ev ready

introducing electric vehicle charging into your community

29 June

altogether.

introduction

ev landscape in australia

ev readiness in strata

charging options

approval and process

energy assessment

funding options

action is required today

Short-sighted decisions made today over electrical and civil infrastructure and the capacity and technology of charging solutions could cause EV-infrastructure costs to sky rocket for our communities.

electric vehicle landscape

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building a sustainable ecosystem

The National Electric Vehicle Strategy outlines the government's commitment to accelerating the adoption of EVs across the country addressing:

- barriers to EV uptake
- promote charging infrastructure development
- support industry growth
- and enhance consumer awareness.

The government has set a target for new vehicle sales to be electric by 2030 and is working towards achieving this through various measures, including financial incentives, research funding, fleet procurement, and industry collaborations..

are you ready?

More than 50 million electric vehicles could be sharing roads in the next five years but how quick will our communities adopt them?

drivers for change

cost of ownership

total cost of EV ownership has approached parity with ICE vehicles at a faster than previously predicted rate

government incentives

QLD EV strategy: The future is electric

NSW: Future transport strategy

mainstream car production

plug in hybrid and full electric models are being introduced by mainstream brands

charging site expansion

Charging infrastructure expansion is underway with Australian policy support

corporate fleet electrification

Many companies in Australia are transitioning their corporate fleets to electric vehicles as part of their sustainability initiatives

environmental concerns

Growing awareness about climate change and the need to reduce greenhouse gas emissions.

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the ev potential benefit for strata living

economic

- economic benefits such as fuel savings and reduced maintenance costs

convenience

- **convenience of charging** from home

long term investment

- increased property value and/or rental returns

environmental

- environmental benefits such as lower carbon emissions

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electric vehicle readiness in strata

it's not plug and play

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complexities for strata

ownership and decision making

individual unit owners, property managers, and strata committees

infrastructure planning

available parking spaces, electrical capacity, and ease of access

electrical capacity and upgrades

increased demand may be necessary

cost allocation

unit entitlements, usage agreements, and equitable distribution of expenses

parking management

assigning dedicated parking spots and preventing unauthorised use

strata bylaws and regulation

navigating legal and bureaucratic processes to obtain necessary approvals

future proofing and scalability

Incorporating smart charging solutions, anticipating future demand

charging options.

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options to provide convenience charging

1

trickle charging

- simple plug in existing powerpoint
- comes with car
- Max 2.4 KW
- no central control

15-20 hours

2

accelerated charging

- professional install
- circa $2K-$10K
- Up to 7.2KW 1P
  Up to 22.6KW 3P
- DLM without significantly impacting performance

3-4 hours

3

DCFC fast charging

- professional install
- circa $10-$50K
- 23-50 KW
- shared nature impacts convenience.
- DLM possible but impacts performance

1.5 hours

4

DSCFC super fast

- professional install
- Circa $70-$210K
- 51-350 KW
- shared nature impacts convenience w some cars not compatible
- DLM possible but impacts performance

10mins

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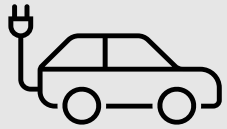
enabling accelerated charging

switchboard

upgrading the main switchboard may be necessary for EV infrastructure integration to handle increased electrical load.

dynamic load management system

adjusts the power supply and balances it between chargers, allowing for optimal charging of multiple EVs without increasing the contracted power.



cable pathways

provide a protected pathway for cables to run through safely and permitting easy maintenance.

metering

ensure fair billing practices, access data on energy usage, and monitor electricity demand to prevent capacity overloading.

approvals and process.

