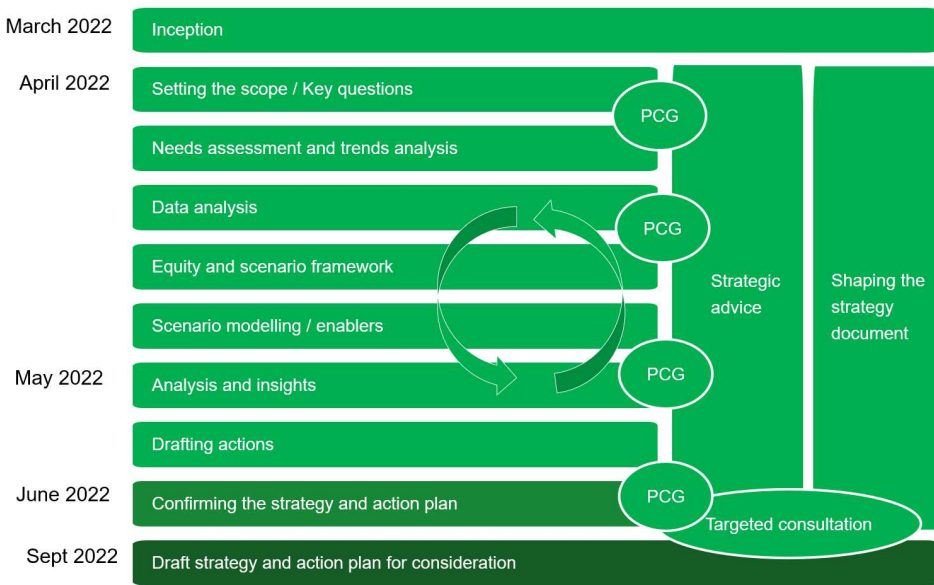
# 4. Reference Materials



## 4.1. Process to develop the strategy and action plan

Figure 9 illustrates the process undertaken to develop this strategy and action plan along with key dates and key meeting points.

Figure 9. Process to develop the strategy and action plan



The development of this strategy and action plan was supported by a technical report and an internal Project Coordination Group.

### Technical report

The strategy and action plan builds on analysis and understanding of vehicle use within our local context. The City partnered with SGS Economics and Planning and Kinesis to develop and provide strategic and technical advice. The technical report providing the analysis and modelling undertaken is available at: [\(link to be included\)](#).

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## Engagement

An internal cross-divisional Project Coordination Group (PCG) steered the development of the strategy and action plan, with representatives from Strategic Planning and Urban Design, Sustainability and Resilience, Sustainability Programs, City Access, Strategy and Communication and City Fleets.

This PCG met formally to undertake intensive working sessions coordinated with the development of the strategic advice, technical analysis and modelling by SGS Economics and Planning and Kinesis (15 December 2021, 24 March 2022, 20 April 2022, 20 May 2022, 10 June 2022) along with informal and targeted meetings between key members.

The PCG provided input into iterations of the draft, including drafting and approving the actions and reviewing the 80 percent draft strategy and draft action plan.

The City exhibited the Draft Strategy and Action Plan for comment in February 2023. This final Strategy and Action Plan responds to issues raised in the consultation.

---

## 4.2. Key terms

Key terms	Definition and explanation
EV ready	Refers to parking spaces that have the required wiring, power outlets and connection points for an electric vehicle charger to be installed when required. These can be parking spaces in new buildings or retrofitted parking spaces in existing buildings.
Kilowatt (kW)	A kilowatt is how much energy is moving or being used at one time. It is used in reference to the speed of chargers.
Kilowatt hour (kWh)	Amount of energy used in an hour. Used in reference to the capacity of a battery, for example, how much energy a battery can hold and store.
Micromobility	A term used to refer to a range of smaller vehicles such as bicycles, cargo bikes, electric bikes, electric scooters and three-wheeled delivery vehicles, that can be electric or human powered.
Point-to-point vehicles	Refers to vehicles used to transport people on demand for a fee, such as taxis, hire cars, ride-share services and tourist services.

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### 4.3. Electric vehicle charging standards

	Power	Range added per hour	Charging time	Typical application
Level 1 – single phase (domestic)	2.4-3.7kW	10-20km range / hour	5-16 hours	Home
Level 2 slow – single phase (domestic or public)	7kW	30-45km range / hour	2-5 hours	Home, work, shopping centres, car parks
Level 2 fast – three phase (public)	11-22kW	50-130km range / hour	30 mins -2 hours	Urban roadside
Level 3 – fast charge (public)	50kW	250-300km range / hour	20-60 mins	Regional near highways, motorways and key routes
Level 4 – super fast charge (public)	120kW	400-500km range / hour	20-40 mins	Regional near highways, motorways and key routes
Ultra-fast charge (public)	350kW	1000+ km Range / hour	10-15 mins	Highways and motorways

Source: NSW Government Electric vehicle charging types.

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# **Attachment B**

**Design Version - Electrification of  
Transport in the City Strategy and Action  
Plan**



Final  
June 2023

# Electrification of Transport in the City

## Strategy and Action Plan

We acknowledge the Gadigal of the Eora Nation  
as the Traditional Custodians of our local area.

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Modelling and technical analysis for the development of this strategy and action plan was undertaken by SGS Economics and Planning with Kinesis.

*Electrification of Transport in the City Strategy and Action Plan Technical Report 2022.*

This is available at [\[link\]](#)

# 1. Introduction

## 1.1 A strategy and action plan to reduce transport-related emissions by electrifying transport in the city

*The Electrification of Transport in the City: Strategy and Action plan* ('strategy and action plan') outlines the approach of the City of Sydney (the 'City') for electrification of transport fleets within our local government area ('local area', 'area').

This strategy and action plan identifies key areas of action to electrify vehicle (EV) fleets in the immediate to short term and that are within the City's control or that the City can aim to influence. The strategy aims at 2035, with the action plan for today and for the next five years.

### Why we need this strategy and action plan

The City of Sydney is expected to grow – both in residents and in people that visit the city to work, study and play. Transport currently accounts for some 20 per cent of greenhouse gas emissions in the local area and is projected to increase as a proportion of overall emissions. Without intervention, we are not going to be able to sufficiently reduce our transport-related emissions.

Our community has told us they want to respond to climate change. They want a city with improved air quality, and reduced emissions including carbon dioxide (CO<sub>2</sub>), NO<sub>x</sub> and noise, especially in high density and high activity areas. They want fewer cars and less congestion – and for vehicles to be electric.<sup>1</sup> They want more public transport,

We are committed to being a net-zero city by 2035. Transformation to net-zero emissions within our area by 2035 will require a significant shift in transport to walking, cycling and public transport, as well as the electrification of vehicle fleets and greening of the grid.

walking and cycling. We have committed to this in *Sustainable Sydney 2030–2050 – Continuing the Vision* and in the *Community Strategic Plan – Delivering Sustainable Sydney 2030–2050*.

### Vehicle electrification is only part of the solution

These commitments and the city's anticipated growth require a shift away from private vehicles, which have high emissions and require significant space for movement and for parking when not in use. The biggest impact we can have to reduce transport emissions is to facilitate a shift to walking, cycling and public transport.

However, not all trips can be taken this way. Some people are not able to walk, ride a bike or use public transport easily or for all trips. Much servicing and freight activity will continue to occur via vehicles. The electrification of vehicles, particularly high-impact fleets such as delivery and service (commercial), taxis, point-to-point (ride-share services) and car share vehicles, along with private vehicles, is necessary to reduce transport emissions. There are also additional benefits of reduced noise, localised air pollution and running costs. The average NSW driver will save about \$1,000 per year in running costs by switching to an electric vehicle.<sup>2</sup>

Electric vehicles have zero air quality pollution or greenhouse gas 'tailpipe' emissions in operation. However, greenhouse gas emissions are produced in the extraction, processing, and transport of resources to manufacture and power vehicles, known as 'well-to-wheel' or 'life cycle' emissions.

The energy and minerals used to make electric vehicles is often taken out of context. The International Energy Agency<sup>3</sup> shows comparative life-cycle greenhouse gas emissions of a mid-size battery electric vehicle is less than half of an equivalent internal combustion engine vehicle.

An electric vehicle will be lower life-cycle emissions to a fuel alternative after around a year or two of driving<sup>4</sup>. The emissions associated with manufacturing and using electric vehicles will continue to decrease as more renewable electricity comes online. The Australian Government expects the national electricity grid to be 82% renewable by 2030.

There are also innovations underway in battery technologies that reduce or avoid the need for precious minerals, expand the energy density (which means smaller batteries with more power), and improve recyclability. The commonwealth, state governments, and the electric vehicle industry must ensure that recyclability and circular economy systems are central as markets expand.

Although the overall life-cycle emissions of electric vehicles may be less than internal combustion engine vehicles, the total environmental impact of car production and usage means that the uptake of electric vehicles should not be pursued above the City's ongoing goals to reduce car use and prioritise walking, cycling and public transport.

Private vehicles, electric or otherwise, are inefficient in space. Charging infrastructure for these vehicles cannot be at the detriment of the public realm.

Electric public transport and reducing emissions associated with public transport activities are an essential part of this transition.



Photographer: Mark Metcalfe / City of Sydney

### The role of the City

This strategy and action plan supports the transition to electric vehicles in the immediate future, within the framework of the City's aspirations to be "a city for walking, cycling and public transport" (the strategic framework is outlined in Section 1.8).

The City needs to develop a balanced approach to any role in organising and supplying charging opportunities, infrastructure and power supply for the transport fleets in the local area. Historically, the City does not take responsibility for refuelling internal combustion engine transport fleets in our area. There is a role to facilitate charging given the City's strong support for electrification of transport – and to support our advocacy for it to happen well in advance of the aspirations of other levels of government in Australia – but the City must also consider the appropriate role of local government in the transition (Section 1.4) and the competing demands for the City's funds and resources.

To manage this balance, the City is facilitating and enabling the transition to electric vehicles in a way that respects local context, urban form, residents, visitors, businesses, and is embedded within the longer-term strategic vision and objectives for the city.

---

## 1.2 Aim of the strategy and action plan

We are aiming for all vehicles that operate in our local government area to be zero emissions (tailpipe and greenhouse gas) by 2035, as part of achieving net-zero emissions.

The City's research indicates the current biggest barriers to having an electric vehicle are availability and affordability, especially for commercial vehicles.

The NSW Government estimates that "currently, the average EV [Electric Vehicle] sold into the NSW market is about \$28,000 more expensive than the average petrol or diesel car."<sup>4</sup> Potential factors for the price gap include the relatively small size of the Australian market compared to other markets such as Asia and Europe, and to the initial higher cost of new technology such as batteries. The cost of electric vehicles in the medium to longer term has the potential to be cheaper than petrol and diesel vehicles if: battery costs decrease with technology and scale; and capital costs decrease with increased scale of production particularly as electric vehicles are more standard and have significantly fewer parts. Maintenance and running costs are already lower for electric vehicles with fuel costing about a third of petrol/diesel vehicles.

With the City aiming for all vehicles and public transport operating in its area to be zero emissions by 2035, decisive action by the Australian Government is needed for 100 per cent of vehicle sales to be zero emissions by 2030. This will require the right Australian and NSW tax and policy frameworks to enable this to happen, much of which is outside of the City's control.

Fleet turnover will then take Australia towards a fully zero-emissions fleet in the next decade.

This strategy and action plan is necessary to identify areas where the City can facilitate this transition. The main way is to ensure sufficient charging opportunities – from various sources and for various fleets – to enable the transition to fleet electrification to proceed smoothly.

---

## 1.3 Principles for the equitable electrification of transport in the city

The transition to electric vehicles needs to be equitable and inclusive, supporting access to electric vehicle fleets for those who need them without entrenching the economic, social and place<sup>5</sup> costs of private vehicles.

We have a responsibility and opportunity to shape and prepare future actions to support broader liveability, sustainability, productivity and inclusion outcomes, while being proactive and action focused.

We encourage the uptake of electrification in transport fleets but not at the detriment to inclusion, access and quality of place, and access to walking, cycling and public transport infrastructure.

Equity in the electrification of transport within the city includes equity of access to electric vehicles and to electric vehicle charging, as well as the broader aspects of equity of access to electric public transport and to public space. It also encompasses the equity aspects of imposing the ongoing costs of car ownership on residents, and of using public resources to support owners of electric cars. This strategy aims to balance these competing needs, with a focus on equitable solutions for the community, residents, businesses and visitors. The principles guiding this strategy and action plan are shown in Box 1.



## Box 1: Principles for the electrification of transport in the city

### **We will be guided by the overall City strategy to encourage a shift in modes of transportation**

The City's *Sustainable Sydney 2030–2050 – Continuing the Vision* and supporting plans and strategies outline the way we will work to reorganise the planning and operation of transport systems. This will reduce emissions by reducing the amount of driving and creating an improved baseline for electrification to take us to net zero.

### **Protect the public domain – public space is not the place for fuelling vehicles**

The city's public places are vital to achieving our *Sustainable Sydney 2030–2050 – Continuing the Vision* goals. Public street space is too important to allocate for fuelling vehicles – with petrol or electricity.

### **Go early, but take the community with us**

The City has a strong commitment to net-zero emissions by 2035. We want to get there in ways that the community will support and remain committed to informing and engaging our community.

### **Strong leadership**

The City's aim has always been to lead, serve and govern well. True leadership in this area involves understanding complex issues and making decisions based on the evidence. It also means identifying opportunities and using all levers, including advocacy, to influence the Australian electric vehicle policy framework.

### **Focus on high-exposure fleets**

People on the city's busy streets are exposed to emissions, noise and pollution. Large fleets like buses and point-to-point vehicles account for a high proportion of vehicle kilometres travelled in our area and are responsible for a large amount of emissions; they also have the scale and commercial opportunity to transition to zero emissions quickly.

### **Ensure new development is ready for electric vehicles**

Combining parking and vehicle charging makes sense. Many new commercial and residential buildings are being developed. It makes sense to use the planning system so building parking is "EV ready" from day one.

### **Be inclusive, no special access for electric vehicles except for charging**

As electric vehicles are currently very expensive, more affluent people will be the ones who drive most of them. Until costs become more reasonable, we will not worsen inequity by preferencing electric vehicles on roads or at the kerbside, except to provide access to the limited amount of public charging.

### **Expect the market to do the heavy lifting – vehicle refuelling is not a community obligation**

Providing fuel to private vehicles has always been a commercial undertaking. Providing electricity for charging should be the same, a new market opportunity rather than an obligation of any level of government.

### **Aspire for multiple options to protect choice, build resilience and redundancy**

The future of charging is difficult to predict, with commercial approaches and technology evolving rapidly. The system will develop with the most choice – and the most resilience and capacity – if multiple options for publicly accessible off-street charging exist.

---

## 1.4 Roles and responsibilities in the electrification of transport fleets

**The City** does not control many aspects related to the electrification of transport fleets, including transport sector emissions, fleet turnover and low-emission vehicle availability and uptake.

We do have roles in the planning and development in our area; working with and providing guidance to residents and businesses; implementing changes to our streets and roads (working with the NSW Government); and in managing and enforcing kerbside arrangements such as parking.

We also have a leadership role and in influencing and working proactively with the Australian and NSW Governments.

**The Australian Government** is responsible for developing a national plan for zero-emission vehicles. It controls industry development and import systems, vehicle standards, research and development, and taxation. It is responsible for the framework for national approaches to electric vehicle charging, including direct investment in the national highways. It is responsible for national resilience, on issues such as fuel security and would have a lead role in introducing vehicle fuel efficiency standards. The Australian Government has announced forthcoming policies to support the uptake of electric vehicles in Australia. These are in development and evolving as this strategy and action plan is being adopted. Announcements include the development of a national electric vehicle strategy, policies to make electric vehicles more affordable by reducing tax, a fast-charging network with chargers every 150 kilometres on highways, the conversion of the Commonwealth's fleet to 75 per cent no-emission vehicles by 2025, and a plan to support low-emission freight vehicles. In early 2023 the Australian Government released a consultation paper on fuel efficiency standards with the aim of introducing standards for new cars by the end of 2023. The City will continue to advocate for broader emissions standards, including for last mile delivery vehicles. Complimentary targets and incentives on par with the USA and Europe are also required to reduce emissions from transport.

The National Electric Vehicle Strategy released in 2023 also outlines that the Australian Government is consulting to consider the case for mandatory Acoustic Vehicle Alerting Systems for light electric vehicles in Australia, to reduce potential pedestrian collisions.

**The NSW Government** is responsible for road pricing and public transport and has the majority of control of traffic management. It is responsible for developing a network for vehicle charging stations in NSW. They have committed to net-zero emissions by 2050 and are developing programs to accelerate the uptake of zero-emission technologies, including providing electric vehicle charging at destinations and in areas with limited off-street parking. They have committed to co-fund 500 kerbside charge points to provide on-street charging in residential streets where private off-street parking is limited and to co-fund electrical upgrades in some 125 apartment buildings with more than 100 car parking. They are proving grants for fast charging to accelerate the rollout of charging stations and for providing more charging in high-density areas with the aim of having around 500 fast EV charging bays (at 250 stations) across NSW. The first grant round (of three) was awarded in late 2022 for 86 stations, including two stations in our area (Alexandria and Eveleigh)<sup>6</sup>. Each station will have between 4 and 15 bays, with a minimum of two ultra-fast charging bays and two fast charging bays. The NSW Government is also committed to electrify its buses and fleet vehicles – contributing to an important second-hand market.

The NSW Government enacted electric vehicle charging provisions in *State Environmental Planning Policy (Transport and Infrastructure) 2021* in early 2023. One of the features is to enable residents without off-street parking to install their own charging infrastructure in the public domain, outside their homes, with a development application. The City is exploring the planning and development issues resulting from this. Such charging infrastructure will be subject to the City's current approach to on-street parking, and the City will not reserve kerbside parking for private vehicle chargers.

The City is partnering with the NSW Government to build a bicycle network and reallocate road and kerbside road space for walking, cycling and public transport. We will continue to advocate for public transport powered by renewable energy and to support public domain improvements around public transport stations and stops.

---

## 1.5 A strategy and action plan embedded in our local context

This strategy and action plan is designed to suit our local context. The city has a mix of housing and land-use types; good walking, cycling and public transport networks; an extensive car share network; and relatively low private car ownership.

The plan also reflects the distinctive village areas that make up the city. The availability of different charging types to facilitate the uptake of electric vehicle fleets will be different for different fleets and in different parts of the city.

