



ClimateWorks

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ClimateWorks Australia was co-founded by Monash University and The Myer Foundation
and works within the Monash Sustainable Development Institute

EV Ready Local Government Fleets

Charging for Fleets Webinar

Claire Connell



ClimateWorks
AUSTRALIA

Founded in 2009 through a partnership with The Myer Foundation and Monash University and working within the Monash Sustainable Development Institute.



Contents

1. Webinar and project introduction
2. Types and costs of chargers
3. Site considerations
4. Key learnings from Councils
5. Charging station management
6. Next steps
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Guest Speakers



Carola Jonas - Everty



Rob Powell - Banyule

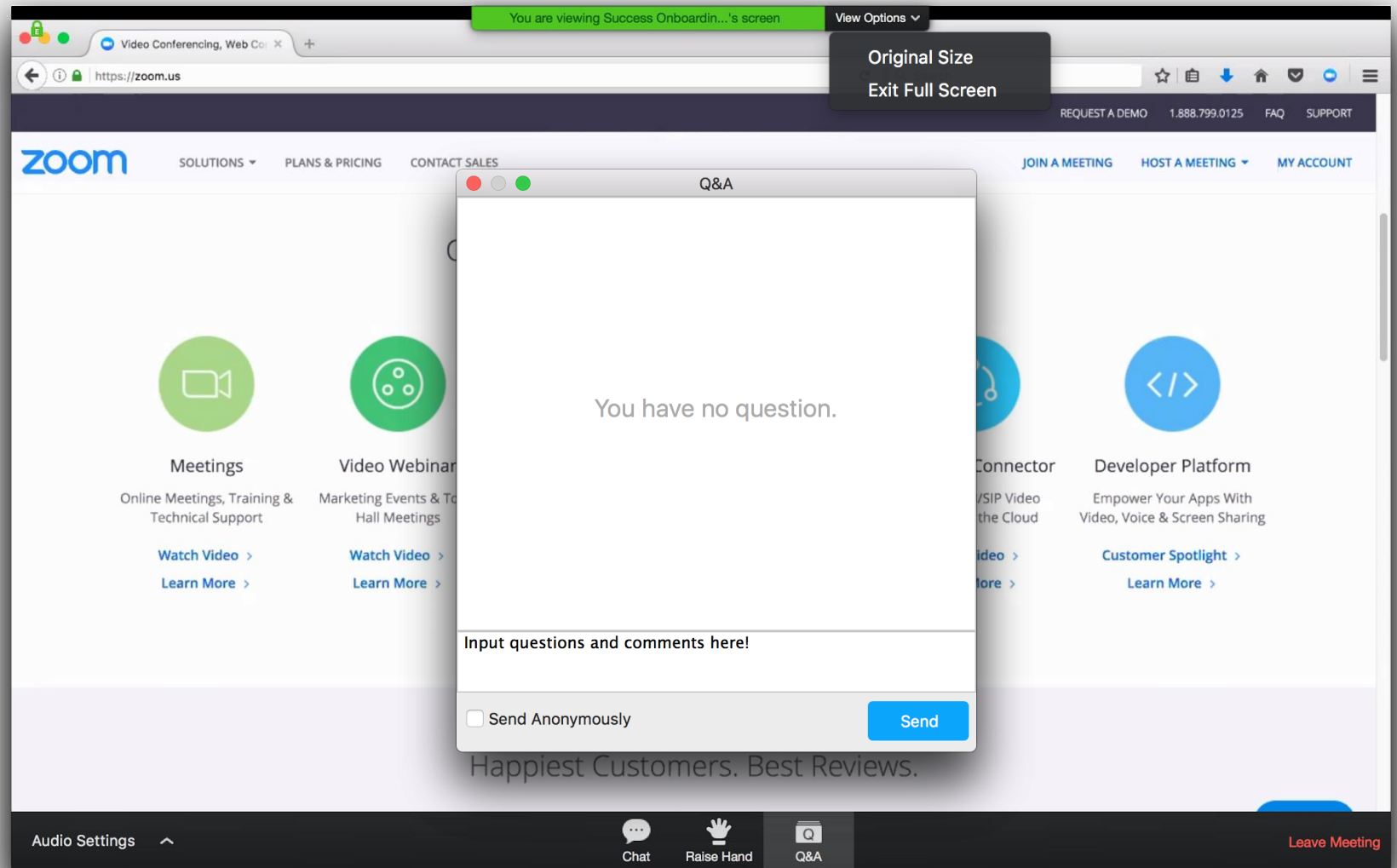


Bede Doherty - Consultant



Stuart Nesbitt - Moreland

Participation and interaction



Electric vehicle ready local government fleets

Project aim: enable greater uptake of electric vehicles in local government fleets