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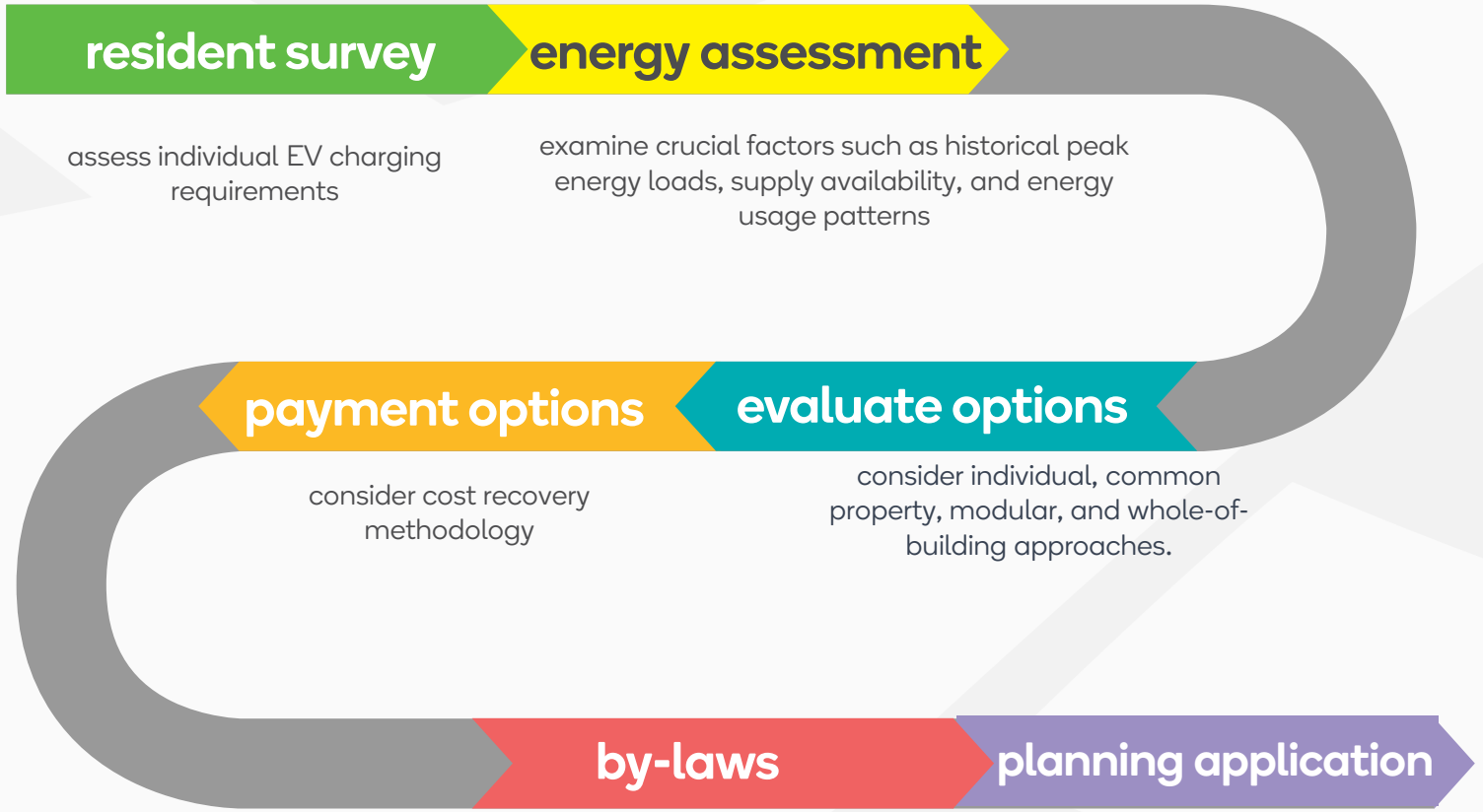
road map to implementation

one can grasp the process of safely and efficiently integrating EVs and chargers into a strata scheme, despite the challenges involved.



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seeking approval

- motion to authorize works to common property
- motion to create a by-law to regulate connection to EV backbone and use of common area EV chargers
- special by-law – EV backbone connection and use of common area EV chargers
- infrastructure is regarded as an addition to the embedded network and require a variation to any ENMSA already in place

approval	queensland	new south wales	victoria
body corporate	Ordinary – 50% (Majority) Special – 75%	Sustainability Infrastructure Resolution- 50% (majority)	depends on $ amount, or if building or planning permit required Ordinary 50% (Majority) Special - 75%
legislation	Body Corporate and Community Management Act and Body Corporate and Community Management Regulation 2020	Strata Schemes Management Amendment (Sustainability Infrastructure) Bill 2020 – Part 1(5)	Owners Corporations Act 2006 - S24 (4), S25, S53(2)
council	requirements vary between jurisdictions Fire services position statement sets out considerations for private certifier	exempt in accordance with the State Environmental Planning Policy 104B SEPP 2007. Fire Service NSW are currently conducting a review	