### Contexts and needs within our area for electric vehicle charging

This strategy identifies the following primary contexts and needs within our area for EV charging:

1. *Charging for public transport (buses)*. This will occur at depots, largely outside the local area, and is the responsibility of the NSW Government. This will require coordination between the bus operators and the grid operators.
2. *Charging for commercial vehicles*. This will occur at depots and other origins, largely outside the local area, or in the southern industrial and urban services lands within the local area. There may be some need for destination or 'on-route' charging. This should occur off-street such as in publicly accessible charging facilities and destination parking.
3. *Charging for taxis, car share and point-to-point vehicles*. The operators of these fleets are responsible for the charging of these fleets. Indications are that they will transition swiftly, when electric vehicles become more available, due to the savings in running costs.<sup>7</sup> The City has a role to facilitate this.
4. *Charging for private vehicles, residents and visitors*:
  - Publicly accessible charging off-street. This is already occurring in our area, such as charging at retail destinations and hotels, within car parks (including two City of Sydney car parks) and at charging facilities such as those provided by the NSW Government grants and in the near future at service stations.
  - Private charging off-street. This is already occurring in residential and commercial facilities. There is a large role for the City to play in using planning controls to make sure that new developments are "EV ready", and in assisting existing developments to electrify their buildings and provide charging as appropriate. Many of our residents have access to on-site parking, either a garage, driveway or dedicated parking space, and will charge there for the reasons outlined in Section 1.3. Commercial facilities such as offices are providing electric vehicle charging for employees. This can be facilitated through the planning system to ensure new office buildings provide charging facilities in any car parking provided.
  - Charging for residents without on-site parking, or easy access to off-street parking or publicly accessible off-street charging. The City has a role to play in facilitating these residents to transition to electric vehicles and can play a short-term, leadership role, including by focussing initiatives such as the trial of pole-based charging to these areas.

Different types, speeds and charging times of current charging technology are provided in Section 4.3.

Modelling of use and uptake of electric vehicles in our area demonstrated that most people will be able to charge off-street at their homes (in their driveway, garage or in a dedicated parking bay), at work, at a depot or at another off-street charging location such as a publicly accessible charging facility.

### Current and planned electric vehicle charging in the local area

In June 2022, there were around 120 publicly accessible electric vehicle chargers in our area. The availability and type of chargers are rapidly increasing.

The NSW Government has committed to fund and co-fund publicly accessible charging, particularly in areas with lower amounts of off-street parking, at destinations and along key routes.<sup>8</sup> They announced two charging stations in our area (Alexandria and Eveleigh) as part of the first funding round in late 2022.<sup>9</sup> The NSW Government's target is "to add approximately 250 fast and ultra-fast charging stations in total across NSW, ensuring chargers are no more than 5km apart in metropolitan areas and no more than 100km apart on major roads and highways across NSW."<sup>10</sup> Retail locations, public car parks and companies such as NRMA and other private organisations are already providing charging.<sup>11</sup> Service stations are starting to provide electric vehicle charging. The NSW Government and Plug Share both provide maps of publicly accessible chargers.<sup>12</sup>



Photographer: Asad Rajbhoy / City of Sydney

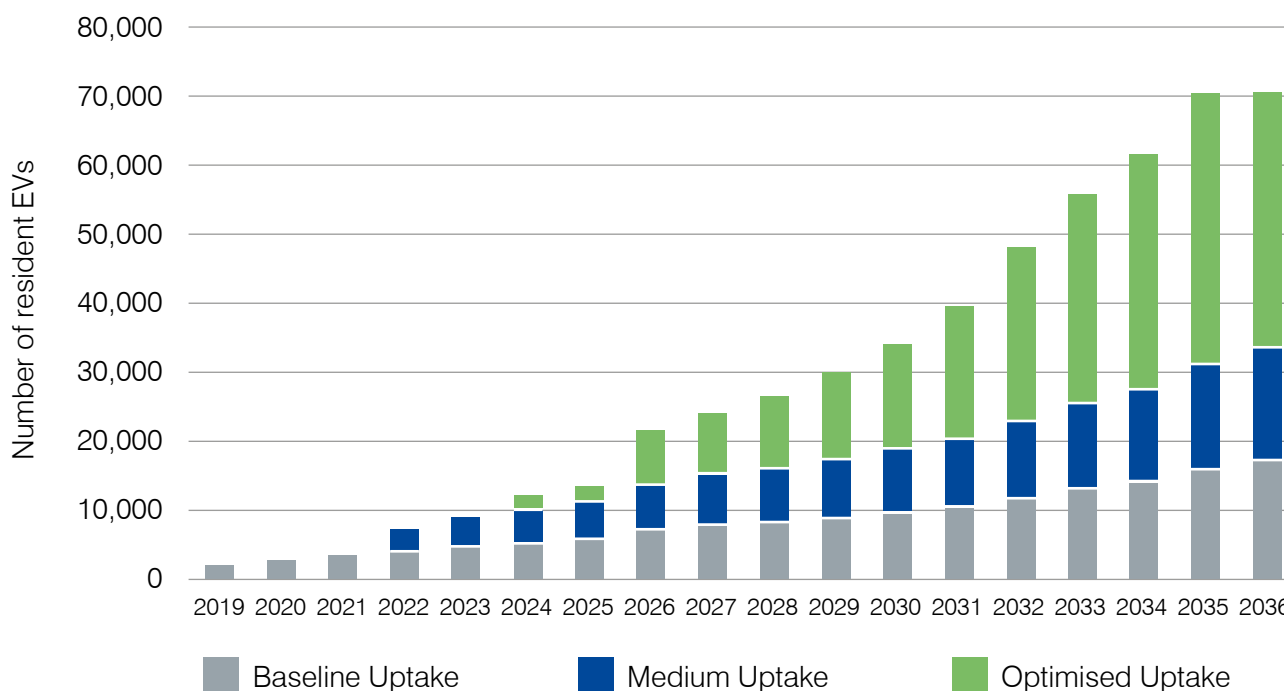
### What residential electric vehicle use are we planning for?

Box 2 provides a summary of the modelling undertaken by SGS Economics and Planning with Kinesis to support the development of this strategy and action plan.

There are relatively low levels of car ownership in our area; around 65,000 vehicles for around 246,300 residents in 2019.

About 37 per cent of households in the 2021 Census reported not owning a car. The proportion of residents that do not own a car in our area is increasing. While gross vehicle ownership is growing due to the growth in residents and jobs, it is not predicted to grow at the same rate as residential and commercial growth. This is due to the established nature of our city, our dense urban form of around 9,000 people per square kilometre,<sup>13</sup> walkable streets, access to public transport and our planning controls and parking policies. This liveable, dense and relatively connected urban form is suitable for car sharing for many households.

**Figure 1. Residential electric vehicle uptake forecasts**



Source: SGS Economics and Planning with Kinesis (2022)  
 Electrification of Transport in the City Strategy and Action Plan Technical Report<sup>14</sup>

Based on recent patterns in car ownership from 2016 to 2021 and on the projected growth in dwellings, residential car ownership in our area is predicted to grow from 65,000 vehicles in 2019 to around 71,000 vehicles in 2035. For the predicted 44 per cent increase in dwellings, there is only predicted to be an 8 per cent increase in private vehicles.

City residents currently drive on average around 9 to 10 kilometres per day. Increasing densification, mixed-use development and improvements to public transport, walking and cycling infrastructure and networks will result in this figure reducing over time.

In 2022, 5 per cent of vehicles in the local area are electric. Under natural uptake, based on current government settings, this will grow to around 45 per cent of vehicles by 2035. Figure 1 provides the

projected uptake of electric vehicles using the NSW Government policy and strategies as a baseline, the uptake under the NSW Government’s and Federal Government’s policies and an optimised uptake of 100 per cent of vehicles being electric.

This strategy and action plan aims to avoid any restrictions to City residents owning electric vehicles because of access to charging. This will require a flexible approach to respond to the rapidly evolving technology, availability and public policy environment.

We are planning for, and facilitating, a rapid uptake: aiming for 100 per cent of vehicles in our area to be electric by 2035.

Most electric vehicles can drive at least 200 kilometres before needing to charge. Ranges are rapidly increasing, with newer models able to travel 400 kilometres on a single charge. The NSW Government provides a database on the range and charging needs of various available electric vehicles.<sup>15</sup>

Most private vehicle drivers in the local area will need to charge once every two to four weeks, assuming an “empty to full” charge.

Many residents will charge at home at an off-street parking space. Car ownership and use varies across the City’s villages, and so does the availability of on-site parking at homes, including driveways, garages and dedicated parking spots.

Figure 2 provides the levels of residential car ownership and availability of residential off-street parking in the local area. Figure 3 demonstrates the variance in car ownership and off-street parking access across the city, with some areas having more off-street parking than vehicles and some areas having higher vehicle ownership than off-street parking (see Box 3).

For those that charge at home, this would add around 10 per cent to the average household electricity consumption, equivalent to \$100 per year in electricity costs.

## Box 2. Key findings from the technical analysis and modelling.

SGS Economics and Planning with Kinesis undertook best practice research, technical analysis and strategic insights to support the development of this strategy and action plan.

The technical analysis and modelling considered and forecast the uptake of electric vehicles for all vehicle fleets operating in the city for three different uptake scenarios: baseline (current policy settings), medium (more supportive policy settings based on the announced but not implemented Federal Government policy, noting that the 2022 Federal election occurred during the modelling) and optimised (‘100 percent’) uptake. For the three scenarios, by 2035:

- Baseline uptake: around 17,000 resident electric vehicles
- Medium uptake: around 31,000 resident electric vehicles
- Optimised uptake: around 71,000 resident electric vehicles.

Vehicle ownership and parking arrangements vary across the City of Sydney villages. Most residents will be able to charge at home at a dedicated parking spot, or at work. Some residents do not have access to a dedicated

parking spot and will need to use publicly available charging to fuel their vehicle. Visitors and commercial vehicles may need to charge on route while they are in the city.

Based on the modelling, in 2035, the following publicly accessible chargers may be required:

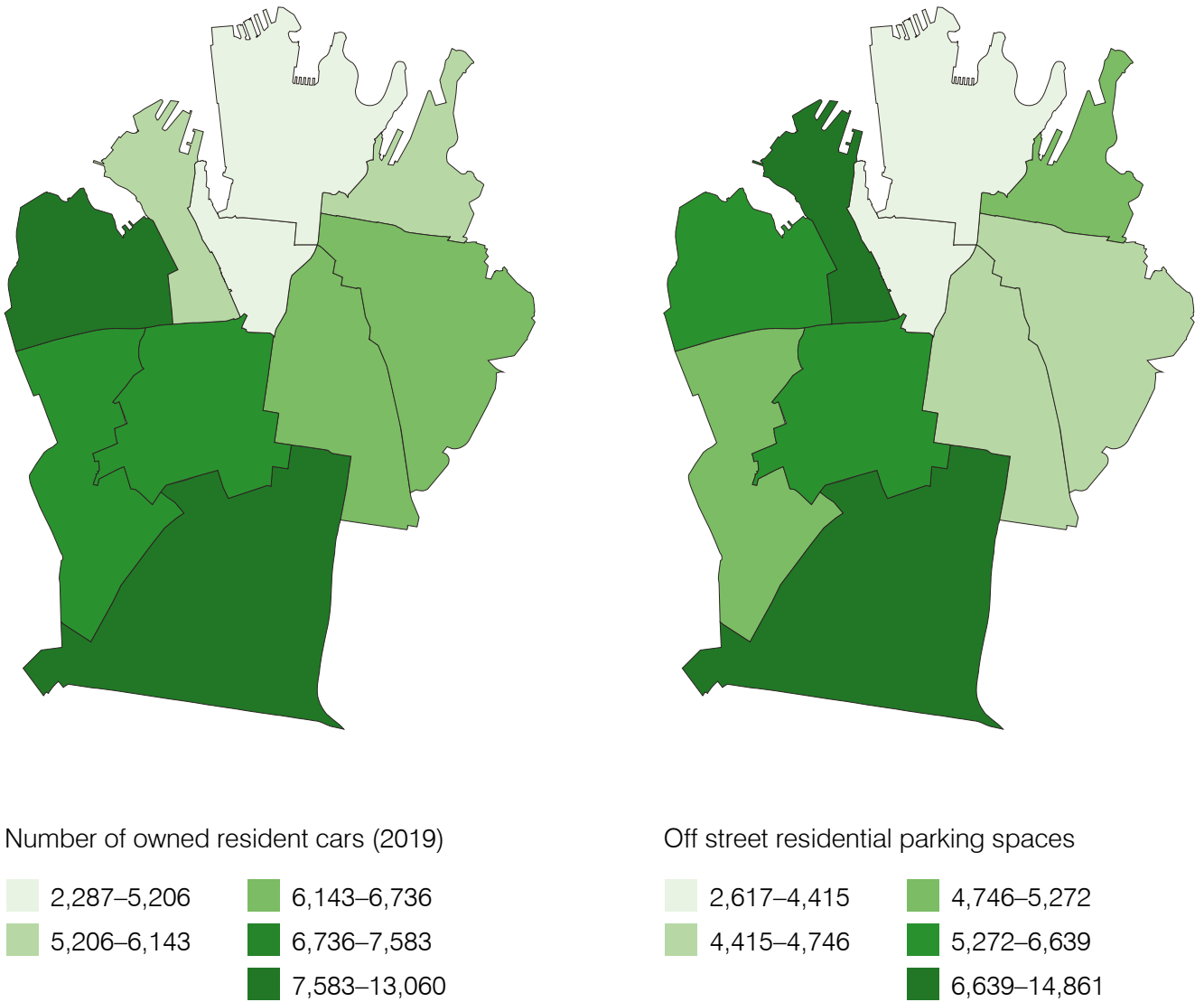
- Baseline uptake: 50-100 publicly accessible chargers
- Medium uptake: 100-150 publicly accessible chargers
- Optimised uptake: 200-350 publicly accessible chargers.

These numbers are an estimate only. They are not a cap, and there may be additional provision as commercial operators seek market share. The City will monitor the availability of public charging over the life of the Strategy and Action Plan to assess if further action is required to support the Net Zero transition.

In July 2022, there were around 120 publicly accessible chargers in the city, although they are not evenly distributed with most currently clustered in the central area.

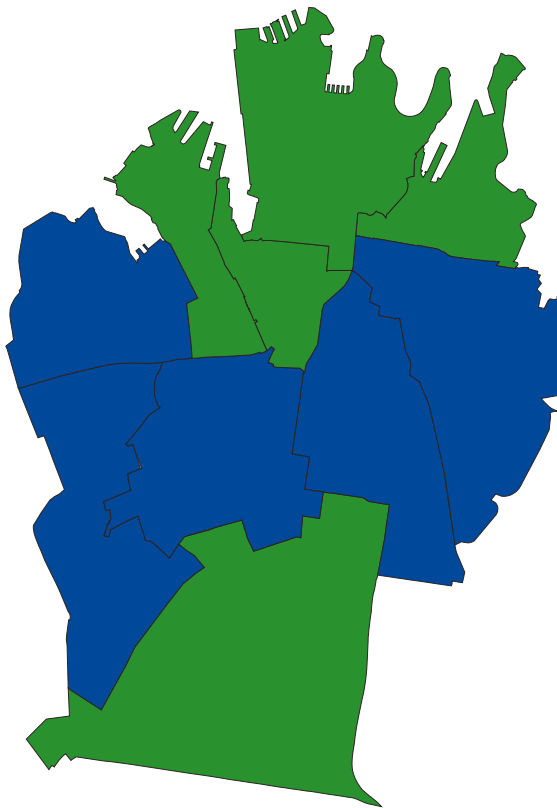
The technical report is available [\[Link\]](#).

**Figure 2. Residential car ownership (left) and residential off-street car parking (right)**



Source: SGS Economics and Planning with Kinesis (2022)  
Electrification of Transport in the City Strategy and Action Plan Technical Report

**Figure 3. Off-street parking available compared to vehicle ownership<sup>16</sup>**



Difference between owned resident cars and off-street parking spaces

- More cars than off-street parking
- More off-street parking than cars

**Box 3. Residential parking in the city**

There are around 61,000 off-street residential car parking spaces across the city. However, availability and access to off-street parking is not evenly distributed across the local area due to different types of development. Some areas, such as Pyrmont and Green Square, have greater amounts of off-street parking than some areas with more terrace housing, such as Surry Hills, Glebe and Millers Point.

There are more than 45,000 on-street parking spaces across our local area, with a range of access including restricted, non-restricted, permit and non-permit. We issue some 13,400 residential permits for residents to access on-street parking. This equates to around 20 to 40 per cent of residents needing to park on the street in some areas such as Macleay Street and Woolloomooloo Village, Newtown and parts of Glebe and Surry Hills. However, not all residents that need to park on the street need a permit to do so as kerbside parking restrictions vary across the city, for example someone who drives to work outside of the City of Sydney could park over night on their street if parking restrictions ended at 6pm and didn't start until 8am the next morning.



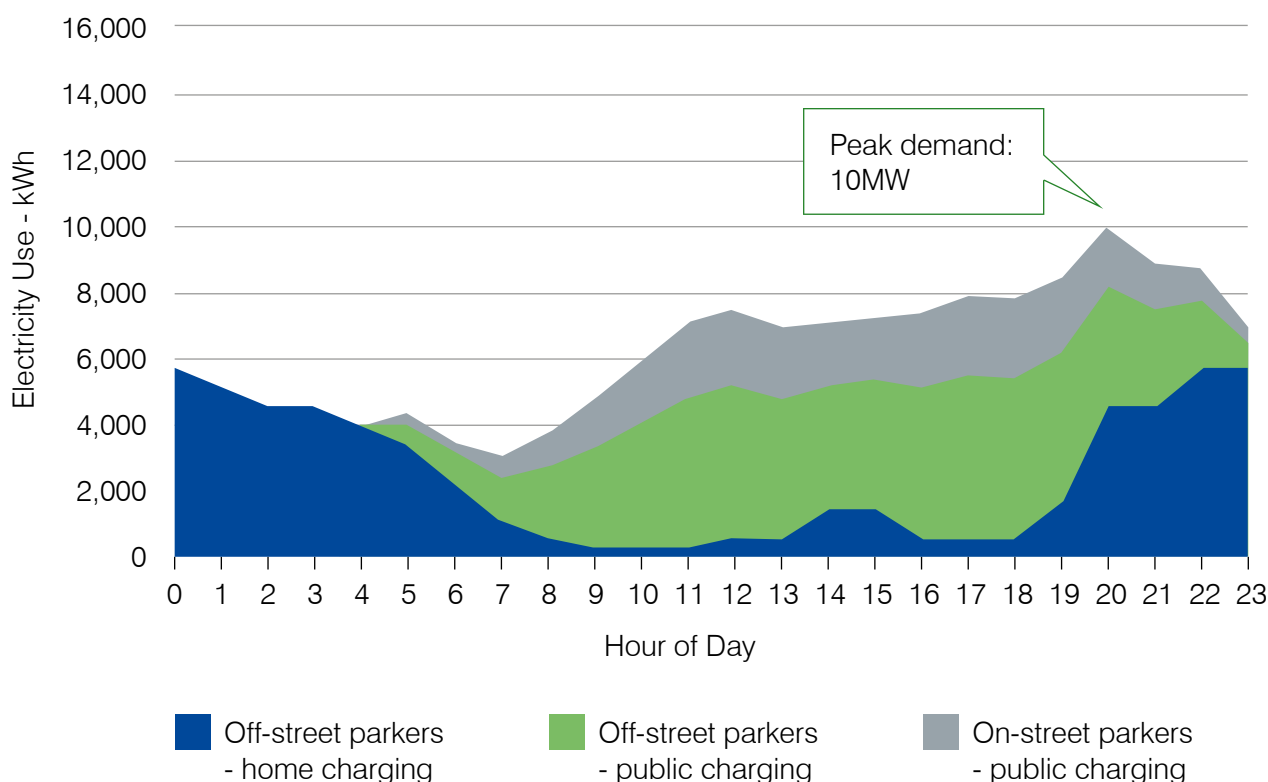
### What visitor electric vehicle use are we planning for?

In 2019, there were some 92,000 vehicle trips to work per day to the city. This is expected to grow to about 100,000 by 2035. Significant investments in public transport and cycling infrastructure are assisting this relatively low expected growth.