EV charging station management

Plug types and 'smart' chargers



Non-networked

(Often just a power outlet or 'dumb charger')

Installing 'expensive' charging stations might not suit every use case or supplier of EV charging. Typically, these are:

- Caravan and camping grounds (at this early stage)
- Showgrounds
- Road houses
- Residential buildings

Networked EVSEs

(Electric Vehicle Supply Equipment connected to the internet and compliant with Open Charge Point Protocol)

There are many advantages of installing commercial charging stations, whether that's smart charging, load management, tariffs, etc. These chargers are usually:

- Public charging (Level 2 and Level 3)
- Car parks
- Work places
- Councils
- Universities
- Hotels

How much do chargers cost?

<p>Home and private car parks (AC 7-22KW)</p>		<p>\$1,700 - \$3,000</p>
<p>Commercial car parks, car dealerships, retail centres, etc. (22AC and 23-25DC)</p>		<p>\$5,000 - \$17,000</p>
<p>Public charging locations (outdoor, robust, fast (50KW)</p>	 <p>22KW AC</p>	<p>\$35,000 - \$50,000</p>

Fleet charging and charging station management



Residential (when fleet car is taken home)

Fleet vehicles are often taken home by employees and in the case of EVs may be charged at the employee's home location. Smaller batteries can be fully charged overnight from a wall socket. Larger batteries (60kWh+) may require a home charger to increase the charging speed/rate. It cannot be expected that employees pay for the electricity themselves. A networked charger measures the electricity supplied in kWhs and therefore the exact cost can be appropriated to the user/car or cost centre.

Developers & Building Managers

Building car parks may not be wired for each parking bay to access a charger. During the transition of the fleet, it may be only a percentage of cars that need a charger and charging bays can be installed as necessary. Access and signage for the charging bays needs to be managed, especially when multiple cars share a charging station. Additionally, many existing buildings have a certain load profile which means that charging must not exceed a specific amount of electricity supplied by the charger to avoid overload and potentially power cuts as a consequence. Managed charging can help balance the load between chargers within the amount of power allocated to the charging sites by the building management system.

Governments

Councils and State Governments may want to provide EV charging as a service to their constituents. Providing access to charging stations can provide additional revenue streams. Even if charging is unpaid, managed charging provides insights into the usage of the charger and which can help making decisions to upgrade or expand the number of chargers.

Charging Infrastructure Categories

Hobsons Bay City Council – Discussion Paper

Where EVs are charged	Charger power	Ideal locations	Activities enabled
Inter-regional	50kW+ DC fast chargers	Convenient locations	Long distance travel
Destination	7 – 22 kW chargers	Tourist destinations, shopping centres	Widespread travel and EV tourism
Workplace	7 – 22 kW chargers	Park and rides, workplaces	Complete EV ecosystem
Home	7 – 22 kW chargers	Off-street parking	Better grid utilisation

Electric Vehicle Charger Speeds

Hobsons Bay City Council – Discussion Paper

Level	Charger power (kW)	Charger speed (time to recharge)	Range per hour (RPH)	Info
1	2.3kW	12+ hours	7.5 – 15km	Standard electrical power points suitable when long charging times are available e.g. overnight.
2	3.5 - 22 kW	3.5kW c. 10 hours; 7kW c. 6 hours; 22kW c. 2 hours	18-40km	Requires expert installation and robust equipment due to faster charging speeds and higher heat generation. Higher speeds are suited to workplace or destinations such as shopping centres or fast home charging.
3	50kW+	20-30 mins to 80% charge	70km/10 minutes	Require specific EV units and upgrades to services as chargers require more power than a house. Recommended for highways or to allow quick charges on longer trips.