energy assessment

system constraints

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understanding your load

maximum kVA capacity

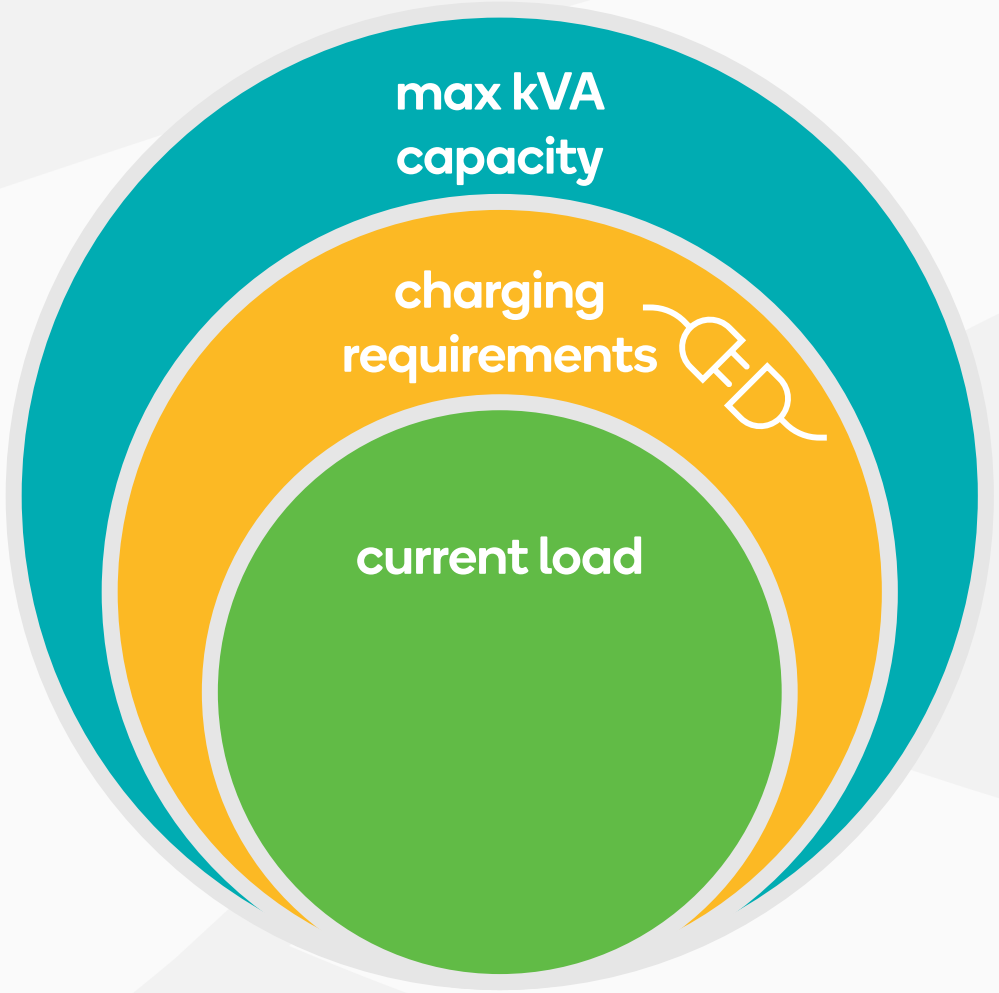
The maximum kVA (kilo-volt-ampere) represents the total electrical capacity or power capability available for use in the strata community.

ev charging requirements

To determine the energy required for EV charging, we consider the power demand of charging stations and the charging duration

current load

The building current load refers to the average amount of electricity consumed by the strata community at any given time.