11 per cent of people drive to work in the city centre, however this varies across the local area, e.g. 57 per cent in the Green Square and City South village area. Most commuting-related vehicle trips are in the range of 5 to 10 kilometres. About 10 per cent of journey to work trips are attributed to local residents.

While there will be an additional 200,000 jobs in our area by 2036, the share of work related transport trips taken by driving to work is not predicted to increase accordingly, due to the above-mentioned investment in public transport, walking and cycling.<sup>17</sup> Most driving visitors to our area in electric vehicles will charge at their origin or during their trip, as they do currently. There is likely a need for some limited 'top-up' charging at their work or end destination. Most people visiting the city by car for work or recreation park their vehicle at a public parking station, their work or another commercial car park, such as a retail destination. There are about 25,000 off-street commercial office car parking spaces across the city, 1,600 off-street retail car parking spaces and 25,000 public car parking spaces. Off-street commercial and public parking are not evenly distributed across our local area.

**Figure 4. Predicted electricity use based on 100 per cent of residential vehicles being electric and the mix of charging requirements for residents**



Source: SGS Economics and Planning with Kinesis (2022)  
 Electrification of Transport in the City Strategy and Action Plan Technical Report

## Predicted energy impacts

Based on current Australian and NSW Government policies (Scenarios 1 and 2 in Figure 1), we estimate electric vehicles will add 16 per cent to the total annual residential electricity demand of our area in 2035. Under a 100 per cent take up, electric vehicles would increase residential electricity demand by 36 per cent. To put this into perspective, new residential buildings are expected to increase the current residential electricity demand by 40 per cent in 2035. At the same time, the grid is expected to green rapidly, meaning that emissions will be significantly reduced despite increasing demand for electricity.

Most residential charging occurs at home, overnight. Publicly accessible charging has a different profile, with users charging through the day. Figure 4 illustrates a mix of charging profiles based on assumptions of publicly available charging use and at-home charging.<sup>18</sup> The indicative increase to peak demand across our area would therefore be minimal; however, there would be variances across substations and charging technology.

Larger electricity-use fleets, such as buses, will charge at depots. There are 30 to 40 bus depots across Greater Sydney. The electrification of bus depots is the responsibility of the NSW Government and the electricity authority, including any upgrades to the grid required.

## 1.6 Timeframe of the strategy and action plan

A strategy for 2035, an action plan for today and the next five years.

Electrification of transport, both in fleet uptake, availability and charging technology is rapidly evolving. This strategy and action plan will enable us to adapt to the rapidly changing environment in the short term, with a longer-term view of the next 10 to 15 years with the growth of electric vehicle use and the associated infrastructure.

The availability and affordability of electric vehicles along with fleet turnover means that this is a time of transition. The average vehicle has a useful life of 15 years. People purchasing a vehicle now are unlikely to purchase a new vehicle for a few years. Some fleets are anticipated to turnover much quicker, such as car share, taxis and uber-type vehicles, referred to as point-to-point. Operational cost savings will drive this transition, especially as upfront price parity between electric and internal combustion models is reached.

This strategy and action plan is to provide support for the transition at this crucial point in time. The City assumes this strategy and action plan will need to be reviewed after five years to determine whether any new actions are necessitated by the rapid evolution. Eventually electric vehicles will become business as usual and a continuous strategy to support electric vehicle uptake should not be needed.

## 1.7 Exclusions

This strategy and action plan does not cover the technology of charging, type of chargers or business models for providing charging.



Photographer: Nyasha Nyakuengama / City of Sydney

## 1.8 Strategic framework

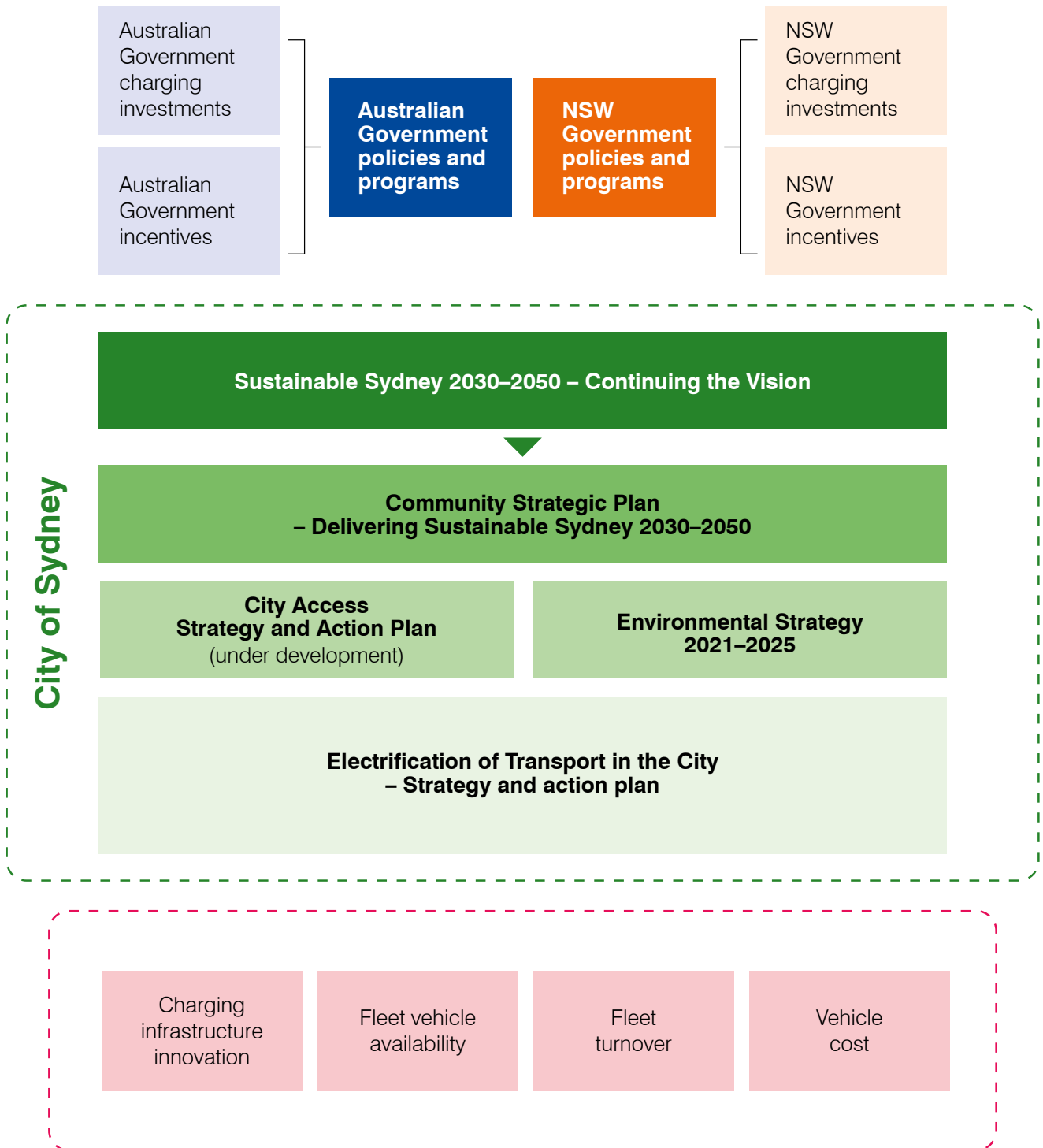
*Sustainable Sydney 2030–2050 – Continuing the Vision* sets the community’s vision for a city for walking, cycling and public transport, with more public transport and zero-carbon vehicles and more people choosing to walk and ride bikes. The city is greener and calmer with more space for people on the streets.

This strategy and action plan facilitates the ambitions of *Sustainable Sydney 2030–2050 – Continuing the Vision* and provides actions to achieve the aims of the City’s *Community Strategic Plan – Delivering Sustainable Sydney 2030–2050*, *Environmental Strategy 2021–2025*<sup>19</sup> and *City Access Strategy and Action Plan* (under development). It also reflects the Australian and NSW Governments’ policies and directions, including publicly accessible electric vehicle charging to facilitate electric vehicle uptake, along with market forces such as electric vehicle availability, electric vehicle affordability, the market-based provision of electric vehicle charging, evolving and emerging technologies, and fleet turnover (Figure 5).

*Sustainable Sydney 2030–2050 – Continuing the Vision* sets overarching targets that this strategy facilitates:

- By 2035, we will achieve net-zero emissions in the City of Sydney local area.
- By 2050, there will be a minimum overall green cover of 40 per cent, including 27 per cent tree canopy cover.
- By 2050, people will use public transport, walk or cycle to travel to and from work. This includes 9 out of 10 people working in the city centre and 2 out of 3 people working in the rest of the local area.
- By 2030, every resident will be around a 10-minute walk to what they need for daily life.

**Figure 5. Strategic context of the strategy and action plan**



# 2. Strategy and Actions

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## 2.1 Creating a city for walking, cycling and public transport

### **Reducing driving is the best way to address carbon emissions from transport**

#### **Approach**

To achieve our net zero by 2035 target, significant changes will be required to the transport system in our city. These changes involve reducing and eliminating tailpipe emissions, speeding up the shift from private cars to walking, cycling and public transport, transitioning public transport and private vehicle fleets to zero-emissions fuel sources and supporting off-street charging for electric vehicles.

Facilitating a reduction in transport emissions through supporting a mode shift to walking, cycling and public transport is the most effective way to respond to the climate emergency and to support our community to transition to net zero.

Motor vehicles will continue to be an important access option, including for servicing, trades and deliveries, as well as for older people and people with disability. These vehicles will need to be electric in a net zero future. Reducing non-tailpipe emissions<sup>20</sup> will require continued prioritisation of shared forms of motor vehicle use wherever possible, including car share, taxis and point-to-point services. These fleets will also need to be electric.

#### **Justification**

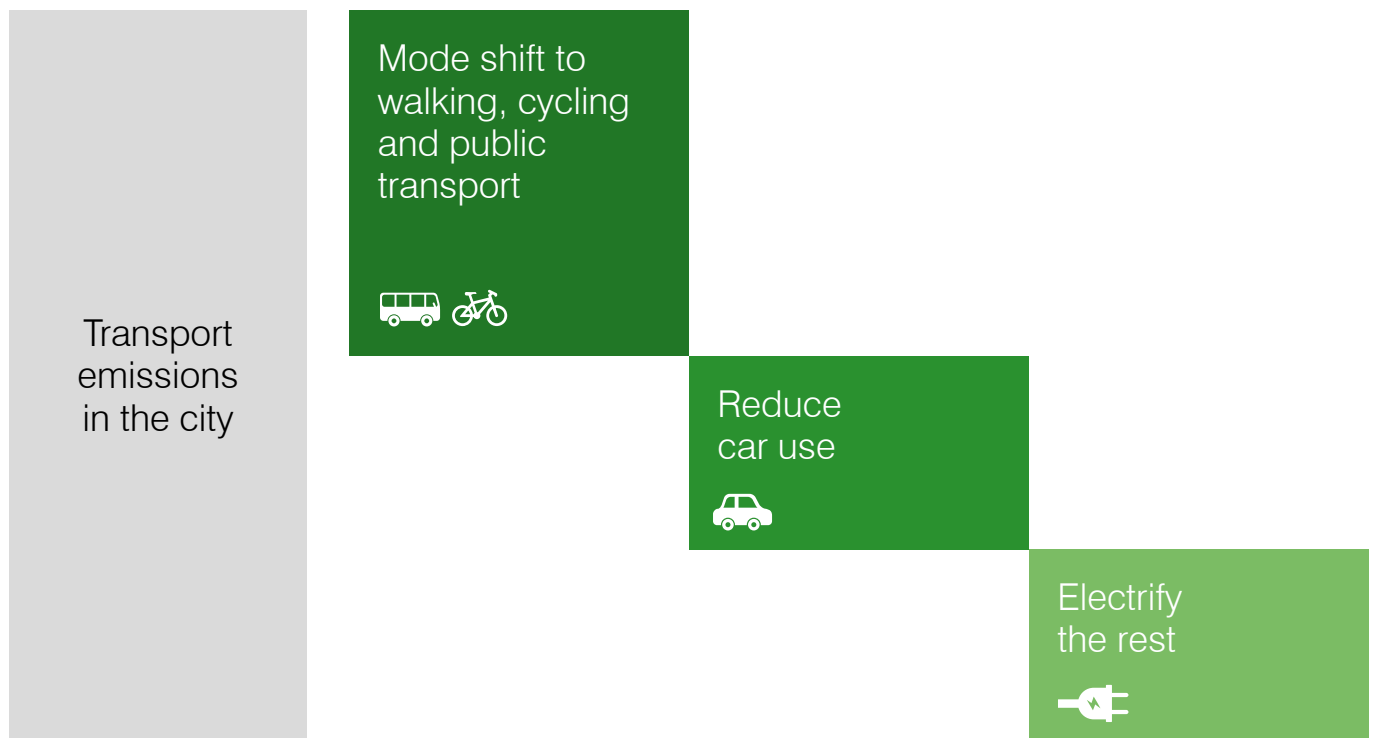
The biggest reduction in transport emissions will be through a shift to walking, cycling and public transport. The electrification of all residential transport in the city would reduce residential carbon emissions by 7 per cent. By comparison, a mode shift away from car usage based on current programs and policies will reduce emissions by 23 per cent and will bring additional improvements to access, equity and safety.

Public, shared and active transport modes reduce emissions, while having other benefits such as reducing congestion and competition for scarce parking spaces for people who need them, and improving people's health and the city's economy. Walking and cycling are the least carbon intensive transport modes, so they are integral to a sustainable city. Public transport, while still involving some level of carbon emissions, is efficient at serving many people, reducing individual carbon footprints. These modes also are the most efficient users of the city's limited space.

Electric cars are as space inefficient as other cars. The City does not support providing priority access on roads or to kerbside parking, including for charging. This is especially the case in Central Sydney and surrounding areas. For the limited amount of public on-street charging the City envisages, we will reserve the kerbside for charging only (not for parking only). We will not reserve the kerb for charging that is not available to the public.

The principal action the City will take to reduce transport-related emissions is to continue facilitating and enabling reduced vehicle use through safe and attractive walking and cycling infrastructure and supporting public transport and car sharing.

**Figure 6. Reducing transport emissions in the city – illustrative only**



Further details on the City's approach to creating the City for walking, cycling and public transport are outlined in *Sustainable Sydney 2030–2050 – Continuing the Vision* and *City Access Strategy and Action Plan* (under development).

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**Action 1:** Work with the NSW Government to reduce vehicle kilometres travelled (VKT) by all vehicle fleets by creating a city for walking, cycling and public transport to reduce transport-related emissions.

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## 2.2 Government pricing and policy that prioritises electric vehicles over internal combustion engine vehicles

### **Advocate for policies that prioritise electric vehicles over internal combustion engine vehicles.**

#### **Approach**

We will advocate for more stringent fuel and emissions standards for vehicles to facilitate the increased availability, affordability and diversity of electric vehicles in Australia. The Australian Government's 2023 Discussion Paper and intention to introduce improved standards is an overdue but welcome move.

Advocating for a transition plan for all new vehicles in Australia to be electric by 2030 requires the rapid adoption of emission standards to increase the availability, diversity and affordability of electric cars. This would facilitate an earlier transition of key fleets, such as car share, taxis and loading and service vehicles (see Section 2.3).

#### **Justification**

The lack of more stringent emissions standards has been noted by major car manufacturers and has been identified as a reason to not bring newer electric vehicle models to Australia sooner, acting as a disincentive for their availability in Australia. Many other countries are transitioning much faster than we are. Europe has three times more electric vehicle models available to buy than Australia. All new vehicle sales need to be electric by about 2030 in order for the fleet to be electric by 2035. Targets and incentives should be considered.

---

**Action 2:** Advocate that the Australian Government immediately raise fuel and emissions standards to make electric vehicles more attractive, and to avoid Australia receiving vehicles not saleable elsewhere.

**Action 3:** Advocate that the Australian Government develops a transition plan for new vehicles to be zero emissions by 2030 and powered by a fully renewable electricity grid by 2035.

---

### **Advocate for pricing signals that prioritise electric vehicles over internal combustion engine vehicles.**

#### **Approach**

Any subsidies or incentives should, as a priority, support people to not use cars ahead of facilitating uptake of electric vehicles.

Any road pricing mechanisms (such as road user charges) should make electric vehicles more attractive than internal combustion vehicles – especially for vehicles that spend the most time on the road network.

A Low Emissions Zone in the city centre, where many taxis and service vehicles travel could incentivise operators to transition fleets to electric to reduce operating costs and assist in the City achieving net zero by 2035.

#### **Justification**

There has been significant increase in electric bike sales and use, potentially in response to the Covid-19 pandemic. Any government subsidies to encourage fleet electrification should also apply to electric bicycles, and other forms of electric micromobility.



Photographer: Katherine Griffiths / City of Sydney

There is an opportunity for broader road pricing, incorporating motorway tolls into a more comprehensive system that focuses on distance travelled, congestion and emissions. It could encompass various parking charges, such as the Parking Space Levy, to ensure a more coherent focus on travel demand management.

Changes to road user charges for electric vehicles were announced by the NSW Government but commencement deferred. As revenue from fuel excise declines, revenue streams created by pricing all vehicles (including electric vehicles) become more important. A Low Emissions Zone in the city centre could create a springboard for a city-wide system.

---

**Action 4:** Advocate that the NSW Government investigates pricing mechanisms to incentivise the transition to electric vehicles in the city centre, including a low-emissions zone, parking levies and kerbside charging.

**Action 5:** Advocate that subsidies for electric vehicles (including for charging) proposed by the Australian and NSW Governments reflect the City's fleet transition hierarchy (i.e. e-bikes and other micromobility and public transport first then commercial, and finally private vehicles)

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## 2.3 A transition for electrification that focuses on high-impact transport fleets

### Prioritise electrification of different fleets based on impact

#### Approach

Vehicles are important to the economic functioning of our city. Delivery and service vehicles are vital for productivity, buses provide efficient transport for many people, point-to-point and taxis provide valuable transport over short distances such as the 'last mile',<sup>21</sup> and many residents and visitors are reliant on vehicles to meet their mobility needs.

