



# Thinking about installing EV chargers?

Use our quick guide to help you assess costs before you start.



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## Unsure of the cost and complexity of installing EV chargers at your site?

If you are planning to purchase Electric Vehicles you need to know what's required to set up and future proof EV charging infrastructure avoiding large one-off and/or unexpected costs.

New Zealand Post is serious about carbon reduction and electric vehicles are a crucial part of achieving our ambitious reduction goals. With the support of EECA, we have been piloting electric vans and cars and putting in place charging infrastructure to support them.

We want to share what we have learnt and help more businesses place EVs into their own fleets.

The use of the checklist and flow chart, developed with the assistance of Lumen, can help businesses understand what to consider before you start work.

### Some key points are:

1. Ensure you understand if your site has capacity to accommodate EV chargers and at times they will be needed – this could be the highest cost if you have to upgrade your transformer and site infrastructure.
2. Introducing energy efficiency measures in your existing building could be one way of freeing up capacity for EV chargers, without having to invest in new capacity. A holistic and long term consideration of the sites energy use is required.
3. The distance from the power source to proposed charger location can have a significant impact on installation cost.
4. Charger technology is constantly evolving with smarter EV chargers and software – make sure you talk to a few vendors to understand the long term impacts of your choices now to ensure you are not closing of future options.
5. Health and Safety requirements are being reviewed regularly. Ensure you get good advice on the latest requirements of installing and using EV charging infrastructure.

The assessment tool (flow chart) can be used by your energy manager / electrician to provide you with a quick snapshot on whether you are facing relatively low – to – high EV charger install cost. The generic checklist can then be used to provide a more detailed analysis of project costs.

Please note this is a generic guide to assist with determining electrical capacity for EV chargers. It may not accommodate your particular scenario. We recommend you liaise with your site electrician as part of this process.