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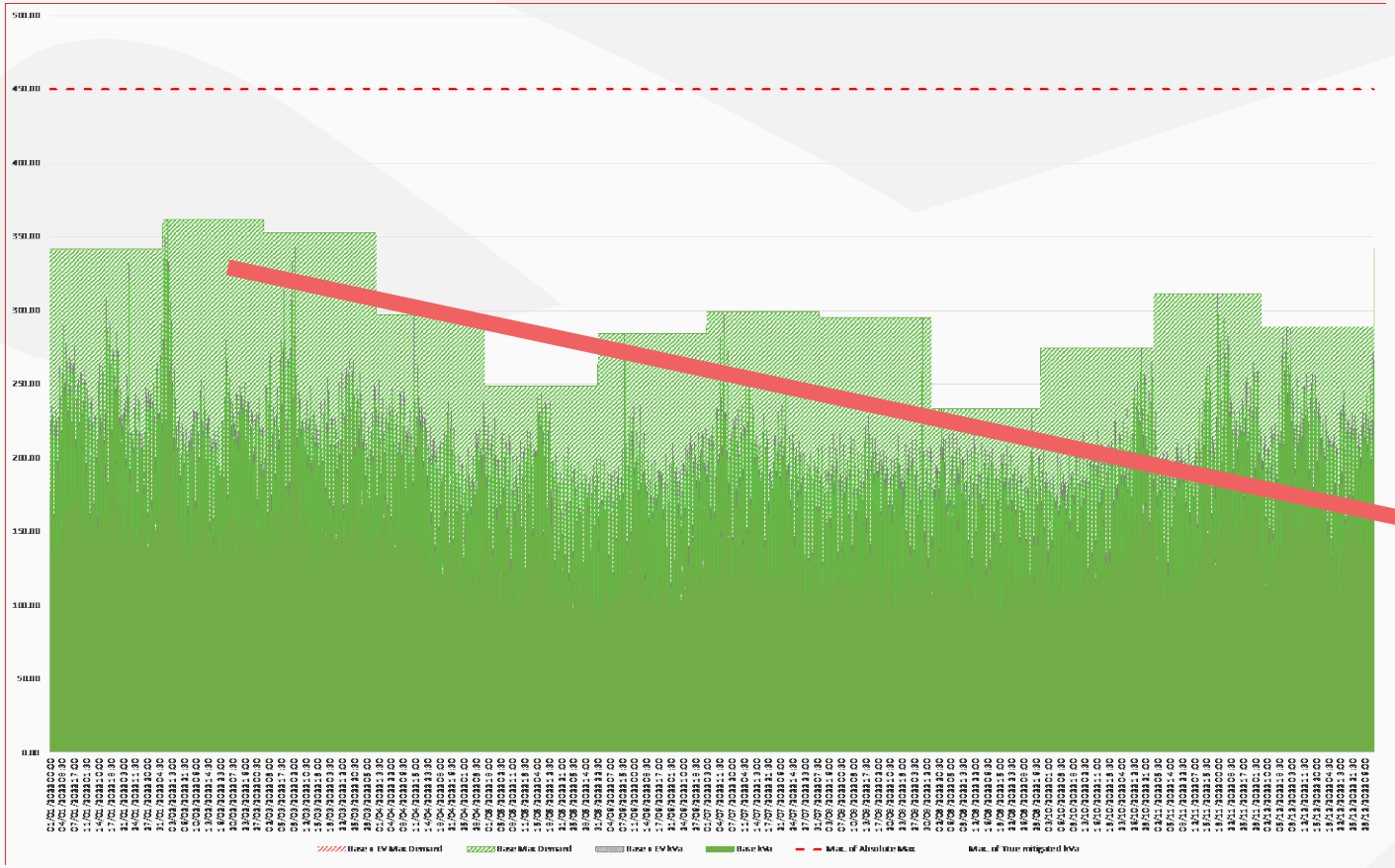
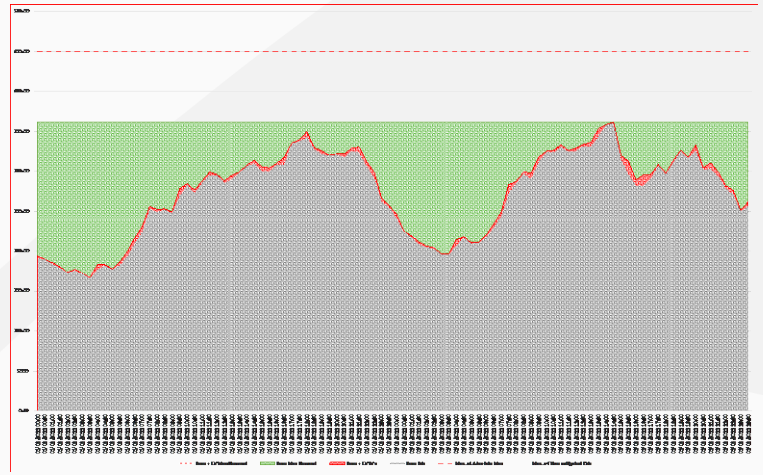
case study



hypothetical community

- Looking to introduce 10 EV chargers
- Assesses their 12mth historic data and interval patterns