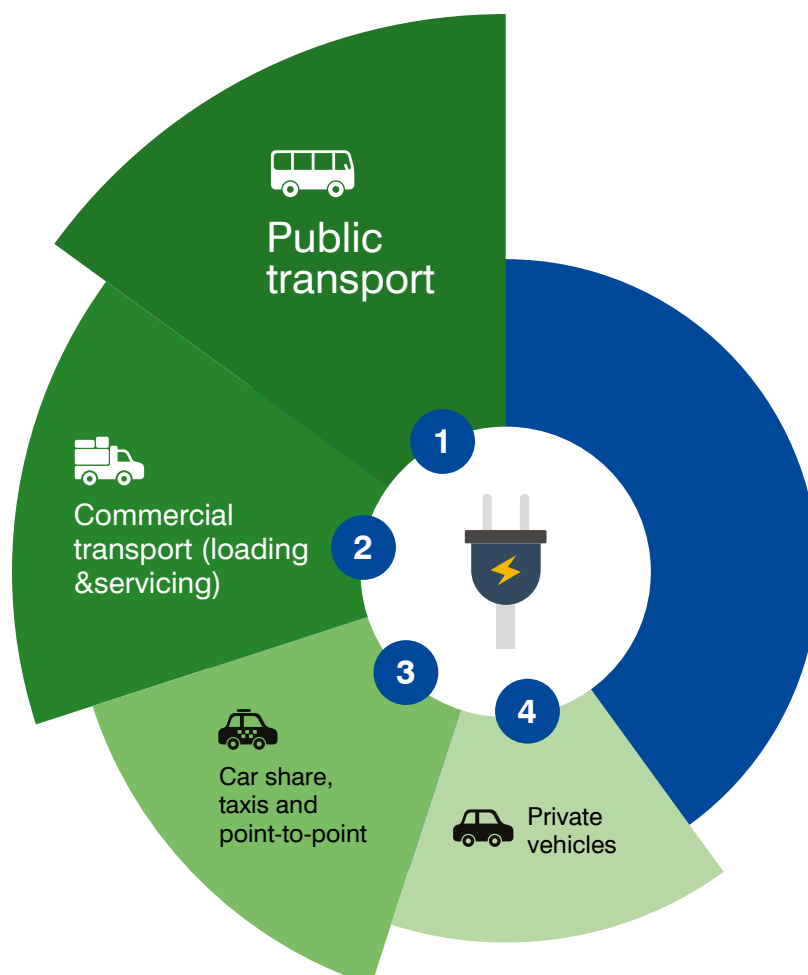
This strategy and action plan supports a city for walking and cycling first and foremost while facilitating and encouraging the environmental

benefits of electric transport, particularly in public transport and commercial fleets, which will also reap operational benefits. It describes the opportunities and challenges for electrification across the various transport fleets operating in the city, advocating for the priority electrification of fleets which have the most impact, in terms of kilometres travelled, moving people, emissions and impacts to the public domain such as noise (Figure 7).

#### Justification

Most transport-related emissions, around 60 per cent in our area, come from non-residential transport. While the transition to private electric vehicles is very important, the greatest impacts for reducing emissions, noise and air pollution will come from electrifying the bus, commercial vehicle, taxi and point-to-point fleets. These are also the fleets that people in the City of Sydney are most exposed to, especially in the city centre.

**Figure 7. Priorities based on impact for the electrification of transport in the city fleets**



## Electrification of the City's vehicle fleets

### Approach

The City will manage and analyse low- and zero-emissions options for the City's light and heavy vehicle fleets and use fleet analytics to encourage low-emission driving behaviour and reduce carbon emissions.

Our fleet is diverse, reflecting the different operational functions of the City. We are confident that our passenger fleet will continue to transition.

However, unlike the passenger electric vehicle market, the electric truck and other plant industry is still reasonably immature. Availability and cost of suitable vehicles is a key consideration, but other factors the City needs to consider include:

- risk relating to reliability and maintenance, which diminishes as the market becomes more mature
- operational suitability
- charging requirements, including in City depots (which are also the charging bases for the City's passenger fleet).

The City therefore adopts a risk-based step-change approach. This is designed to ensure we maximise the electrification of the fleet without incurring significant and potentially unmanageable risk, and always seek value for money with our use of the community's funds.

Within that approach, we will continue to maximise the transition of our heavy vehicle fleet as they become available. We are aiming to have at least one electric vehicle of each type as soon as possible, so we can assess their effectiveness. The City can then proceed to broader procurement based on the results of that assessment. We anticipate the full transition of the non-passenger fleet may take 10 years, but we will be well-positioned to accelerate if possible.

We will also explore appropriate procurement approaches for contracted services, such as waste collection.

When we upgrade our depots, we will plan for electric vehicle charging for our fleets. We will advocate to the State and Federal Government that grants to encourage fleet electrification include local government depots to facilitate and encourage local governments to transition their fleets.

### Justification

The City was one of the first organisations to start converting its fleet of vehicles to hybrid and electric, including a commercial electric vehicle. About 8 per cent of the City's fleet (19 vehicles and 1 truck) are fully electric and we have 73 hybrid cars and trucks. The City acquired its first electric truck in 2021 as a trial, a diesel truck which was converted to electric.

Governments, such as the City, have a role to encourage the uptake of more affordable electric vehicles by creating a second-hand market as fleet vehicles are sold.

---

**Action 6:** The City will maximise electrification of its light fleet by 2030 and heavy fleet as soon as possible.

**Action 7:** The City will encourage the uptake of electric vehicles to be used in our contracted services through our procurement processes (including waste collection, cleansing and maintenance).

**Action 8:** Advocate to the State and Federal Government that grants to encourage fleet electrification include local government depots to facilitate and encourage local governments to transition their fleets.

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Image: Transport for NSW / City of Sydney

## Electrification of public transport fleets

### Approach

The City will advocate for the prioritisation of electric bus fleets by routes that have the most impact on residents, public amenity and health. This includes high-frequency bus routes, routes that traverse our high streets and areas with large residential populations. These are the areas that will benefit the most from reduced noise and air pollution (Figure 8).

### Justification

Buses create a lot of noise and air pollution; 78 per cent of Transport for NSW's emissions are from buses.<sup>22</sup> A trial by the NSW Government found that a transition of the full fleet of buses to electric buses could achieve between \$1.1 and \$1.9 billion in environmental cost savings.<sup>23</sup>

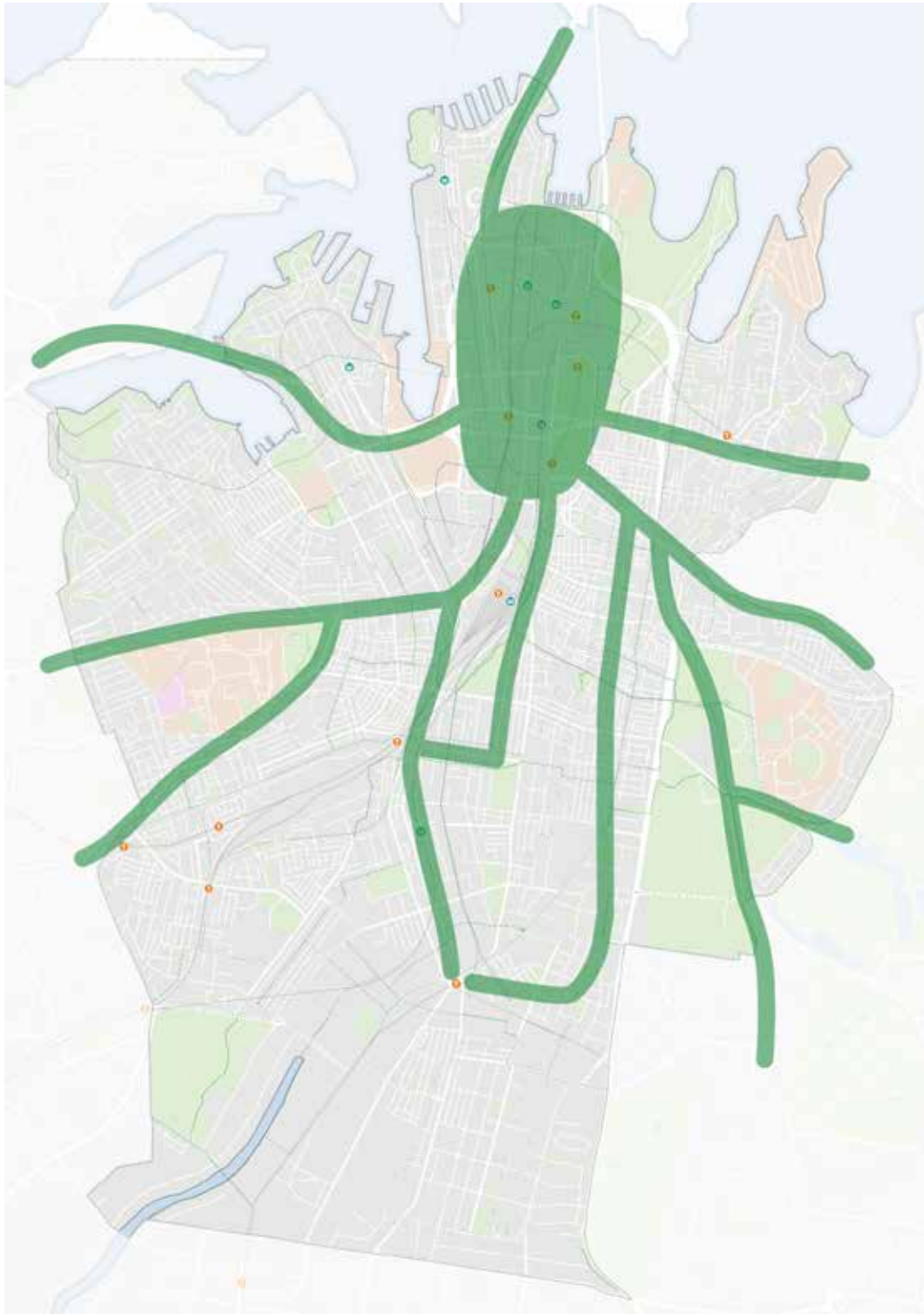
There are 4,090 buses operating in the Greater Sydney area; about 50 to 100 of these are in operation in the city at any time. About 90 per cent of these are standard buses. There are only 70 electric buses operating in the Greater Sydney network. The NSW Government has a target to transition the Greater Sydney bus fleet to electric by 2035,<sup>24</sup> accelerating the pace from 2023 onwards.

Bus fleets will be charged at the depot. These are spread across Greater Sydney. The City will advocate that depots serving densely populated and active streets such as the city centre and major gateway avenues should be priorities for electrification, and transitioned by 2030 at the latest.

---

**Action 9: Advocate that the NSW Government accelerates the electrification of the bus fleet serving the City of Sydney, prioritised by depot and corridor, to reduce noise, localised pollution and carbon emissions by 2030.**

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**Figure 8. Key bus corridors through the city – illustrative only**

Source: SGS Economics and Planning with Kinesis (2022)  
Electrification of Transport in the City Strategy and Action Plan Technical Report

## Electrification of service vehicles

### Approach

Service vehicles, while important to the necessary function of the city, have a major impact on emissions and the public domain in terms of space and noise. We will advocate for the rapid transition of commercial vehicles, including for relevant subsidies and incentives available for work-related vehicles. Moreover, a low emissions zone could help promote fleets' uptake of electric vehicles, as discussed in Section 2.2.

There is an opportunity, in conjunction with shared and public loading facilities (hubs), to facilitate micromobility fleet options for last mile delivery. The City in partnership with Transport for NSW provides a courier hub at the Goulburn Street car park, where deliveries can be transferred from a van to a bike or walked to the final destination.

Increasing efficiencies in freight and servicing vehicles, for example through consolidated procurement and loads to reduce empty running, shared and public loading hubs, and lockers and other storage for deliveries, will reduce the emissions associated with these vehicles, as well as improve congestion and productivity.

### Justification

The electric and low-emission commercial vehicle market in Australia is immature in comparison to the electric car market, with long lead times. Both new and used electric truck retail markets need to further develop and expand to enable prices to be more competitive and represent better value for money. Further significant developments via Original Equipment Manufacturers (OEMs) are not expected to flow through to retailers in the coming 12 to 24 months, making the cost of ownership not yet comparable with diesel variants in the commercial space.

However, the availability of electric commercial vehicles is increasing. The Electric Vehicle Council reported that "the van and truck sector has seen substantial growth in the [six months to March 2022], with the sector now having access to 21 different trucks, utility vehicles (5), vans (6), and trucks (10)."<sup>25</sup>

The impact of commercial vehicles is not evenly distributed across the local area. There is a significant freight and logistics presence in the southern portion of our area, particularly as it connects to Port Botany and the Sydney Airport.

Many delivery vehicles traverse our city centre every day, about 35,000 vehicle movements, but for most the city centre is not their point of origin or end-of-route destination. While the City provides kerbside loading zones, it is unlikely charging will be needed at them. Most delivery and servicing vehicles will charge at their point of origin or depot. Where appropriate, new off-street loading hubs could also provide brief charging windows.

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**Action 10: Advocate that the NSW Government accelerates the transition of service and delivery vehicle fleets to electric vehicles, including the use of e-bikes and other micromobility modes.**

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## Electrification of car share vehicle fleets

### Approach

Car sharing supports households and businesses who need infrequent access to a motor vehicle. The availability of car sharing reduces vehicle ownership and vehicle use. The City's Car Sharing Policy has already set benchmarks for fleet emission standards. An electric car-sharing fleet would contribute further to emissions reduction.

Car share is a unique fleet in that each vehicle in the City of Sydney has a "depot" in the form of its dedicated on-street space. While car share operators are responsible for the fleet, each individual user relies on the previous user to return the car ready for the next user. With users paying for time as well as distance, the current increased time for a user to charge a vehicle if required (compared to a quick refill for an ICE vehicle) could constrain the use of the car.

When there is a wide choice of publicly available charging, including fast charging, on-street charging for each dedicated car share bay or

vehicle is unlikely to be demanded. The cost and impact is not justified by the charging requirements. It is expected that operators will develop systems where they, or their members, refuel (or recharge) the cars, as occurs with the current fleet. The City however recognises the potential for pole-based charging in existing or potential future car share spaces; these would be commercial arrangements between the charging providers and car share operators. There is also the potential for the development of mobile charging solutions.

The City will continue to work with car share operators to transition their fleet to electric vehicles through our regular Car Sharing Policy reviews. The approach will include a target date in the City's Car Sharing Policy for 100 per cent fleet transition (most likely 2030). In future reviews, there will also be transitional benchmarks, reflecting a reasonable and predictable uptake, noting that the electric vehicle options suitable for mass fleets such as car share are currently limited. The City's Policy reviews involve extensive consultation with operators, members and the broader community.

### **Justification**

There are around 850 car share vehicles across the local area. Each of these vehicles helps reduce vehicle emissions and reduce, delay or avoid car ownership and the associated competition for parking. The Car Sharing Policy currently mandates low emission vehicles. Car share vehicles in the local area are used on average 35 kilometres per day over about 5 hours, noting inconsistent usage patterns<sup>26</sup> and variations in each member's trip purpose. Based on this, a car share vehicle would be required to charge on average about once every two weeks. Users are generally expected to return a car share vehicle with a minimum amount of fuel.

Car share operators are responsible for the maintenance and condition of their vehicles. Early engagement with car share operators suggests that they will transition their fleets to electric vehicles for operational reasons once vehicles become available and affordable. Operators have existing systems for refuelling their internal combustion fleets. These are likely to be transferable to an electric fleet, when the expected growth in

charging opportunities occurs. The City will work with operators to better understand the charging options in the initial stages of fleet transition (when fast charging opportunities will be less available).

Car share bays take the form of on-street bays in parking spaces provided by the City and off-street bays provided within the car parks of residential, commercial and retail developments. Off-street bays can provide charging facilities to car share vehicles more easily than on-street bays, enabling convenient charging while the car is between bookings. The planning system can be used to ensure new development provides charging facilities in all car share bays.

The City uses the Car Sharing Policy to establish the obligations of eligible operators. Amending the Policy to set the expectations for the predictable transition to an electric fleet is appropriate and builds on a legacy of requiring low environmental impact vehicles.

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**Action 11: Work with car share operators to develop a model to electrify their fleet by 2030. This includes changes confirmed via periodic policy review and that are cost neutral to the City.**

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## Electrification of point-to-point and taxi fleets

### Approach

We will advocate for the rapid transition of taxis and other point-to-point services to electric fleets. This will be assisted by measures that increase the availability and affordability of electric vehicles (Actions 2 to 5). Currently, there is not a suitable mass fleet option available in Australia. When one is available, fleets are expected to transition quickly, given the operational cost savings.

After that, electric taxis would then become available to the second-hand car market after three to four years of use, increasing purchase options in the late 2020s.

### Justification

There are about 25,000 taxi movements in the Sydney city centre on an average weekday. Taxis travel about 200 to 300 kilometres per day. Most electric taxis will charge at a depot or other point of origin on a dedicated charger to meet their range needs.

There may be some need for refuelling during use. This would need to be met with rapid charging during a shift. The NSW Government's fast-charging network on major routes will play a role here. The development of charging options in service stations (or a similar charging facility) will also contribute, and facilities such as food and beverages, car washes and bathrooms would incentivise taxi drivers to take short multipurpose breaks that could include charging.

There may be some need for dedicated rapid charging at key locations to supplement point-of-origin charging. Airports are one potential location. Charging at taxi ranks, especially in the city centre, is unlikely to be a feasible or useful option for taxis.

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**Action 12: Advocate that the NSW Government accelerates the uptake of zero-emission vehicles by point-to-point operators, including taxis.**

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## 2.4 Supporting electric vehicle charging options in ways that limit the impact on the public domain

### Respond to the specific charging needs of different City villages

#### Approach

Different transport fleets across the local area will have varying needs for electric vehicle charging. Most residents and workers will charge at home. The need to provide on-street charging is largely limited to areas with limited access to and availability of off-street parking and to the availability of publicly accessible rapid-charging facilities.

Most residents in the city have either off-street residential parking or utilise parking permits to park on the street. The local areas with higher levels of vehicle ownership are also generally areas with high levels of off-street parking (for example, Green Square and City South village). However, some areas of the city have limited access to off-street parking, such as such as Millers Point, Macleay Street and Woolloomooloo Village, Newtown, parts of Pyrmont, Glebe and Surry Hills (Figure 3). Some areas also have relatively limited access to other public charging settings, such as large shopping centres, or City controlled car parks. The City may need to enable publicly accessible charging in village locations to supplement other charging options until the market develops (see Page 33).

Around 100 publicly available charges are currently available in the city, including at the City's Goulburn Street and Kings Cross car parks. Due to the concentration of commercial activity in the city's south, there may also be some need for publicly accessible fast charging for commercial vehicle fleets. However, it is expected that most commercial fleets will charge at their depot or point of origin.

There will not be a need for the City to provide on-street publicly accessible charging in the city centre. Commercial car parks and destination car parks currently provide charging for the public, and this is anticipated to continue.

### Justification

Car ownership and access to off-street parking are fairly evenly matched across the city, with the exception of Pyrmont which has high levels of off-street parking and lower levels of car ownership, and areas such as Macleay Street and Woolloomooloo Village, Newtown and parts of Glebe and Surry Hills which have limited access to off-street parking compared to car ownership rates (Figure 3).

Under the City's optimised scenario, some 200 to 350 publicly accessible chargers are needed in or near the city, but the density required differs across village areas. These would supplement the already over 100 publicly available chargers in the local area, concentrated in the city centre.

### Support off-street charging in new buildings

#### Approach

New buildings in our area will be "EV ready". The City is supporting the forecast growth in electric vehicle uptake by requiring new commercial and residential developments to provide an appropriate number of shared electric vehicle charging parking spaces, along with a conduit to all parking spaces to enable the easy provision of electric vehicle charging at dedicated spaces when required.

The City's planning controls will also facilitate the provision of electric car share vehicles within developments by requiring on-site car share bays in new developments to be fitted with electric vehicle charging facilities in common property ownership.

We will investigate requirements for new commercial development to provide electric vehicle charging facilities in visitor parking spaces, including retail customer parking spaces. This could help provide access to electric vehicle charging facilities to residents who do not have a way of charging at home and for 'top-up' refuelling opportunities.

As power demand increases over time, building managers can implement load balancing, individual metering and other models that all use the same underlying infrastructure ("EV ready").