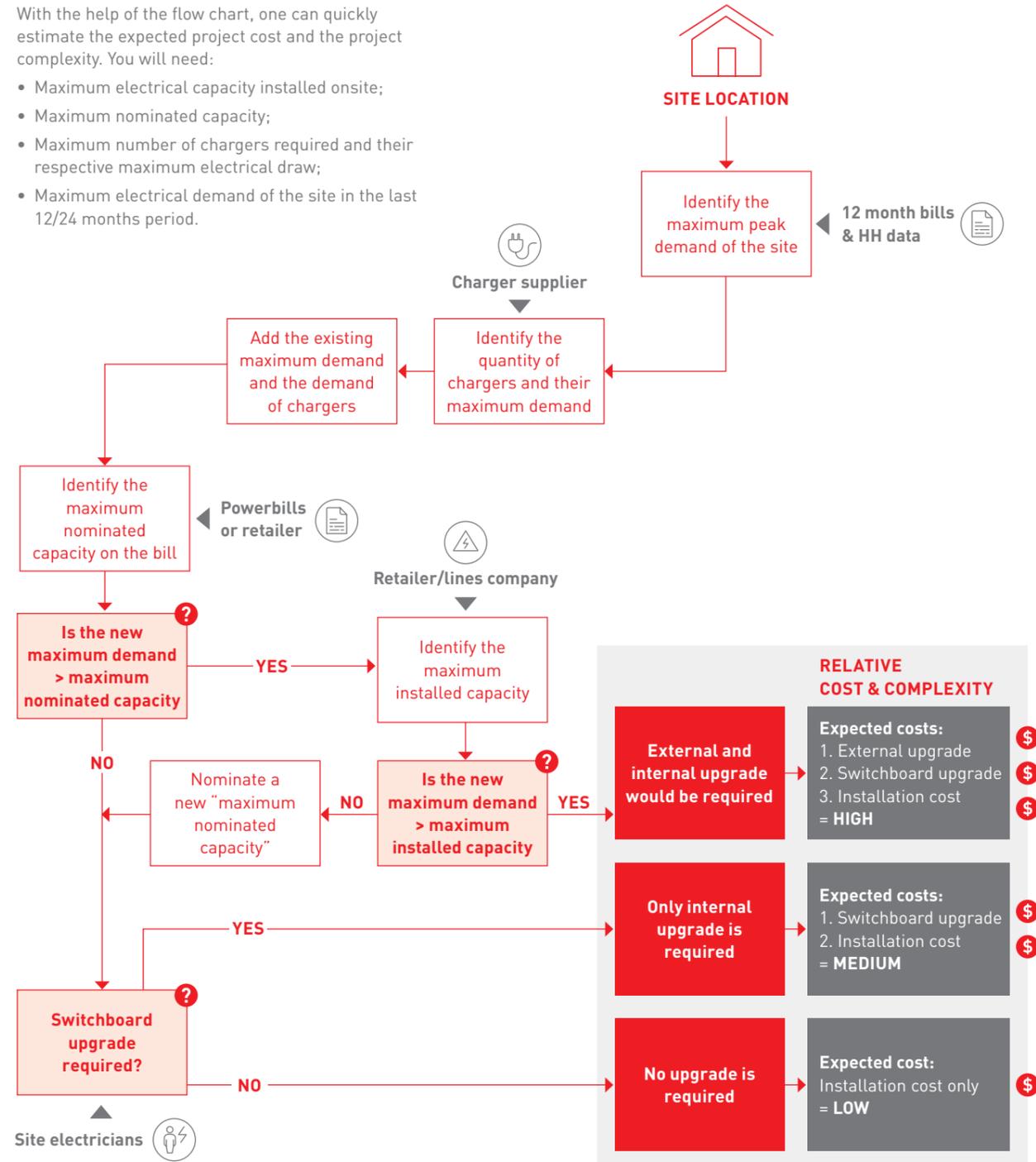


# Assessment tool – to determine EV charger infrastructure costs

This flowchart is presented as a tool to identify the relative expected cost as “High”, “Medium” and “Low” of installing the EV charging infrastructure on site.

With the help of the flow chart, one can quickly estimate the expected project cost and the project complexity. You will need:

- Maximum electrical capacity installed onsite;
- Maximum nominated capacity;
- Maximum number of chargers required and their respective maximum electrical draw;
- Maximum electrical demand of the site in the last 12/24 months period.



# Generic checklist / electricity capacity analysis

The objective of the generic checklist is to qualify a selected site/s against a given budget and project complexity for installing predetermined number of EV charging stations.

The checklist, using a step-by-step process, can be used to assist in determining project cost and project complexity when looking to install EV charging infrastructure on site.

## A

Site details, current electricity use, nominated maximum capacity and existing maximum capacity	Remark / Note
1. Site name:	
2. Site address:	
3. Contact person:	
4. Hours of operation (circle one)	24/7 12/6 8/5 other specify: _____
5. What is the current nominated maximum demand onsite?	_____ (kW) or _____ (kVA)
6. What is the current maximum electrical capacity installed onsite?	_____ (kW) or _____ (kVA)
7. What is the maximum demand recorded over the last 12/24 months	_____ (kW) or _____ (kVA)



## B

B. Capacity of the site in relation to EV charging stations (circle as appropriate or write values)			Remark / Note
1. Does the site have an EV charging station? <b>If your answer is "No", go to B3.</b>	Yes	No	Unknown
2. How many EV chargers are there currently and what is their total maximum capacity?	Quantity: _____	Max. Capacity: _____ (kW)	
3. How many new EV charging stations are required? What is their total maximum charging capacity?	Quantity: _____	Max. Capacity: _____ (kW)	
4. What time of the day would the EVs will be used? (Circle one or both)	Day	Night	
5. Add the maximum demand over 12/24 months of the site and the maximum charging capacity of all chargers as answered on A7 and B3.	Total Future Demand: _____ (kW)		
6. Compare the result of B5 against A5. Is B5 greater than of A5? <b>If the answer is "No", go to B8</b>	Yes	No	
7. Compare the result of B5 against A6. Is B5 greater than 90% of A6? <b>If the answer is "Yes", go to C1</b>	Yes	No	
8. The expected new site demand will be less than the installed capacity, thus, infrastructure upgrade to the site will not be required. <b>If your answer to B6 is "Yes", nominate a new maximum nominated capacity which is B5.</b> <b>Go to section C4.</b>			

## C

C. Location of charging stations and the respective infrastructure upgrade requirements (circle as appropriate or write values)		Remark / Note
1. Calculate the maximum capacity required. It would be ~120% of B5	_____ (kW)	
2. Contact your electricity provider (lines company) to seek capacity upgrade requirements and the respective cost of the upgrade for [C1 capacity].		
3. List down the capacity upgrade requirements for C1 capacity.		
<ul style="list-style-type: none"> <li>• _____</li> <li>• _____</li> <li>• _____</li> </ul>		
4. Record the total cost of capacity upgrade. (if there is no upgrade requirement record "zero")	Cost: _____ (\$)	
5. Is the location of chargers identified? <b>If your answer is "Yes", go to C7.</b>	Yes	No
6. Decide the location of the EV chargers and send it to the site electricians. Note: please consider location carefully as cable length can have a big impact on final project cost.		
7. Contact your site electrical contractor with information on C6 to obtain information on the requirements of the switchboard upgrade.		
8. Does the site switchboard require an upgrade to accommodate the EV chargers? <b>If your answer is "No", go to C11.</b>	Yes	No
9. Contact your electrician to seek switchboard upgrade requirements and the respective cost of the upgrading it to accommodate the EV chargers.		
10. List down the switchboard upgrade requirements		
<ul style="list-style-type: none"> <li>• _____</li> <li>• _____</li> <li>• _____</li> </ul>		