12 months

worst day 12am-11.59pm

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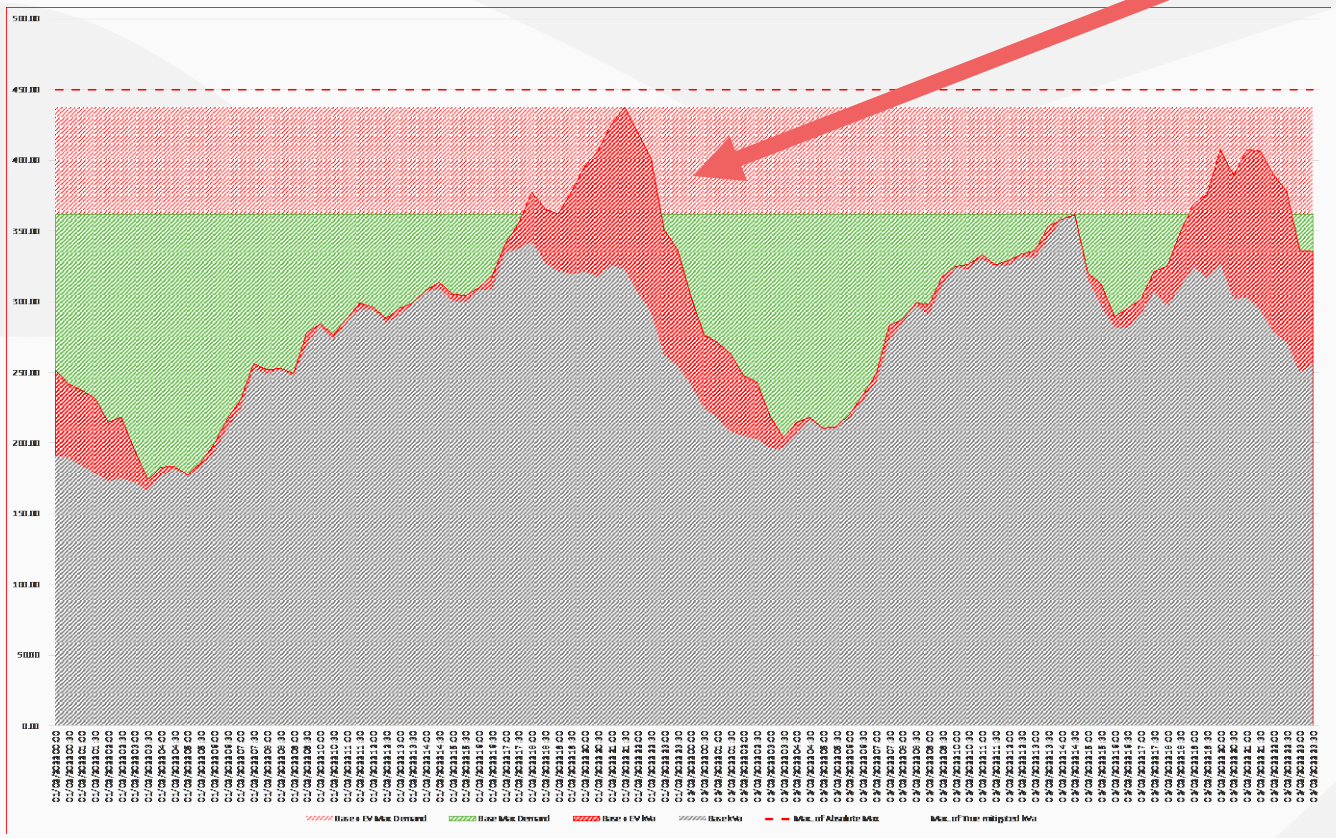
case study



	Max AC	Max DC	Battery Size
Volvo C40 Recharge	11.0	133.0	69.0
Tesla Model 3m Long Range	11.0	250.0	82.0
Kia EV6 Long Range	11.0	233.0	77.4
Lexus UX 300e	6.6	35.0	54.3
MG ZS EV Long Range	7.4	94.0	72.6
Nissan Ariya e-4ORCE	22.0	130.0	91.0
Polestar 2 Long Range	11.0	151.0	78.0
Mercedes EQV 300	11.0	110.0	100.0
Jaguar I-Pace EV400	11.0	104.0	90.0
Hyundai Kona Electric	11.0	77.0	67.5
BMW iX3	11.0	155.0	80.0
Audi e-tron 55 quattro	11.0	155.0	95.0
Porsche Taycan	11.0	262.0	93.4
Mini Cooper SE	11.0	49.0	32.6

hypothetical community

- 10 EV chargers
- With no control
- Demand exceeds capacity resulting in
  - additional costs and/or
  - damage to the system