### Justification

Planning controls are an important part of facilitating the transition to electric vehicles and an element within the City's control.

New development should meet the future needs of building users and planning controls can ensure this happens.

Planning controls should not cause development to overprovide or overbuild infrastructure for electric vehicle charging that would exceed the forecast uptake.

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**Action 13:** Prepare draft planning controls in the Sydney Development Control Plan 2012 requiring new development to be 'electric vehicle ready', with car parking spaces enabling electric vehicle charging.

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## Support off-street vehicle charging in existing buildings

### Approach

The City will work with the NSW Government, the energy sector and building owners in priority sectors to understand and help facilitate options for charging provision in existing buildings and to promote publicly accessible charging. This will help building owners to make more informed decisions about what charging is, or is not, required on-site.

We know EV charging and electrification of existing apartment buildings can be complex for owners and renters. We will undertake research to explore the technical, governance and management challenges facing strata communities. The research will include an in-depth study of a small sample of the different types of apartment buildings in our local government area in terms of size, age and complexity.

We will assist building owners in priority sectors to investigate electric vehicle charging options as part of a broader energy management plan. Our Green Building Grants supports Owners Corporations and building owners in the accommodation sector to undertake environmental ratings, certifications, audits and assessments for existing buildings to be resource efficient and achieve net zero emissions by 2035.<sup>27</sup>

We will also provide guidance on electric vehicle charging options through our energy action plans in our Smart Green Apartments program.<sup>28</sup> Through our Smart Green Apartments program we work with an intake of Owners Corporations annually, supporting them to improve efficiency, sustainability and resilience of their apartment buildings and residential precincts.

While there are challenges with retrofitting, grid supply and heritage constraints, the City envisages ongoing expectation from people in private buildings with off-street parking to charge their electric vehicles there. They may see other people with off-street parking taking advantage of the opportunity – charging when they like at a speed

that suits their needs, potentially using electricity they themselves generate. Feasibility of occupiers meeting that demand will vary from building to building. We will investigate classifying electric vehicle chargers as exempt development in local planning controls so they don't require planning approval and this will apply to the installation of chargers in shared, commercial and non-private contexts.

### Justification

The more people that can charge in their own off-street parking, the less the demand for other charging.

The NSW Government Office of Energy and Climate Change has developed guidance for residential strata buildings<sup>29</sup> and for commercial office buildings<sup>30</sup> on electric vehicle charging. NSW planning controls allow for electric vehicle charging for private use to be installed without a development application.

There is a significant stock of existing apartment buildings and offices with off-street car parking that can be investigated for retrofitting to support electric vehicle charging. Solving this challenge in place matters. There is no 'one-size-fits-all' solution, as differences in buildings' age, location and size and other factors require a mix of information, incentives and guidance. Some buildings may not be suitable for retrofitting. One consideration, it that there are a large number of residents in the city that rent rather than own their dwelling. Under current systems, it is a challenge to facilitate them to be able to access electric vehicle charging on-site.

By 2035, at 100 per cent uptake, around 5 to 20 chargers will be needed in the average strata building, noting that the size, availability of off-street parking, age and location of strata buildings vary across our area (Section 1.5).

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**Action 14:** Work with governments, industry, peak bodies and strata communities to support electrification of buildings and upgrades to enable onsite electric vehicle charging.

**Action 15:** Fund electric vehicle charging feasibility assessments as part of net-zero plans and energy audits in Green Building Grants and provide guidance on electric vehicle charging through our energy action plans in the Smart Green Apartments program.

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**Support publicly accessible vehicle charging in ways that assist the transition to electric vehicles while limiting the impact on streets and public space**

**Approach**

Electric vehicle charging will take place primarily off-street, through a combination of charging facilities in residential and commercial buildings and through market-driven, private approaches to charging stations accessible to the public.

The City already provides publicly available charging stations in two of its car parks: the Goulburn Street Car Park and the Kings Cross Car Park.

To supply confidence to the burgeoning public charging network, the City will lead the early provision of publicly accessible chargers. We will work with service providers to deliver a number of paid publicly accessible chargers in our off-street car parks at no or minimal cost to Council. In addition, we will work with private sector providers to trial paid on-street publicly accessible charging in residential areas with constrained private charging opportunities. This would limit the impact of charging infrastructure on the public domain, especially footpaths. It is important that this is paid rather than free parking / charging to



Photographer: Katherine Griffiths / City of Sydney

meet the equity aims of this Strategy. The aim is to provide additional public charging in the first few years of transition during which the private sector establishes a more extensive, scalable charging network.

Charging options are rapidly being developed that reduce impact on the public domain from charging infrastructure. On-street models can be explored to respond to a particular area's needs if required. This would be managed to support access and limit impact on the public domain as well as costs and the use of public funds for private vehicle use. For example, charging directly from power poles is a model that uses infrastructure already in the public realm, adjacent to parking. We will include areas with relatively low availability of potential public charging options in trials and rollout of on-street charging.

The City will also work with operators of commercial car parks to promote charging in these locations and we will work with the NSW Government to make sure the public know available charging locations.

## Justification

To protect the liveability of our neighbourhoods for a diverse population and encourage increased use of public transport, walking and cycling, the City, through its Neighbourhood Parking Policy, prioritises use of on-street, kerbside parking spaces for residents, businesses and their visitors and customers. Maintaining this priority requires that commuter on-street parking in residential neighbourhoods and commercial areas be actively discouraged. Publicly accessible on-street electric vehicle parking with charging will only be considered where it is in line with these objectives and priorities.

A key element of the transition to electric vehicles will be the expansion of the publicly accessible charging network, including fast charging for those who need it.

Providing on-street refuelling ('charging facilities') for one type of private vehicle is not equitable, especially considering the current affordability and availability issues. Most vehicles refuel now at publicly accessible service stations, not on public streets. The infrastructure requirements, impacts and costs are unlikely to make publicly accessible on-street charging feasible or scalable in our area, where many people have access to off-street parking.

Retail locations and public car parks in our area are already providing electric vehicle charging. It may be already easier for our residents to charge an electric vehicle than fuel up a petrol vehicle. There are already over 100 publicly available electric vehicle chargers in the City – underlining the importance of making sure the public know where they are.

There are 7 service stations within the City of Sydney with over 20 additional stations within a 2-kilometre range. Major service station operators are transitioning to provide dedicated electric vehicle charging. These types of facilities, which are already optimally located on key routes and near key destinations, will expand publicly accessible charging access, and serve an important role in facilitating the transition for our residents that are not able to charge at home.

The NSW Government has planned for fast charging along the M1 and the A4 (City West Link).

The City will play an important early leadership role that still allows the rapid development of market-driven public charging facilities in the medium and long term.

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**Action 16:** Advocate that the NSW Government investigates appropriate and feasible market driven options for scalable publicly accessible off-street charging.

**Action 17:** Work with owners of publicly accessible car parking and servicing (including service stations, retail parking, public parking stations) to promote the opportunity to provide EV charging for public use.

**Action 18:** Support the NSW Government to ensure the public knows where publicly accessible chargers are.

**Action 19:** Provide additional off-street publicly accessible charging in City-controlled car parks across the LGA in locations where feasible (other than in City parks).

**Action 20:** Work with private sector providers to trial paid on-street charging in residential areas with constrained private charging opportunities. This should be cost neutral to the City and avoid negative impacts on the public domain including footpaths and planting.

**Action 21:** Investigate charging models for areas with constrained charging options. This is a contingency. The model should only supplement other public charging offers; be based on an evidenced need; community acceptance; be cost neutral to the City; be based on available or advanced technology; and avoid negative impacts on the public domain including footpaths and planting.

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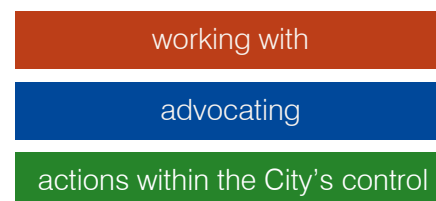


Photographer: Chris Southwood / City of Sydney

# 3. Action Plan

The City is not responsible for providing charging but has a responsibility to facilitate access and equity through enabling the right charging solutions in the right places.

This strategy outlines key actions the City can do to support this transition, including working with, advocating, and actions within the City's control.



Action number	Action	New or continuing	Timeframe	Responsible Business Unit	Other agencies
<b>Creating a city for walking, cycling and public transport</b>					
Action 1	<b>Work with</b> the NSW Government to reduce vehicle kilometres travelled (VKT) by all vehicle fleets by creating a city for walking, cycling and public transport to reduce transport-related emissions.	Continuing	Immediate	City Access	NSW Government
<b>Government pricing and policy that prioritises electric vehicles over internal combustion engine vehicles</b>					
Action 2	<b>Advocate</b> that the Australian Government immediately raise fuel and emissions standards to make electric vehicles more attractive, and to avoid Australia receiving vehicles not saleable elsewhere.	Continuing	Immediate	Sustainability & Resilience	Federal Government
Action 3	<b>Advocate</b> that the Australian Government develops a transition plan for new vehicles to be zero emissions by 2030 and powered by a fully renewable electricity grid by 2035.	Continuing	Immediate	Sustainability & Resilience	Federal Government

Action number	Action	New or continuing	Timeframe	Responsible Business Unit	Other agencies
<b>Government pricing and policy that prioritises electric vehicles over internal combustion engine vehicles (continued)</b>					
Action 4	<b>Advocate</b> that the NSW Government investigates pricing mechanisms to incentivise the transition to electric vehicles in the city centre, including low emissions zone, parking levies and kerbside charging.	Continuing	Immediate	City Access	NSW Government
Action 5	<b>Advocate</b> that subsidies for electric vehicles (including for charging) proposed by the Australian and NSW Governments reflect the City's fleet transition hierarchy (i.e. e-bikes and other micromobility and public transport first then commercial, and finally private vehicles).	Continuing	Immediate	City Access	NSW Government Federal Government
<b>A transition to electrification that focuses on high-impact transport fleets</b>					
Action 6	The <b>City will</b> maximise electrification of its light fleet by 2030 and heavy fleet as soon as possible.	Continuing	Ongoing	Fleet services	
Action 7	The <b>City will</b> encourage the uptake of electric vehicles to be used in our contracted services through our procurement processes (including waste collection, cleansing and maintenance).	Continuing	Ongoing	Fleet services	
Action 8	<b>Advocate</b> to the State and Federal Government that grants to encourage fleet electrification include local government depots to facilitate and encourage local governments to transition their fleets.	New	Immediate	Fleet services	Federal Government

Action number	Action	New or continuing	Timeframe	Responsible Business Unit	Other agencies
<b>A transition to electrification that focuses on high-impact transport fleets (continued)</b>					
Action 9	<b>Advocate</b> that the NSW Government accelerates the electrification of the bus fleet serving the City of Sydney, prioritised by depot and corridor, to reduce noise, localised pollution and carbon emissions by 2030.	Continuing	Ongoing	City Access	NSW Government  Transport for NSW
Action 10	<b>Advocate</b> that the NSW Government accelerates the transition of service and delivery vehicle fleets to electric vehicles, including the use of e-bikes and other micromobility modes.	Continuing	Ongoing	City Access  Sustainability Programs	NSW Government
Action 11	<b>Work with</b> car share operators to develop a model to electrify their fleet by 2030. This includes changes confirmed via periodic policy review and that are cost neutral to the City.	Continuing	Ongoing	City Access	Car share operators
Action 12	<b>Advocate</b> that the NSW Government accelerates the uptake of zero-emission vehicles by point-to-point operators, including taxis.	Continuing	Ongoing	City Access	NSW Government  NSW Point to Point Commission

Action number	Action	New or continuing	Timeframe	Responsible Business Unit	Other agencies
<b>Supporting electric vehicle charging options in ways that limit impacts on the public domain</b>					
Action 13	<b>Prepare</b> draft planning controls in the Sydney Development Control Plan 2012 requiring new development to be 'electric vehicle ready', with car parking spaces enabling electric vehicle charging.	Continuing	Immediate	Planning	NSW Department of Planning and Environment
Action 14	<b>Work with</b> governments, industry, peak bodies and strata communities to support electrification of buildings and upgrades to enable onsite electric vehicle charging.	Continuing	Immediate	Sustainability Programs	NSW Office of Energy and Climate Change
Action 15	<b>Fund</b> electric vehicle charging feasibility assessments as part of net-zero plans and energy audits in Green Building Grants and provide guidance on electric vehicle charging through our energy action plans in the Smart Green Apartments program.	New	Immediate	Sustainability Programs	NSW Government Building owners and Managers
Action 16	<b>Advocate</b> that the NSW Government investigates appropriate and feasible market-driven options for scalable publicly accessible off-street charging.	New	Immediate	City Access	NSW Government
Action 17	<b>Work with</b> owners of publicly accessible car parking and servicing (including service stations, retail parking, public parking stations) to promote the opportunity to provide EV charging for public use.	Continuing	Ongoing	City Access City Communications Planning	Public parking providers Commercial parking operators



Action number	Action	New or continuing	Timeframe	Responsible Business Unit	Other agencies
<b>Supporting electric vehicle charging options in ways that limit impacts on the public domain (continued)</b>					
Action 18	<b>Support the</b> NSW Government to ensure the public knows where publicly accessible chargers are.	New	Immediate	City Comm-unications	NSW Govern-ment
Action 19	<b>Provide</b> additional off-street publicly accessible charging in City-controlled car parks across the LGA in locations where feasible (other than in City parks).	New	Immediate	City Access CITO	DPIE
Action 20	<b>Work with</b> private sector providers to trial paid on-street charging in residential areas with constrained private charging opportunities. This should be cost neutral to the City and avoid negative impacts on the public domain including footpaths and planting.	New	Immediate	City Access CITO	Electric Vehicle charging providers  Grid operators
Action 21	<b>Investigate charging models</b> for areas with constrained charging options. This is a contingency. The model should only supplement other public charging offers; be based on an evidenced need; community acceptance; be cost neutral to the City; be based on available or advanced technology; and avoid negative impacts on the public domain including footpaths and planting.	New	2 to 3 years	City Access City Design Traffic Operations City Engagement	NSW Govern-ment  Electric Vehicle charging providers



I'm an  
electric truck.



Breathe easier.

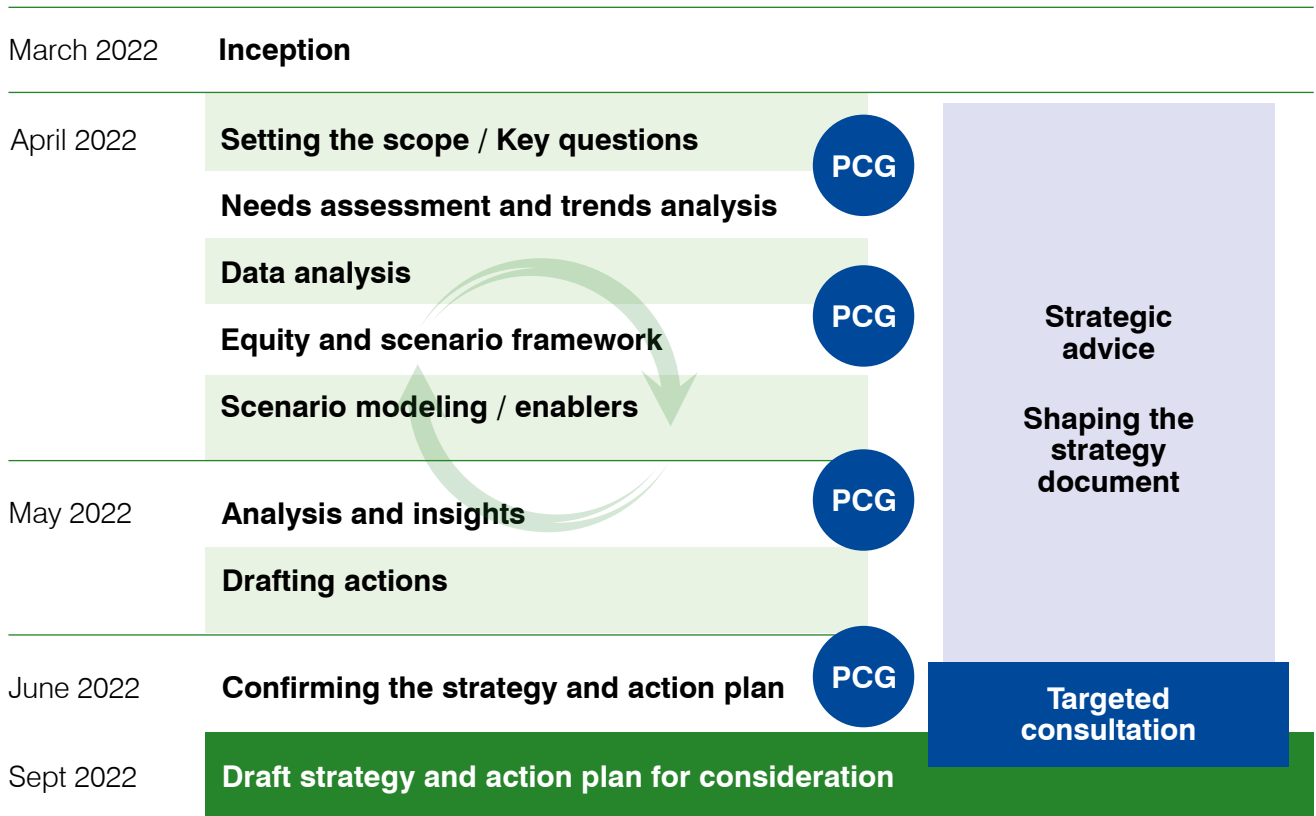
# 4. Reference Materials

## 4.1 Process to develop the strategy and action plan

Figure 9 illustrates the process undertaken to develop this strategy and action plan along with key dates and key meeting points.

The development of this strategy and action plan was supported by a technical report and an internal Project Coordination Group.

**Figure 9. Process to develop the strategy and action plan**



### Technical report

The strategy and action plan builds on analysis and understanding of vehicle use within our local context. The City partnered with SGS Economics and Planning and Kinesis to develop and provide strategic and technical advice. The technical report providing the analysis and modelling undertaken is available at: (link to be included).

### Engagement

An internal cross-divisional Project Coordination Group (PCG) steered the development of the strategy and action plan, with representatives from Strategic Planning and Urban Design, Sustainability and Resilience, Sustainability Programs, City Access, Strategy and Communication and City Fleets.

This PCG met formally to undertake intensive working sessions coordinated with the development of the strategic advice, technical analysis and modelling by SGS Economics and Planning and Kinesis (15 December 2021, 24 March 2022, 20 April 2022, 20 May 2022, 10 June 2022) along with informal and targeted meetings between key members.

The PCG provided input into iterations of the draft, including drafting and approving the actions and reviewing the 80 percent draft strategy and draft action plan.

The City exhibited the Draft Strategy and Action Plan for comment in February 2023. This final Strategy and Action Plan responds to issues raised in the consultation.



Photographer: Paul Patterson / City of Sydney

## 4.2 Key terms

Key terms	Definition and explanation
EV ready	Refers to parking spaces that have the required wiring, power outlets and connection points for an electric vehicle charger to be installed when required. These can be parking spaces in new buildings or retrofitted parking spaces in existing buildings.
Kilowatt (kW)	A kilowatt is how much energy is moving or being used at one time. It is used in reference to the speed of chargers.
Kilowatt hour (kWh)	Amount of energy used in an hour. Used in reference to the capacity of a battery, for example, how much energy a battery can hold and store.
Micromobility	A term used to refer to a range of smaller vehicles such as bicycles, cargo bikes, electric bikes, electric scooters and three-wheeled delivery vehicles, that can be electric or human powered.
Point-to-point vehicles	Refers to vehicles used to transport people on demand for a fee, such as taxis, hire cars, ride-share services and tourist services.