Site Considerations – Banyule City Council Examples

- Rosanna Library
- Banyule Operations Centre
- Greensborough Office

Rosanna Library



Rosanna Library



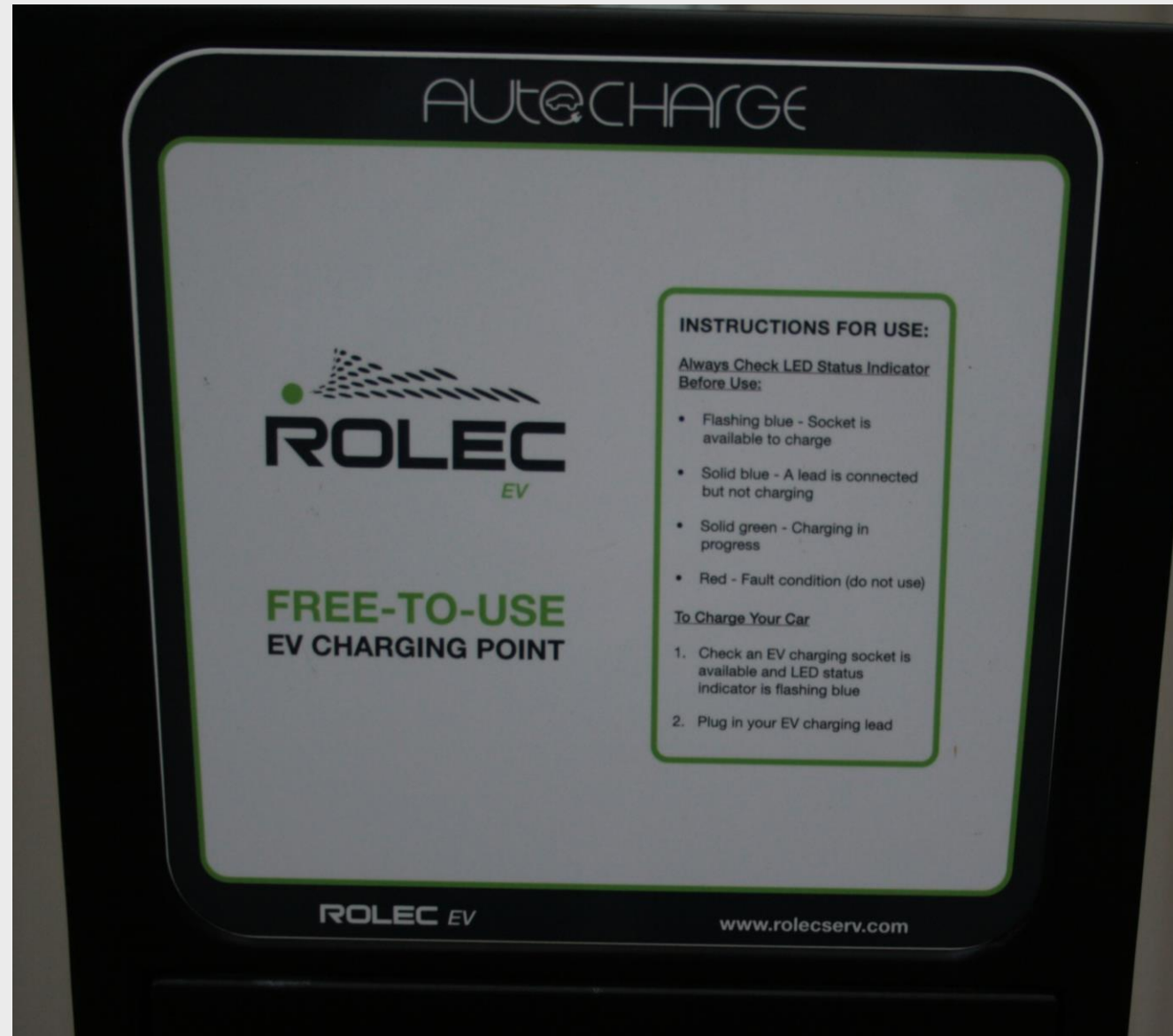
Banyule Operations Centre



Operations Centre



Signage



Signage



In use



Greensborough Office



Greensborough Office



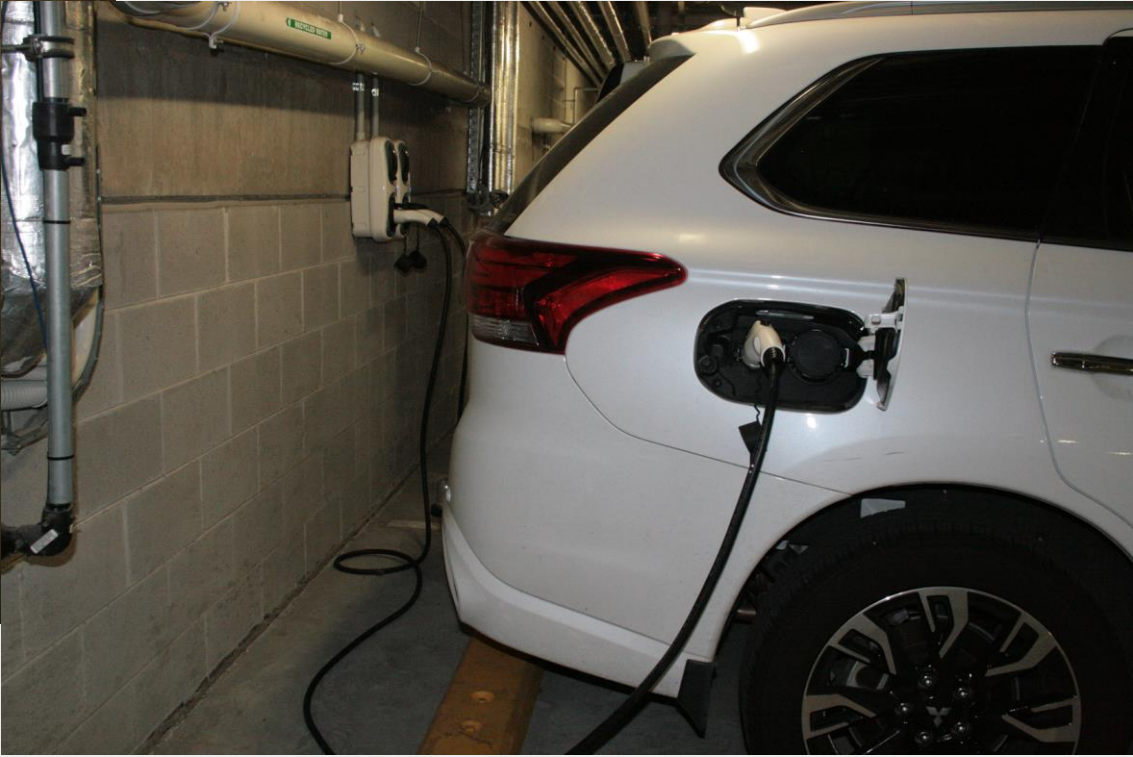
Greensborough Office



Greensborough Office – In use



In use



Car signage



Stuart Nesbitt – Moreland City Council Experiences

- Linking with renewable energy
- Planning EV charging for new developments
- Establishment costs
- Maintenance costs
- Staff management; recharging at end of use

Hobsons Bay Council Learnings – Surveying, Planning, Trenching and Electricals

- Trenching and electrical works including cabling can become expensive. Try to install EV charge points along with other works if possible to share costs.
- Electrical supply to older buildings can be constrained – what's available will largely determine the number of charge points that can be operated concurrently
- An electrical consultant can provide detailed designs and how many EV chargers can be accommodated with the available supply
- Underground service investigations are generally necessary as a first step to indicate how trenching and excavations can proceed
- Try to futureproof the installation by laying excess conduits and points of isolation so that chargers can be added later on

Hobsons Bay Council Discussion Paper

EVCS Establishment Costs – 50m from supply and no previous infrastructure

Item	Minimum Cost (AU\$)
Site preparation	\$2,000
Trenching	\$10,000
Pipe, pits, conduit	\$1,000
Cabling and pull-through	\$250
Distribution board	\$1,500
Slab, mounting and installation	\$5,000
Termination and commissioning	\$1,000
Total	\$23,750

- Brownfield site example
- Locating chargers needs to prioritise costs associated with linking to electrical supply, other forms of parking more easily relocated
- Council examples have not been this much (Moreland & Banyule)

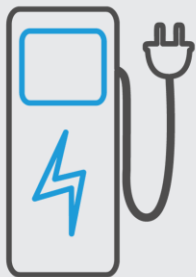


EV charging station management

Why charging station management?

Fleet EV drivers

- Stop/Start a charger
- Make a booking / access at scheduled times
- Allocate costs to a car/user or cost centre



Charging station operators

A cloud-based backend that allows them to

- monitor
- manage
- Monetise (if selected)

their asset. These solutions also provide visibility and reporting of charger usage and help making informed decision for further charging infrastructure investments.