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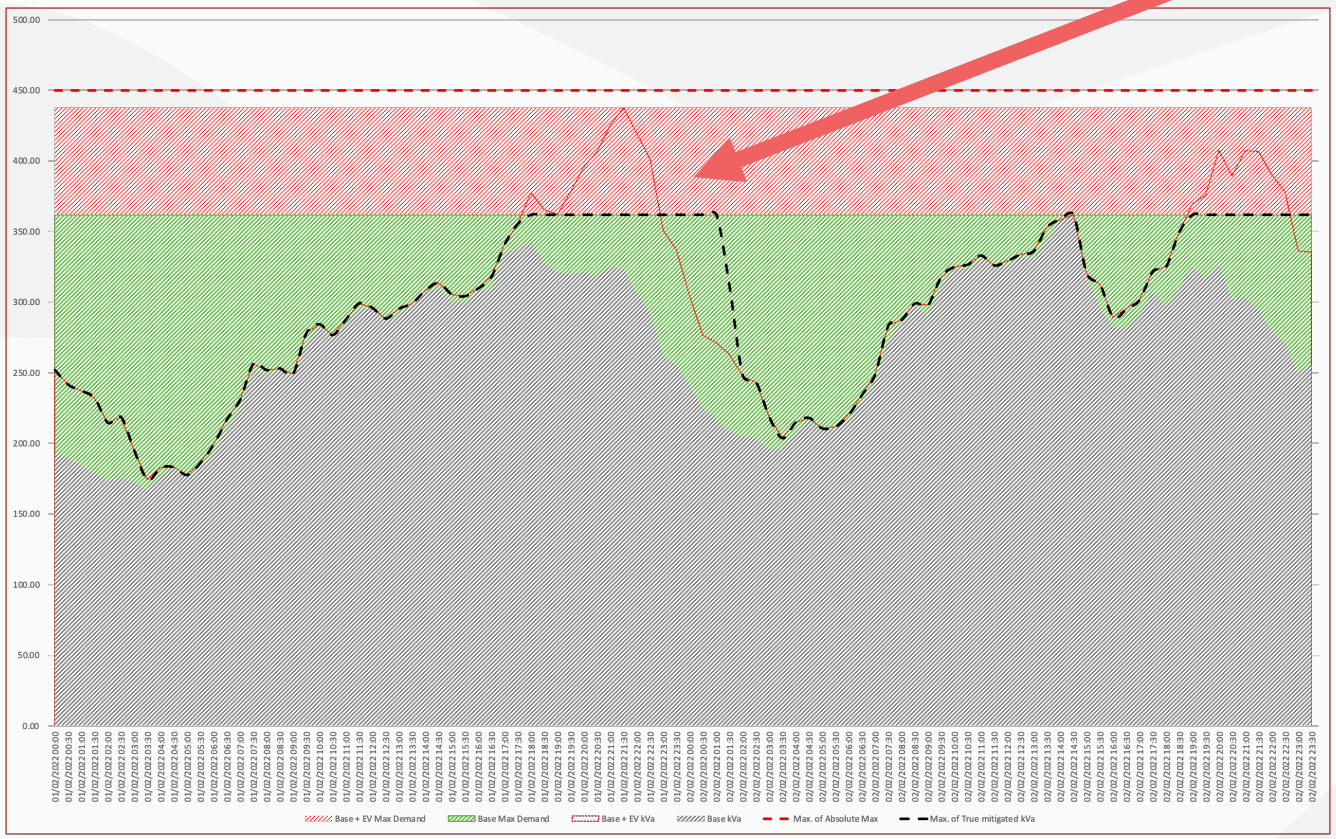
case study



Demand Control

- Slows down or turns off EV charging to prevent breaching capacity setpoint
- Defers charging moderately until after demand drops below setpoint
- Fully automated controls

hypothetical community

- 10 EV chargers
- With dynamic load management
- Energy load is managed automatically to ensure maximum demand is not breached.

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funding options

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funding options

owner's corporation capital fund

OC pays upfront from capital fund

special levy from owners

whereby owners are asked to pay.

3rd party infrastructure funding

whereby the OC pays a fixed monthly repayment

co-fund infrastructure

whereby the OC contributes what it can afford from the OC capital fund and 3rd party fund the remainder.

questions

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