## 4.3 Electric vehicle charging standards

	Power	Range added per hour	Charging time	Typical application
Level 1 – single phase (domestic)	2.4-3.7kW	10-20km range / hour	5-16 hours	Home
Level 2 slow – single phase (domestic or public)	7kW	30-45km range / hour	2-5 hours	Home, work, shopping centres, car parks
Level 2 fast – three phase (public)	11-22kW	50-130km range / hour	30 mins-2 hours	Urban roadside
Level 3 – fast charge (public)	50kW	250-300km range / hour	20-60 mins	Regional near highways, motorways and key routes
Level 4 – super fast charge (public)	120kW	400-500km range / hour	20-40 mins	Regional near highways, motorways and key routes
Ultra-fast charge (public)	350kW	1000+tkm range / hour	10-15 mins	Highways and motorways

Source: NSW Government Electric vehicle charging types.

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## 4.4 Endnotes

1. City of Sydney (2022). *Sustainable Sydney 2030–2050 – Continuing the Vision*, available at <https://www.cityofsydney.nsw.gov.au/sustainable-sydney-2030-2050> and City of Sydney (2022). *Community Strategic Plan – Delivering Sustainable Sydney 2030–2050*, available at <https://www.cityofsydney.nsw.gov.au/strategies-action-plans/community-strategic-plan>.
2. NSW Government (2021). *NSW Electric Vehicle Strategy*. Environment, Energy and Science and Department of Planning, Industry and Environment. Available at <https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Climate-change/nsw-electric-vehicle-strategy-210225.pdf>.
3. City of Sydney (2021). *Environmental Strategy 2021–2025*. Available at <https://www.cityofsydney.nsw.gov.au/strategies-action-plans/environmental-strategy>.
4. NSW Government (2021). *NSW Electric Vehicle Strategy*. Environment, Energy and Science and Department of Planning, Industry and Environment. P.14. Available at <https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Climate-change/nsw-electric-vehicle-strategy-210225.pdf>.
5. Place is used in this context to refer to the quality, design and availability of the public space and public domain provided, along with the broader attributes of a place such as sense of place.
6. NSW Government Fast Charging Master Plan Map at <https://www.energy.nsw.gov.au/business-and-industry/programs-grants-and-schemes/electric-vehicles/Fast-charging-master-plan#master-plan-map>
7. The NSW Government estimates that “a taxi driver can save up to around \$4500 per year by switching from a hybrid petrol car to a battery EV or even more if switching from a traditional petrol vehicle” (p. 10). NSW Government (2021). *NSW Electric Vehicle Strategy*. Environment, Energy and Science and Department of Planning, Industry and Environment. Available at <https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Climate-change/nsw-electric-vehicle-strategy-210225.pdf>
8. See “NSW Government’s Electric Vehicle Strategy” at <https://www.nsw.gov.au/initiative/nsw-governments-electric-vehicle-strategy> and “Electric vehicles” at <https://www.energysaver.nsw.gov.au/reducing-emissions-nsw/electric-vehicles>
9. NSW Government Fast Charging Master Plan Map at <https://www.energy.nsw.gov.au/business-and-industry/programs-grants-and-schemes/electric-vehicles/Fast-charging-master-plan#master-plan-map>
10. NSW Government’s update <https://www.nsw.gov.au/media-releases/supercharges-ev-rollout>
11. The Electric Vehicle Council keeps a list of charging organisations. See <https://electricvehiclecouncil.com.au/about-ev/charger-map/>.
12. See <https://www.transport.nsw.gov.au/projects/electric-vehicles/charging-an-electric-vehicle/charging-map> and <https://www.plugshare.com/>.
13. This varies with Potts Point–Woolloomooloo having about 16,600 people/square kilometre and Pyrmont–Ultimo 16,500 people/square kilometre.
14. SGS Economics and Planning with Kinesis Technical Report, electric vehicle projects under three scenarios based on current NSW Government policy, current Federal Government policy and optimised for 100 per cent electric vehicle take up in the local area. Data sources used: ABS census, NSW Registrations, City of Sydney LSPS 2012, NSW Government electric vehicle strategy and the Labor Government’s election policy announcements.

15. See <https://www.transport.nsw.gov.au/projects/electric-vehicles/charging-an-electric-vehicle/range-and-charging>
16. SGS Economics and Planning with Kinesis. Areas with a deficit in off-street residential parking.
17. *Draft City of Sydney Access Strategy and Action Plan*
18. Reference SGS Economics and Planning with Kinesis Technical Report. Modelling of home and public charging profiles. Charging profiles are indicative only and based on a Danish study calibrated to electric vehicle charging demanded in the local area using car use from Transport for NSW's Household Travel Survey.
19. See City of Sydney (2021). Environmental Strategy 2021–2025. Available at <https://www.cityofsydney.nsw.gov.au/strategies-action-plans/environmental-strategy>.
20. These include emissions from brake wear, tyre wear, road pavement and road wear.
21. The 'last mile' in transportation planning is the final part of a journey, often from a transportation hub (e.g. a bus stop or train station) to the final destination (e.g. home or work).
22. NSW Government (2022). "Zero Emission Buses" (Project update, June). Available at <https://www.transport.nsw.gov.au/projects/current-projects/zero-emission-buses>.
23. NSW Government (2021). NSW Electric Vehicle Strategy. Environment, Energy and Science and Department of Planning, Industry and Environment, p. 10. Available at <https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Climate-change/nsw-electric-vehicle-strategy-210225.pdf>.
24. See NSW Government (2022). Zero Emission Buses. Available <https://www.transport.nsw.gov.au/projects/current-projects/zero-emission-buses>. Note that prior announcements used 2030 as the deadline, rather than 2035.
25. Electric Vehicle Council (2022). State of Electric Vehicles – March 2022, p. 4. Available at: <https://electricvehiclecouncil.com.au/reports/state-of-electric-vehicles-march-2022/>.
26. The City's Car Sharing Policy sets minimum use levels for each vehicle.
27. More information available at <https://www.cityofsydney.nsw.gov.au/environmental-support-funding/green-building-grants>
28. More information available at <https://www.cityofsydney.nsw.gov.au/environmental-support-funding/smart-green-apartments>
29. NSW Government Energy Saver. "Making your residential strata building EV ready". Available at <https://www.energysaver.nsw.gov.au/reducing-emissions-nsw/electric-vehicles/electric-vehicle-ready-buildings/making-your-residential-strata-building-ev-ready#the-5-steps-to-ev-readiness>.
30. NSW Government Energy Saver. "Making Your Commercial Building EV Ready". Available at <https://www.energysaver.nsw.gov.au/reducing-emissions-nsw/electric-vehicles/electric-vehicle-ready-buildings/making-your-commercial-building-ev-ready>.





# **Attachment C**

## **Summary of Feedback and Engagement Report**

# Engagement report – draft Electrification of Transport in the City Strategy and Action Plan



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# Background

## Draft Electrification of Transport in the City Strategy and Action Plan

The City has developed a strategy and action plan to reduce transport-related emissions by electrifying transport in the city.

Our vision is net zero emissions across our local area by 2035. Transport accounts for around 20% of total emissions in our area and a shift to electric vehicles is an important part of our net zero goal.

Our draft electrification of transport in the city strategy and action plan supports electric vehicles, while protecting enjoyment of our streets, and recognising that walking, cycling and public transport are the best ways to reduce transport emissions.

The focus of the strategy and action plan covers 4 key action areas:

### 1. Creating a city for walking, cycling and public transport

The transition to net zero emissions needs to happen as soon as possible. Enabling a city for walking, cycling and public transport, supported by electric vehicles, is the best way we can facilitate a reduction in transport related emissions.

### 2. Government pricing and policy

We need state and federal government pricing and policy that prioritises electric vehicles over internal combustion engine vehicles.

### 3. The transition to electrification that focuses on high-impact transport fleets

Our strategy prioritises electrifying the fleets with the biggest emissions and impacts on people on our streets – either because they are driving all day or they are big and noisy. These include buses, delivery vehicles, taxis and service vehicles.

### 4. Charging options

The best place for people to charge is where they currently refuel or where they park. For example, their home, work, car parks or service stations. We are providing more electric vehicle charging in our car parks and encouraging the private sector to provide more charging in public car parks and service stations.

Research shows that most people will charge at home or at work because it is cheaper and more convenient. We will use our planning controls to make sure new developments are 'EV ready'. On-street charging will play a role to supplement off-street charging in locations where there are limited off-street opportunities. We are taking a sensible, data-led approach to on-street charging, balancing EV needs with protecting public space.

There are 21 supporting actions that we will take to support the electrification of transport.

**The draft document was on public exhibition between February and April 2023**

## This engagement report

This document summarises key findings and outlines activities that took place during the public exhibition of the draft Strategy and Action Plan.

All feedback captured in this report will be considered before reporting back to Council.

# Engagement summary

## From February to April 2023, we asked the community for feedback on our draft strategy and action plan

Consultation ran between 21 February and 4 April 2023 and provided an opportunity for stakeholders and the community to review and comment on the strategy and action plan

This report outlines the community engagement activities that took place to support the consultation and summarises the key findings from the consultation.

## Purpose of the engagement

The purpose of the engagement was to:

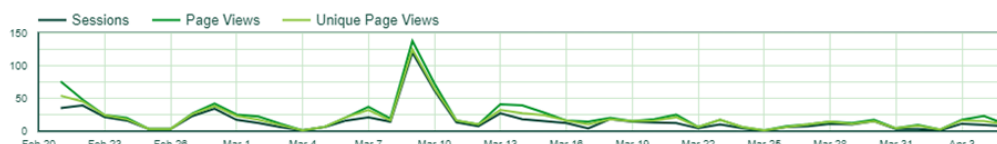
- gather feedback from stakeholders and the community about the draft strategy and action plan
- determine the level of satisfaction with the draft strategy and action plan
- inform the development of the final strategy and action plan.

The City created a Sydney Your Say webpage. The page included a copy of the plan to review and a link to a survey.

The survey included with targeted questions about the strategy and actions. The community and stakeholders could insert their feedback directly onto the survey or email a submission.

## Outcomes from the engagement

**Over 170 pieces of feedback were received during the consultation. Below is a break-down of the feedback received:**



Sessions 703	Users 662	New Users 332	Page Views 993	Unique Page Views 872
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### What do people do on the page?

Clicked on Online Form/Survey 162	Downloaded a document 251	Emailed sydneyyoursay@ 4	Subscribed to SYS eDM No data
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- More than 160 surveys completed

17 email submissions received

- Following a request, the City briefed the Millers Point Residents Action Group on the document
- Following a request, the City briefed the car sharing operator Go Get on the document.

**Submissions received from organisations or individuals**

- City of Sydney Inclusion (Disability) Advisory Panel
- Jolt
- Go Get
- Newtown Climate
- Millers Point Community Residents Action Group
- Pyrmont Action Inc.
- Bicycle NSW
- Angel Street Permaculture Garden
- Eight submissions from individuals



# Survey response findings

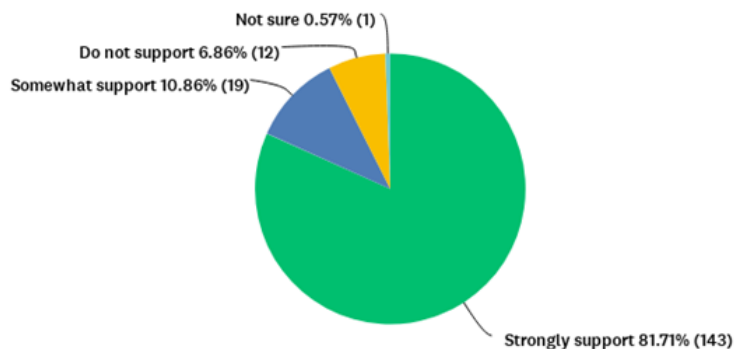
Survey results indicate overall support for the draft strategy’s vision and confidence in the City’s ability to meet the targets and vision.

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## Q: Creating a city for walking, cycling and public transport.

The transition to net zero emissions needs to happen as soon as possible. Enabling a city for walking, cycling and public transport, supported by electric vehicles, is the best way we can facilitate a reduction in transport related emissions.

Q1 Do you support this?



**93%**  
strongly support or support

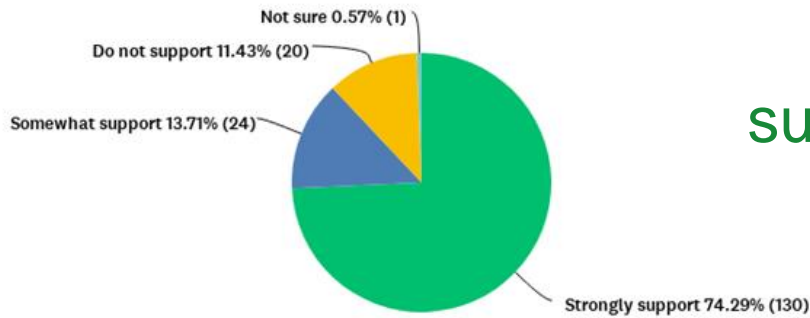
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## Q: Government pricing and policy that prioritises electric vehicles over internal combustion engine vehicles.

The strategy aims to remove barriers to people choosing an electric vehicle over a conventional vehicle, and not to subsidise or encourage driving.

We need NSW and Federal government to work together on issues such as better pricing signals, and vehicle and fuel emission standards.

Q2 Do you support this?



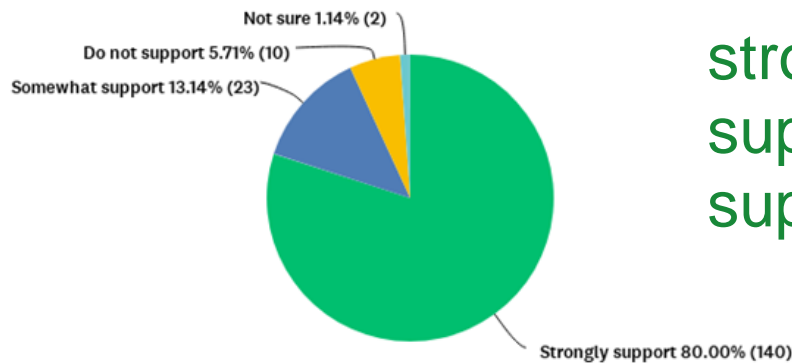
**88%**  
strongly  
support or  
support

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**Q: A transition to electrification that focuses on high-impact transport fleets**

Our strategy prioritises electrifying the fleets with the biggest emissions and impacts on people on our streets - either because they are driving all day or they are big and noisy. These include buses, delivery vehicles, taxis and service vehicles.

Q3 Do you support this?



**93%**  
strongly  
support or  
support

---

**Q: Supporting electric vehicle charging options in ways that limit impacts on the public domain**

The best place for people to charge is where they currently refuel or where they park, for example, their home, work, car parks or service stations. We are providing more electric vehicle charging in our car parks and encouraging the private sector to provide more charging in public car parks and service stations.

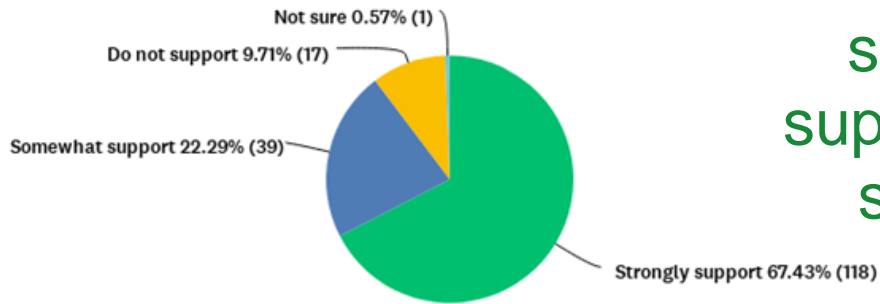
Research shows that most people will charge at home or at work because it is cheaper and more convenient. We will use our planning controls to make sure new developments are “EV ready”. On-

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street charging will play a role to supplement off-street charging in locations where there are limited off-street opportunities. We are taking a sensible, data-led approach to on-street charging, balancing EV needs with protecting public space.

Q4 Do you support this?

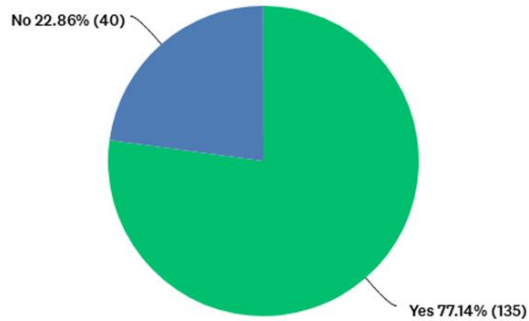


**90%**  
strongly support or support

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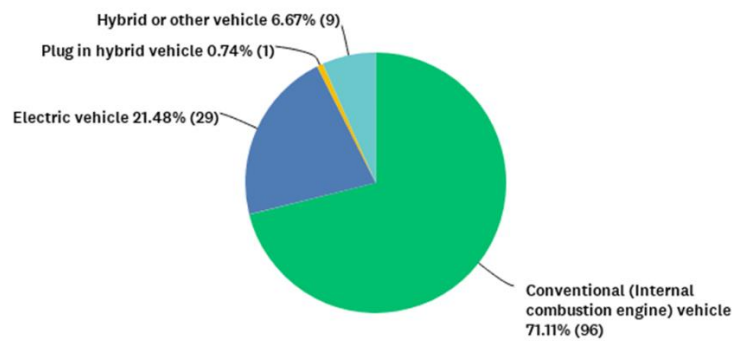
Does your household use a vehicle?

**77%**  
in households  
that use  
vehicles



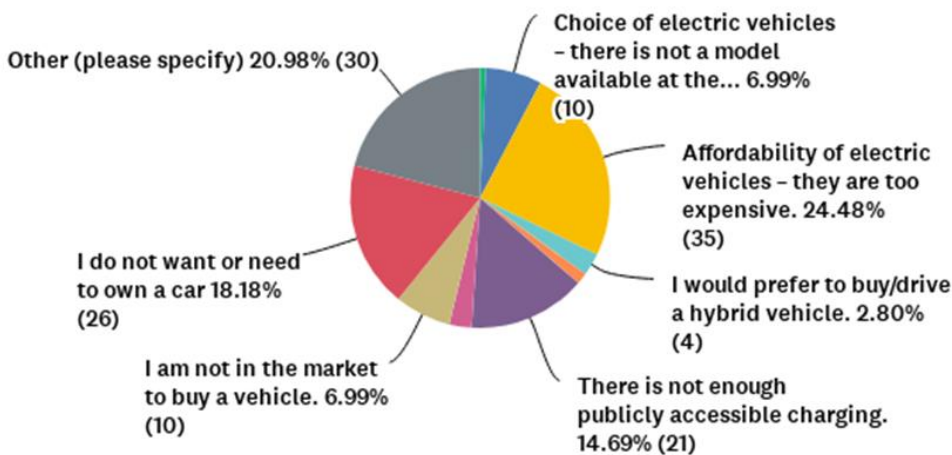
## What kind of vehicle is it?