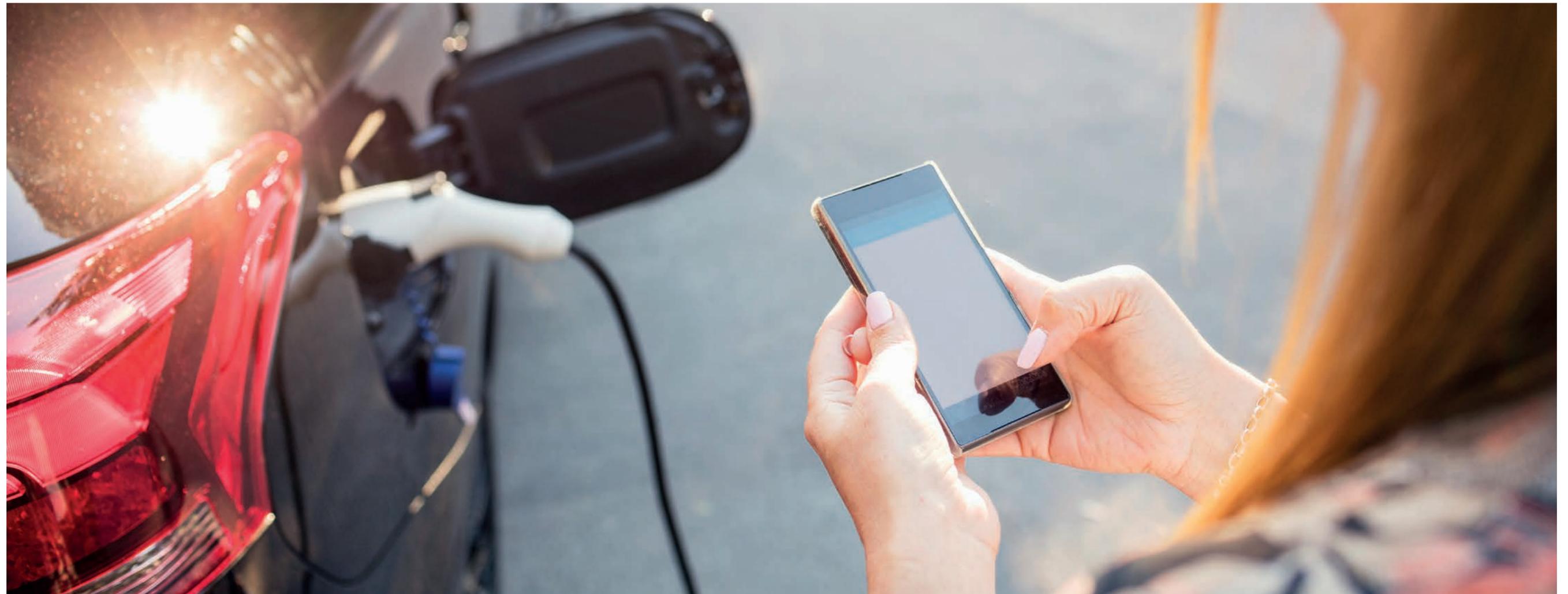


**C** (CONT.)

Location of charging stations and the respective infrastructure upgrade requirements (circle as appropriate or write values)		Remark / Note
11. Record total cost of switchboard upgrade. (If there is no upgrade requirement record "zero")	Cost: _____ (\$)	
12. Contact your electrician to seek installation requirements of installing the chargers at the proposed location excluding the switchboard upgrade covered in C9 - C11. List down installation requirements.	<ul style="list-style-type: none"> <li>• _____</li> <li>• _____</li> <li>• _____</li> </ul>	
13. Record total cost of installing the EV chargers excluding capacity and switchboard upgrade.	Cost: _____ (\$)	

**D**

Total Project Cost (circle as appropriate or write values)			Remark / Note
Fill the respective costs	Supply cost of EV chargers	\$ _____	
	Capacity upgrade cost (C4)	\$ _____	
	Switchboard upgrade cost (C11)	\$ _____	
	Installation cost (C13)	\$ _____	
	Other costs (project management and miscellaneous)	\$ _____	
<b>Total Project Cost</b>		<b>\$ _____</b>	



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# Get in touch

**Please contact us on [sustainability@nzpost.co.nz](mailto:sustainability@nzpost.co.nz)**

If you have any questions about the information contained within these guidelines.