Charging station operator dashboard



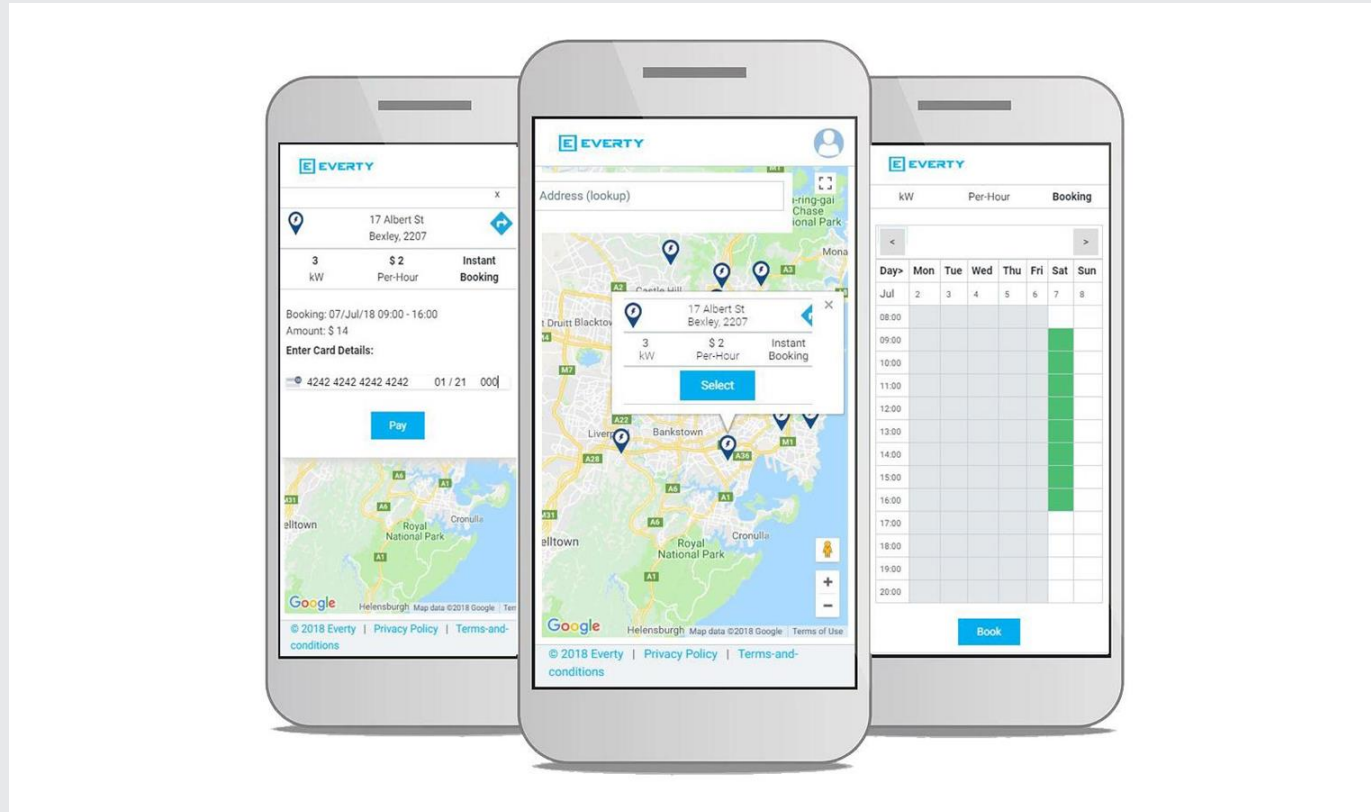
Fleet managers can view their charging stations and usage reports in the dashboard and access diagnostics files and chargers remotely allowing troubleshooting like 'charger reboot' or 'unlock cable'.

The screenshot shows the Evertly charging station operator dashboard. It features a dark sidebar on the left with navigation options: Dashboard, Charger Status, and Charger Admin. Below these is a 'REPORTS' section with links for Revenue, Energy, and Sessions. The main content area displays five key performance indicators (KPIs) in a grid:

- 2 of 12 CHARGERS IN USE** (with a plug icon)
- 3 of 12 FAULTED CHARGERS** (with a warning triangle icon)
- \$1,999.50 TOTAL REVENUE** (with a dollar sign icon)
- 1844 kWh TOTAL ENERGY** (with a lightning bolt icon)
- 243 TOTAL CHARGING SESSIONS** (with a plug and battery icon)

Each KPI card includes a 'View More' link with a right-pointing arrow. The top of the dashboard shows the Evertly logo, a hamburger menu, and a user profile icon. The breadcrumb 'Home / Dashboard' and utility icons for messages, dashboard refresh, and settings are also visible.

Easy access for fleet EV drivers



Find

EV drivers can easily locate a charger near them and view relevant info like speed, plug-type and price.



Book

The screen shows when chargers are available or already reserved.



Pay

Secure online payment gateway through third party platform Stripe which stores the credit card details of registered drivers for future payments.

Next steps

- Quick survey on this webinar
- Circulation of new electric vehicle stats – as available
- Survey on project outcomes – December and January
- Publication of project report – February 2019
- Recommendations on collective procurement – February 2019

We're also available to provide advice or discuss EV opportunities for your local government fleet.

Discussion

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