**71%**  
in households  
using ICE  
vehicles



## Barriers to ownership

Our research found that the biggest barriers to private electric vehicle ownership are the price and availability of the vehicles. If you do not currently own an electric vehicle, what is the biggest issue preventing you for adopting one?



**15%** cited  
access to  
charging as a  
barrier to  
vehicle  
ownership

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**Appendix 1** documents the free form responses to questions relating to:

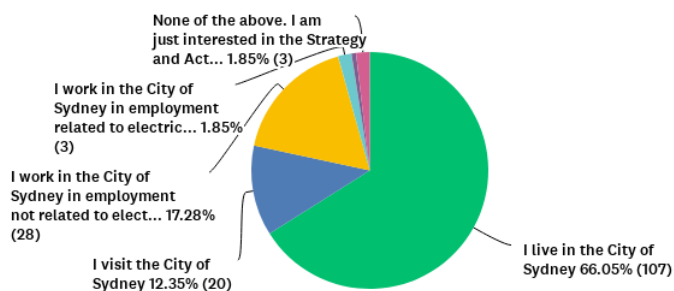
- Barriers to ownership
- Challenges for current electric vehicle owners
- Any other feedback.

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## Demographics

**What best describes you/your organization?**

Q10 What best describes you/your organization

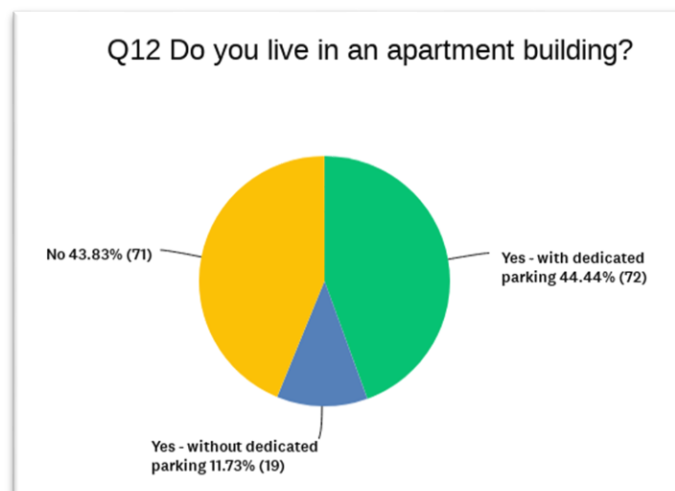


### What suburb do you live in?

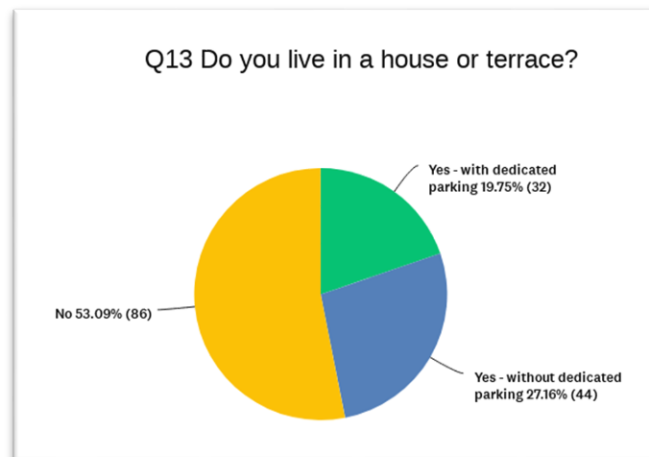
City of Sydney suburbs highlighted

Alexandria – 5	Annandale – 2	Ashfield – 1	Ballina - 1
Balmain – 3	Beaconsfield – 2	Bondi Beach – 1	Bondi Junction – 1
Botany – 1	Camperdown – 4	Campsie – 1	Canterbury – 1
Casula – 1	Centennial Park – 1	Chippendale – 3	Concord – 1
Coogee – 2	Crows Nest – 1	Croydon – 1	Darlinghurst – 2
Darlington – 2	Dawes Point – 1	Drummoyne – 1	Dulwich Hill – 2
East Ryde – 1	Eastlakes – 1	Elizabeth Bay – 2	Enmore – 2
Epping – 1	Erskineville – 8	Forest Lodge – 5	Gladesville – 1
Glebe – 8	Haymarket – 1	Kingsford – 1	Macquarie Park – 1
Maroubra – 1	Marrickville – 2	Matraville – 1	Mortlake – 1
Newtown - 6	Northbridge – 1	Paddington – 8	Pagewood – 1
Palm Beach – 1	Potts Point – 5	Putney – 1	Pymont – 11
Randwick – 3	Redfern – 5	Rozelle – 1	Rushcutters Bay – 1
Stanmore – 1	Strathfield – 1	Surry Hills – 7	Sydney – 5
The Rocks – 2	Ultimo – 5	Voyager Point – 1	Waterloo – 4
Wentworth Point – 1	Wentworthville – 1	Wolli Creek – 1	Woolloomooloo – 1
Zetland – 6	No response - 12		

### Do you live in an apartment building?



## Do you live in a house or terrace?



**There was a good mix of respondents from different housing stock**

# Subjects/issues raised in submissions

Several subjects/topics were raised in the feedback received. These were presented as concerns, suggestions and/or requests and are summarised below.

Issue	City of Sydney Response
<p><b>Vehicles are quiet and create risk</b></p> <p>The relatively low noise of electric vehicles makes them more risky for people with disabilities, especially those with impaired vision</p>	<p>Agree. The City notes that the Australian Government’s discussion paper on electric vehicle standards identifies this potential risk and will address it when proposed standards are released later in 2023. The Strategy and Action Plan are updated to acknowledge this.</p>
<p><b>Charging</b></p> <p>Public charging should use renewables</p>	<p>Agree. Reflected in Strategy and Action Plan.</p>
<p><b>Public charging</b></p> <p>Acknowledge role of public charging in building “confidence”</p>	<p>The Strategy and Action Plan outline the role of public charging, notwithstanding its relatively low influence in electric vehicle ownership</p>
<p><b>Fast on-street charging</b></p> <p>There should be fast on--street charging to support equity. It could be free to use.</p>	<p>The City supports the NSW Government’s fast charging network, it provides off-street fast charging in easily accessible locations, including Alexandria and Eveleigh South.</p> <p>The City’s general position is that public charging should be a commercial arrangement between providers and vehicle drivers.</p>
<p><b>Public land for charging</b></p> <p>The City should advocate for or provide public land for charging</p>	<p>Not supported. There is a large supply of private land available for the private sector to develop commercial public charging options. Existing service stations are one example.</p>
<p><b>Point to point vehicles (such as taxis) should charge at ranks</b></p>	<p>Not supported. Taxi ranks in the City are designed for short stay occupation and high turnover.</p> <p>Fast charging options such as the NSW Government’s sites are likely to be the suitable options for taxi and point to point vehicles. The City expects other commercial options to develop to take advantage of</p>



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	the charging (and broader vehicle and driver) needs of these fleets.
<p><b>Future public and fast charging demand</b></p> <p>The Strategy and Action Plan underestimate the likely future demand for public charging including fast charging.</p>	<p>Not agreed. The Strategy and Action Plan’s accompanying Technical Report outlines the assumptions behind the City’s estimate of public charging demand, which are based on the City’s demographics and its off-street private options.</p> <p>However the City’s estimate is not a cap nor does it directly influence decisions to proceed with or oppose specific charging proposals.</p> <p>The market will be able to provide as much public charging as it thinks can be commercially sustainable (and that the energy grid can support.)</p> <p>The City has clarified this in the Strategy and Action Plan.</p>
<p><b>Charging for commuters</b></p> <p>The City should provide charging options for people commuting into the LGA</p>	<p>Not supported. The City discourages private vehicle trips to the LGA where possible. These drivers can charge at home or depot or their workplace, or at off-street public charging. For private fleets, this can be in car parks.</p> <p>The City supports the need for charging for high value fleets such as freight but this is best served in other locations given the lack of long-stay parking on-street.</p>
<p><b>Car share fleet transition</b></p> <p>2030 date for 100% EV fleet should be conditional based on factors such as charging availability and vehicle price parity</p>	<p>Not supported. The Car Sharing Policy has always mandated a cleaner fleet than the overall fleet, without any caveats or conditions. The selection of a date in the 2030s reflects the complexity in the transition.</p> <p>Proposed changes to vehicle standards make the achievement of relative price parity for electric vehicles in the late 2020s more likely.</p> <p>There should be no linkage to the proven availability of charging options. The sector has always faced the issue of “fuelling” its fleet. It is reasonable to assume that by 2030 there will be sufficient charging solutions to avoid major cost impositions to members., or sufficient recurrent cost savings to offset these.</p> <p>The specific requirement will be included in the Car Sharing Policy, due for updating later in 2023.</p>
<p><b>Car share charging</b></p> <p>Strategy should suggest there be trials of on-street charging eg via Ausgrid poles</p>	<p>Agree. Strategy updated to include potential for this, subject to further investigation of specific sites.</p>
<p><b>Road user pricing and car share</b></p> <p>Car share vehicles should be exempt from schemes such as</p>	<p>Noted. The NSW Government would be responsible for the design of any scheme. The City supports reduction of vehicle emissions but also notes the space inefficiency and impact on congestion of car share vehicles accessing the city centre.</p>

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a low emissions zone in the city centre	
<b>The grid</b>  Emissions reductions are maximised when electric vehicles use 100% renewable energy	Recognised in Strategy and Action Plan.
<b>Life cycle emissions</b>  Support for electrification of private vehicles could increase overall emissions	Not agreed. The Strategy and Action Plan is updated to include data relating to the life-cycle emissions.
<b>Net Zero emissions by 2035</b>  Bring forward Net Zero/fleet targets	Not supported. The City supports Net Zero by 2035 and the transport sector will face significant challenges meeting that deadline.  Dates in the Strategy (e.g. when discussing 100% of fleet sales) are not targets per se, rather they are inputs into the City's Strategy.
<b>Industry needs support</b>  Work with mechanics to build business and technical skills for the transition	Not identified as a barrier to the transition. Already businesses in inner Sydney offering these services.
<b>Optimising public charging</b>  Adopt the optimised charger and aim for more public chargers soon	The primary source of the public charging will be commercial entities. The City will not be capping the amount of public charging. The NSW Government fast charging program will provide additional public charging in the immediate future.
<b>City fleet electrification</b>  Full City fleet electrification by 2030	Noted. The Strategy and Action Plan outline the City's intention to electrify its fleet as fast as reasonably possible, while noting the complexities relating to some types of heavy vehicles in its fleet.
<b>Public charging in areas such as Newtown</b>  The City should provide or encourage public charging in suburbs such as Newtown	Agree. The Strategy and Action Plan outline the importance of public charging for people in suburbs such as Newtown. The City is addressing this in further planning of trials such as the pole-based charging trial. the NSW Government's Fast Charging facilities in Eveleigh South will also provide a solution.
<b>Off-street charging</b>  Power point charging in all residents with off-street parking	Agree in-principle. The City's deep dive strata research project will explore the issues relating to this, given such decisions rest with individual buildings.
<b>Mechanisms/incentives to boost EV bicycle uptake</b>	Agree. The Strategy and Action Plan documents the City's position that government programs such as incentives and subsidies should extend to options such as bicycles. The City is not in a position to fund this concept.
<b>Complete bicycle network ASAP to reduce emissions</b>	Noted. The detail of the cycleway network implementation is outside the scope of the Strategy and Action Plan, however it recognises the importance of cycling to emissions reduction.

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<p><b>Limited options in some locations</b></p> <p>Terrace areas such as Millers Point have little to no off-street parking and few if any opportunities for public charging</p>	<p>The Strategy and Action Plan acknowledges this. The City is considering the needs of these areas in its development of approaches such as pole-based charging trials.</p>
<p><b>The City's leadership role</b></p> <p>The City should do more early heavy lifting such as providing public charging to drive the transition, or supporting point to point and other fleet hubs in the LGA.</p>	<p>Not agreed. The City's Strategy and Action Plan outline the overall approach and explain the City's expectation of the likely growth of public charging, from many sources.</p> <p>The City will consider supplementing public charging system where absolutely required, and has already provided early public charging in car parks and by supporting the Glebe trial of on-street pole-based charging.</p> <p>The City does not wish to promote the city centre and surrounds as a destination for public charging as this will increase motor vehicle trips to these high-value, congested locations.</p> <p>The city accepts the need and opportunity of hubs for fleets but believes the best location for these is further outside the city centre, where land is cheaper. They could be part of fast charging stations (such as South Eveleigh) that become broader e-mobility hubs.</p>
<p><b>Enabling strata charging is crucial to suburbs such as Pyrmont</b></p>	<p>Agree. The Strategy and Action Plan reflect this and the City's strata deep-dive research project is expressly designed to maximise the medium-long term charging opportunities in locations such as Pyrmont, as part of a broader approach to electrifying buildings. The City recognises that there are many <u>potential</u> issues but that there is minimal and specific guidance to address these issues and develop potential solutions for buildings as they electrify – this is the key focus of the research.</p>
<p><b>Reduce car parking rates</b></p> <p>The City's parking rates in new developments are too high. Car ownership is increasing when it should be reducing.</p>	<p>Not agreed. The City sets maximum parking rates in new development through Sydney LEP 2012. As these are maximum rates, there is no requirement by the City for parking in new development. The maximum rates are set by land use, dwelling size and proximity to transport and other services. For residential development, the rates are typically less than 1 per dwelling.</p> <p>This policy is supported by a blanket restriction on residents of newly built apartment buildings having access to on-street parking permits.</p> <p>The City notes that average household car ownership increased in the 2021 Census, while being still significantly lower than in other areas of Sydney. The City believes that a primary driver for this was the</p>

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	absence of population elements such as overseas students (due to Covid), making a direct comparison with 2016 Census data complex. However the City is committed to creating a city for walking, cycling and public transport, and reducing overall reliance on private vehicles.
--	---

# Appendix 1

## Barriers to ownership – “Other reasons” cited:

Cost & lack of public charging points. We want to buy an EV but don't have off-street parking so would rely on public charging.
I would like to replace my internal combustion car with an electric bicycle, but the switch would be more attractive with a subsidy
I don't drive enough so that there is a benefit in terms of CO2 emissions. Also electricity is mainly produced through coal and gas in NSW.
My household currently uses a carshare EV but don't own one. If carshare was 100% electric, then I would use 100% electric. Incentives to help carshare fleet become electric would be great (as well as providing parking for them, to encourage people to give up their own vehicle).
I own an electric bicycle and would use this instead of a car
Electrify carshare providers
I think it is wasteful to get rid of a car that works fine to replace it with and electric vehicle. Next car will be a hybrid at least.
Once our current vehicle has run its course we will never another.
E-bikes all the way - better cycling infrastructure please!
Currently don't drive often enough to justify the expense of a new car - we reduce our emissions by walking, cycling and using public transport.
Rarely use the vehicle these days, preferring to cycle, walk and use public transport. Not sure if another vehicle will be needed in the future.
No car space at home to charge car
Prefer to cycle, better for physical and mental health and the environment.
I will run down this car and not buy another one.
I am waiting for more hydrogen vehicle options
It's too dangerous to be on the street
Difficulty to install private chargers in strata
We own a classic car, and unfortunately we will not be trading it in for any other vehicle! However, we only use it about once a week.
They are unsafe and do more damage to the environment than existing cars.

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I live in a complex of units and the strata is against having EV chargers in the building
I live in a unit block and the cost to install charging stations is ridiculous. Followed by the cost of electric vehicles followed by the range per charge and then last is the availability of functioning effective and cheap public charging stations
I have recently ordered a full electric vehicle
The dangers associated with electric vehicles has deliberately been ignored and the cost and inconvenience caused by them has been largely overlooked
Length of the usable life of the Battery. Not the first year's charge, but 4 years later - will it hold a charge.
Both affordability and not enough public charging points as I don't have off street parking
I park on the street and have nowhere to wash it, so I would pay for a nice new car and it would get damaged because I can't wash it. Have more self-service car wash areas so we can maintain the car.
Current combustion engine vehicle works so I continue to use it, not drive demand for another vehicle. When it reaches end of life, I'll explore the market options for an EV or hybrid vehicle
We wanted to buy a hybrid but the waiting time was so long that we couldn't wait. We didn't consider an EV at the moment because of a lack of charging options
The rapid redundancy of the technology and consumable waste of a vehicle that will quickly become obsolete due to advances in technology. The no renewable lithium batteries and the extensive plastic use in these vehicles.
Charging at home in a strata plan

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## If you currently use an electric vehicle, what is your biggest challenge using your electric vehicle in the City of Sydney?

Traffic and congestion.
Our electric vehicles are e-bikes. The greatest challenge is aggressive drivers. Second greatest is streets cluttered by parking. Need more car free streets
Not enough charging stations and the existing strata by-law which does not support installation of private charging even if user was to pay all costs. Government should support EV in older buildings

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Given I have off street parking, then no challenges for me. However many of my friends and neighbours who do not have off street parking are not interested in an EV given the difficulty of charging. I think the City should rethink the on street charging plan - yes protect public spaces - but look at more destination charging options such as EVX (I'm not affiliated in any way, using them as an example). Having owned an EV for over 12 months, I rarely use a fast charger because home charging / overnight charging is the most convenient form, thus we need more publicly available destination/ slow / AC charging where a vehicle can charge overnight (need to move away from the petrol "refuel" mentality where you have a weekly activity to go get fuel)

Parking

My needs are well serviced because I have garaging with power available. Many inner city dwellings are without access to a power point for trickle charging of EV. On street charging and exclusive parking for EV whilst they charge is needed.

1. Secure parking at home (I have to keep it on our apartment balcony).
2. Secure parking at work and other destinations.
3. Lack of public charging stations (I usually charge the battery at home, but it would be nice to have charging options when away from home).
4. Too many missing links in the cycling network.
5. Too many traffic signals.
6. Long waits at traffic signals.
7. Aggressive, impatient drivers.
8. Inaccessible train stations.

I do not have off street parking. I rely on public charging. Over time this is becoming more difficult and competitive. Without improving this (with widely available destination chargers) the segment of the population without off street parking will not adopt EVs. I've already actively pushed this position. So far it's all talk and no action.

I don't have a problem because I can charge at home, but your assumption that most people will be able to do that is incorrect. Existing apartment blocks will find it hard (for several technical reasons) to provide at-home charging for Residents so your emphasis of on-street charging to be largely for commercial and public transport vehicles is incorrect. It is necessary to provide a more widespread on-street fast-charging network throughout the city. Whereas some of this will be done by private enterprise, the city government needs to take a stronger hand in making this happen

I have an EV Nissan with low range so I need to charge regularly. I live in Darlinghurst with no off-street parking so I rely on public charging. I have real problems trying to find local, easy and fast charging places. It is a problem charging in Car Parks like King Cross - it seems unreasonable to pay for parking, when it is not a fast-charging station (there is one hour free parking, but this will only give about 10% charge). So I will often go to Paddington (Woollahra Council) where I can charge overnight or for a few hours at no extra cost. I do not support having to pay for parking on top of charging. I strongly suggest many more EV charging spaces around residential areas. In the same way people have become used to Go-Get etc, they will get used to EV space. In the past few months EV charging has become more difficult, as more people are becoming EV owners. Lastly, when you say people should charge where they "currently refuel or where they park". If you live in a dense urban area, like Darlinghurst, I park on the street so if that's the suggestion that is good, and please anticipate the forthcoming fast growth in EV owners. Lastly, fast chargers at local

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petrol stations seems like a good idea but please understand the difference between the different charging speeds. Thanks

Lack of off-street parking means we cannot charge at home.

Apartment charging and street charging.

Access to reliable fast charging

Availability of public charging stations in shopping centres.

Publicly accessible charging near home as I do not have off street parking.

Not being able to charge it at home. We live in a complex developed 6 years ago with no infrastructure supporting EV ownership.

Finding recharging stations away from home.

Charging stations, you often get a charging place with 1,2 or 3 chargers but all are in use and the wait is long

Biggest challenge in my EV is avoiding collisions with tradie utes driven in anti-social, dangerous ways in the CBD, Redfern and towards the airport. Pedestrians and cyclists don't have a chance. Get some red light and speeding enforcement happening. You'd make a fortune in penalties in Bathurst Street alone. And some car parking with charging facilities would be good too (eg Domain car park).

Finding chargers. Charging at destination is very convenient - for example, Marrickville metro or Broadway. However, with increasing popularity of EVs it is getting harder and harder to find available charging facilities. Often, petrol cars have taken the available charging spaces or in the case of Broadway, the ones that are for everyone are taken by teslas and the Tesla specific chargers are empty (because they are pay to charge). More easily accessible charging facilities in places like Sydney Park, where people are likely to go for an hour or so would help facilitate uptake.

No charging facility in my apartment block. Not having enough public charging stations to use.

Charging options. I'm thankful that my workplace in Green Square has charging on site for employees, but it would be good to see more on street parking charging options (e.g. the lamp post mounted options), as well as in council car parks. They should feature things like 'idle fees' to ensure the turnover of cars which need to charge and ensure they don't stay there for much longer than they need to charge.



The apartment building we live in does not have any charging options at all, not even a power point so it's real inconvenient not being able to charge at home (Pymont). Going on holidays - we have to limit the time we are away so battery doesn't go flat!! The Government should mandate all strata buildings to put in EV charging.

On street charging. Many people do not have off street parking at home so on-street charging is CRITICAL to get citizens in CoS to switch to an EV. Many people in our area own a petrol car and can't get an EV because of no charging on-street near their home. This is a large issue for people in the area. Limiting charging to off-street and parking-lots is NAIVE. CoS is being left behind by surrounding councils. People want to charge their cars within 5 mins walk of their home, not in some distant parking lot. There are great options for low visibility chargers for EVs. <https://www.carsales.com.au/editorial/details/now-you-can-charge-your-ev-from-the-footpath-131936/> There are chargers that also offer great revenue opportunities for council as well. <https://jolt.com.au/> Why not do this instead of all those advertising displays you have installed all over the city?

Lack of charging spaces. We live in an apartment block with no charger. It is too expensive to have one installed privately. There are some chargers around but with the increased uptake of EVs, it's becoming incredibly difficult to charge

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## Additional feedback

I currently own an electric cargo bike. E-bike subsidies, secure bike parking spots with charging (especially for those living in apartments and at train stations - I used to live in an apartment with no bike parking and my previous bike got stolen) and focussing on electrifying vehicles such as busses and garbage trucks would be great

Can the on-street recharging units also include a pedestrian footpath light, to improve visibility on footpaths particularly under tree canopies

Electrifying fleets of vehicles is a mixed good.

EVs are still cars/trucks/buses likely to kill. Carrying batteries makes them heavier yet. So, electrification should come with the use of smaller and lighter vehicles too. Let's not forget that buses can have overhead wiring.

Please promote a program for businesses and residents to switch from using a car to using an e-bike.

A number of city businesses could operate with electric cargo bikes, or share bike memberships for employees, instead of using a car (ICE or electric). Subsidies or a free trial or an education program would help. More at <https://www.forbes.com/sites/danieladelorenzo/2022/01/11/how-cargo-bikes-can-change-cities-and-local-food-supply-chains-for-the-better/?sh=1a5b377729f4>

Worried about charging - I wouldn't be able to charge at home, although price is a big thing. I see a lot of chargers, but they are very slow. Some good ones in other suburbs outside of Sydney, but it's no use having them so far away. They need to be in the LGA.

Why isn't there more questions about cycling or electric bicycles?

Take up of EV charging in apartments could be encourage & the process made simpler

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While electric vehicles appear to be the best option, currently, they do leave a question mark regarding the replacement of batteries and how they may be recycled in the future. I think we all hope that over time this will become a non-issue. Until then, I would hope and trust the council would continue to evaluate the current and emerging technology and not solely be wedded to electric vehicles.

Including EV charging requirements in new developments is a way to increase costs for new builds and discourage more supply in our city. We should reduce parking minimums, in general, to discourage driving and cheapen development.

While electrification is important, the biggest impact will be helping people give up driving and car ownership. Support for excellent walking, bike riding and public transport options, plus support for car share schemes could make a much bigger difference than just electrifying the existing vehicle fleet of Sydney.

My family of 4 adults don't own a car but use GoGet 4- 5 times every year and try to book an electric car. But generally not yet available and cannot always get a hybrid as second best. Otherwise we walk, ride a bike, or use public transport

Love the focus of electrification but would also love even more the targeting and uplifting of non-car based options. These cycle paths rock.

Overall I'm in favour of the key action areas, however I was disappointed in the lack of a detailed plan to electrify car share fleets. As someone who does occasionally need a car but doesn't own one, I make use of car share, and there are essentially no EV options available in the area. I think the city could be doing more to incentivise car share providers to start rolling out EVs where it makes sense right now, so there are at least some options available. A number of car share vehicles are based in apartment building basements already where chargers could be installed, so I don't understand why we wouldn't replace those with EVs which could be charged each night.

This is great. I love the quietness of journeys on electric buses, plus the prospect of not having to breathe fumes or hear engines whilst walking/cycling.

80% of my trips from Bondi to the inner west and CBD for work is by bicycle. Trips that are further away I drive.

City of Sydney policies and works are making it easy to choose active transport in preference to driving.

A ban on vehicles in larger parts of the city would benefit. Adopting sponsorship from renewable companies that have the capacity to do so would be a great change for large events.

Thank you for supporting sustainable transport options and a better future

it's so important to avoid 'cables on footpaths' or 'charging stations intruding on footpaths', we see this in cities and it's really bad for walking.

The electrification strategy must include. e-bicycle and micro mobility. Kerb side should for charging should only be available if there is adequate walking and cycling space. Walking and cycling space must be consider first before reallocating kerb space for charging cars.

Public Charging infrastructure for those without off street parking is critical.

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1. As well as reducing greenhouse emissions from motor vehicle use, the Strategy and Action plan should also aim to reduce motor vehicle ownership and dependence - electric motor vehicles still create noise pollution, kill/injure people and children, deter people from walking and cycling, consume vast amounts of public space, and generate significant non-exhaust air toxin emissions (tyre dust etc). The manufacture, transport and disposal of electric motor vehicles and their batteries also generates greenhouse and air toxic emissions, in addition to the well-documented human rights abuses. The Strategy and Action Plan does not even acknowledge these lifecycle emissions/impacts. 2. Motor vehicle ownership in the City of Sydney increased by 7 percentage points between the 2016 and 2021 Censuses. In just 20 years, the number of private motor vehicles in the City of Sydney has doubled! 3. The main driving force behind this unsustainable increase in motor vehicle ownership (and associated traffic generation) is the ongoing construction of vast car parking garages under new apartment buildings. All this underground parking construction has been costly, adding about \$100,000 to the price of an apartment and compounding the housing affordability crisis. 4. If the City of Sydney were serious about reducing transport lifecycle emissions and other impacts (covering vehicle manufacture, use and disposal), it would cap or reduce the number of public and private parking spaces in the city. For the minority of residents who genuinely need to own a motor vehicle, there is already an abundant number of dwellings with dedicated parking. What will the City's streets look like if the number of vehicles doubles again in the next 20 years? 5. It is disappointing that the Strategy and Action Plan does not include any actions to make it easier to charge electric micromobility vehicles. Newer apartment and office buildings do provide secure bicycle parking, but power outlets are not always provided. 6. The Strategy and Action Plan should use stronger language about public domain impacts. I.e., charging infrastructure for electric motor vehicles should not take any space from footpaths or bicycle paths. Ideally, it should be located in existing car parking spaces/lanes. 7. I have answered below that we live in an apartment with dedicated parking. I would like to clarify that this is a car parking space, which we do not need/use. Our apartment does not have dedicated bicycle parking for our electric bicycles.

Electric vehicles are not the only option. Gas and hydrogen anyone?

If people want to own electrical vehicles, then they should have the own garages to fuel up. Others shouldn't lose car spaces on streets, just for a handful of people... With the price of power going up, it will be more in the long run. How about all the emissions the electricity generates?? No one has brought that up.

They do not work. They are inconvenient.

Please increase parking for electric motorcycles. Please have all last mile delivery vans electric. Please allow importation of the carver. Please manufacture solar cars in Australia. Please retrofit buses with solar to run the AC

All new apartment blocks should be required to include vehicle charging stations. Subsidies should be considered to assist existing apartment blocks install charging facilities. In London (e.g. in Bayswater/Paddington), kerb-side charging points are provided with EV-only car parking adjacent ( a bit like the dedicated car share parking bays in CoS. This is a great idea.

I also have a problem with your equity statement which says "As electric vehicles are currently very expensive, more affluent people will be the ones who drive most of them.". That is true today but is changing extremely quickly as the worldwide motor industry pivots to EVs. Australia is already behind much of the developed world in terms of EV adoption but that will soon change very fast as prices continue to drop. Do not, therefore, make the assumption that private EVs are only for the rich - That will certainly not be true in a year or two's time and it is incorrect of the city to plan using that assumption. NB. - If it is of interest to you ... I am an early adopter and

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have owned an EV in Sydney for over 8 years, I helped draft the by-law for EV charging in my strata property and I was heavily involved in the technical aspects of it. Happy to help.

We have just bought a new petrol car because both the limited range of electric cars AND a lack of enough charging stations stops be from purchasing a fully electric vehicle.

We live on Raglan Street Waterloo and the Transport for NSW introduced four years ago transit buses 301, 302 and 303, which became 392 through our street, 120 runs per day, it's hell - our lives have been ruined. We got data under the freedom of information act (please see attached) showing that 80 % of buses are empty - this is the case of carbon on steroids, an abuse of the concept of a beneficial public transport system. They are connecting UNSW with the non-commissioned Waterloo station, mostly for foreign students who already got the light rail built for them. This is over-servicing if overseas markets and destroying lives of local Australians.

I would only ever buy a second-hand car, and I just don't think the market is there yet for second hand electric cars. I do think there should be tolls to enter the city as a non-electric vehicle. It'd be nice if residents were excluded though (it sucks to have to drive through a toll to leave your apartment)

Allow residents to install cable tunnels under public footpaths and nature strips so we can charge our EV's using our own solar feed.

In areas like Paddington NSW, it's hard to find a parking spot near your house. Most houses do not have a garage. In dense population areas there needs to be multiple charging EV in every street.

Kings Cross needs street charging.

While the idea of EV in Sydney and its intentions are good, as it produces no carbon emissions and other pollutants, as well as reduce our reliance on fossil fuels. Few more important considerations are needed to ensure such initiatives do indeed help us reach our carbon goals and reduce pollution. First, do we have plans to produce additional electricity from non-fossil fuel sources? As far as I understand, coal is currently our major source of grid energy, it is no cleaner than gasoline. If we cannot scale up the production of renewable energy at a reasonable cost, the only benefit is in casting the problems somewhere else. Secondly, considering the lithium-based batteries in those EVs, we need to evaluate whether the current lithium-ion batteries are indeed better for the environment. To answer that question, we need to ask: 1. Are we prepared for the safety issues related to high-capacity lithium batteries? This includes fire hazards when a collision or even uneven terrain damages the battery packs, there are examples of Tesla cars catching fire because of this, even one burnt to the bare frame because a flying chip of stone struck the bottom of a car. Indeed, not long ago a fire broke out near Geelong, Vic where lithium caught fire and the smoke contained toxic fumes. Source: <https://www.cnet.com/science/tesla-battery-fire-renewable-energy-plant-australia/> 2. Mining for lithium can have huge environmental impacts, especially in terms of pollution and its enormous water consumption. Now, can we extract lithium sustainably and economically? 3. Will old lithium-ion batteries really be recycled? Currently they cannot be recycled in a cost-effective manner, will we subsidise the collection and recycling of these batteries or will they create another waste problem? This time carrying with them toxic chemical waste? It saddens me to say this, as I am concerned about climate change and environmental issues. But I am only

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interested in solutions that brings real benefits. And I know this is a long essay of a feedback, and I thank you for considering my views, I hope it helps your planning.

We held help in strata building to be better regarding installing EV chargers in the building and not be just against them. Happy to collaborate and provide the issues that I had and my by-laws was declined

We have two petrol-fuelled cars in our family, but because we live in a unit without parking, and thus park on the street, and because there is such a dearth of public electric vehicle charging facilities in the Eastern Suburbs (and, I suspect, across NSW generally), buying electric vehicles is sadly not an option for us. I would very happily invest extra outlay buying an electric car for the environmental benefits as well as the reduced day-to-day running costs. It is incredibly disappointing that Sydney is so far behind many/most other major Western cities in this regard, and I wholeheartedly support major public investments to ensure a rapid transition to electric public and private transport.

The strategy is a good one!

Overseas experience shows that this form of transport is unsuitable and dangerous

There is little information for strata buildings to economically retrofit EV charging facilities within their buildings

we hope in the long run electric vehicle will be more affordable

I would love for there to be many more options for on street electric vehicle fast charging in my local area, to allow me to charge an electric vehicle close to home

Please have some self-service car wash facilities, for those of us who park on the street, and have no taps out the front of the house. This would make investing in a new car easier, as we can maintain it better.

I own in an apartment building in city of Sydney which I rent out, having lived there for two sustained periods. It has dedicated parking, for my unit, but no visitor parking (strata sold them off). I live in a free-standing home in the Burwood council area now

Australia has been slow to introduce infrastructure for electric and hybrid cars, meaning car manufacturers prioritise other markets so the options here are limited, and expensive. I live in a 70s apartment block with an off-street parking space (not secure) that has no possibility for adding a charger for my car. I need a new car and am keen to get an electric or hybrid but the circumstances do not support this, it's really frustrating!

most important are electric buses that don't emit noxious gases into the faces and noses of pedestrians and bicycle riders.

1. Your premise of increase use of cycling is incorrect. It should be clear by now that bike riding is not a preferred transportation for Sydney riders. Cycle paths are severely underutilised and causes increase vehicle emissions due to stop start traffic. 2. EVs are great but unaffordable for many. The strategy needs to be progressive. 3. European cities offer a model for charging ... trickle charging from 220-240V to fast charging at dedicated places - open shopping centres, car parks. And let's not forget the light poles ... check Teddington in London. 4. Underground charging does pose a risk, albeit small, when an EV experiences thermal runaway using lithium type batteries. How will the council manage this fire hazard at residential and commercial places? (Existing sprinkler systems won't do.)

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Electric public service vehicles (bus, garbage trucks etc...) Is a fantastic idea and should be implemented asap, as a resident noise is just as a concern as emissions for me and my family) I have a concern city of Sydney will charge residents who have the right for a parking permit a fee for owning combustion engine cars. I don't think this is fare and hope this will not happen as not everyone can afford electric or a new car (combustion or electric).

"Private vehicles, but now they're electric!" is not a winner, focus on reducing and eliminating private car ownership in general. Especially here in the City of Sydney, road vehicles need only be for public transport and deliveries to businesses. There should be a large congestion charge. There should be a sinking cap on the number of parking permits. Parking spaces should be replaced with trees and on-street dining and cycle ways.

I strongly support Sydney Buses switching all their buses to being electric. I have hired a EV quite a number of times and have been pleasantly surprised at how good they are, and how easy it is to get used to charging them rather than buying petrol. I think it is wonderful that they do not emit any carbon dioxide, and to those who say that instead we are burning coal to produce electricity to charge them, well come on everyone, put solar panels on your roofs.

I would like our building strata committee to be educated on in building charging options.

Good to see a strategy in place for the transition.

Great initiative. Thank you. Get the Inner West Council on board too - or better still take over council administration the BALMAIN Peninsula please. The White Bay project is a natural link!

I like the city to focus on electric buses and getting EV chargers into existing older apartments.

Existing strata plans need to implement EV charging

Love the plan - more separated cycle ways, cheaper EVs, especially love the idea of chargers on power polls to enable people in the CoS area without car spaces to charge where they live. Keep going thanks

I live in older strata. We need help to install charging facilities both in strata law and in cost-effective technological solutions.

I commute from South Western Sydney (2172) where thankfully I am able to charge at home. I work in Green Square (2015) several days a week, where I am thankful I have charging options at my workplace. I would love to see more options nearby on the street, for charging, or other benefits for EVs to encourage more people to go EV instead of petrol.

As mentioned all strata buildings should have a mandate to retro fit EV charging or at the least allow any owner to install a standard power point at their car space. Some owners living in the same building are keen to switch to EV but are put off by the lack of infrastructure. We are still waiting for the Owner's Corporation to meet and advise. A Government subsidy would definitely assist here and ensure a speedy transition.

The strategy should focus on EV charging where people park cars for long periods of time - i.e. at home - given charging takes hours. The focus on destination charging is disappointing, as it will not make EV ownership any easier for those that do not have off Street parking - charging a car for 5 minutes while you grab a coffee is not going to get you anywhere near a full charge. More on Street public chargers on every residential street is needed. Not other chargers are needed, not at work, not at destinations, not in public car parks. I fear this policy will further reinforce the barriers to EV adoption, not improve them.

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Advocating for fees which discourage driving disproportionately affect those with family out of Sydney - EV driving is preferable to air travel for zero emissions. Not to mention public transport in Sydney is so bad in parts driving is non-negotiable, particularly with kids. The strategy isn't clear in terms of how it will help residents in existing apartment blocks. Advocating isn't enough + CoS can do more than that. Subsidising feasibility studies won't help - strata either won't take it up or will say it's too expensive. People won't want to pay for installation of chargers through strata fees if they don't have an EV. Chargers themselves need to be subsidised, especially if you don't want to install public chargers (which it seems like you don't want to do from this strategy). There's also absolutely no reason why chargers can't be introduced into public places, particularly car parks at local parks (e.g. car park at Sydney Park) - people visit those parks for a significant portion of time which allows for charging. The on-street chargers can be relatively small and inconspicuous now. There's no recognition that charging a car is a very different proposition to filling a car with fuel - there's a reason charging at a location is popular. Leveraging off existing service stations won't work because charging takes time that filling a car with fuel doesn't. The strategy should be looking at public places (see Newcastle where a new charger has been installed on a electricity pole at the beach). There's also no mention of cost - there's no reason CoS charging has to be free but a subsidised cost will help keep charging rates low and encourage uptake. Also no mention of mix of AC or DC chargers and where they're most appropriate. AC chargers require less upkeep - put them in spots where people park for an hour or two (e.g. car parks) and that will work. Also, factor in car park costs - if people have to pay large car park fees plus charging fees, they won't use them.