AusNet

AusNet
Presentation for GMCA

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Acknowledgement of country

We acknowledge Aboriginal people as the Traditional Owners and Custodians of the land we live and work on, and we pay our respects to Elders past, present and emerging.

Agenda

1. Who is AusNet?
2. What's happening in the energy sector?
3. What is AusNet's role in the energy transition?
4. What is AusNet doing in Goulburn Murray region?
5. Goulburn Murray region's current usage and energy future

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01 Who is Ausnet?

Our purpose

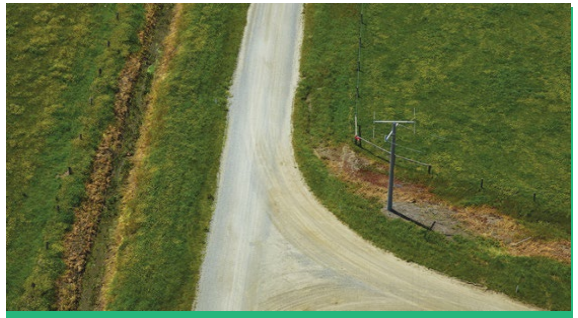
Connect communities with energy and accelerate a sustainable future

AusNet has a widespread presence in Victoria

Ausnet is responsible for a range of services in the energy sector

Electricity transmission

Our transmission network transports power from where it's generated to Victoria's 5 distribution networks. We also help connect power to New South Wales, South Australia and Tasmania



Electricity distribution

Our electricity distribution network feeds electricity to customers across eastern and north-eastern Victoria, and in Melbourne's north and east

Gas distribution

Our gas distribution network supplies natural gas to customers in western Melbourne, central and western Victoria

Development & Future Networks (including Mondo)

DFN provides contracted infrastructure asset and energy services, as well as a range of asset and utility services, to support the management of all networks. The contracted infrastructure business builds, owns and operates a portfolio of assets that fall outside the regulated asset base

Ausnet operates across the energy supply chain

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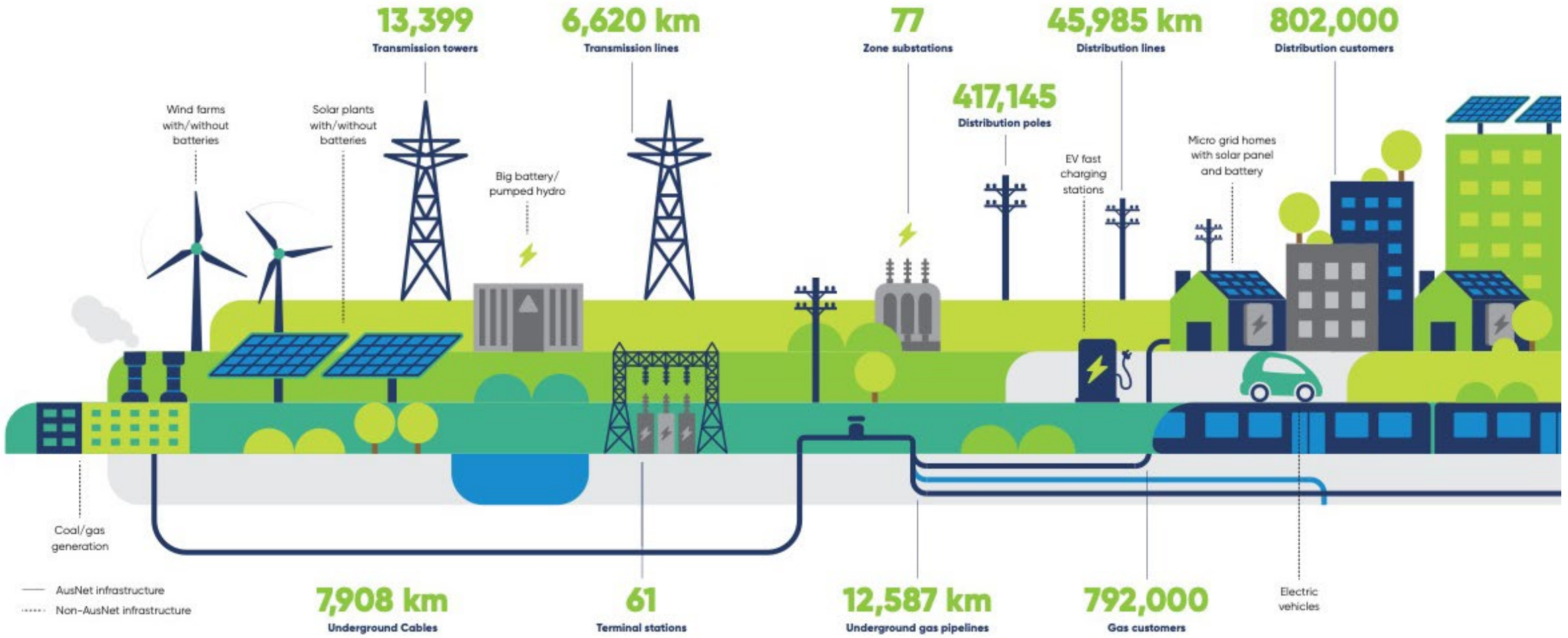

02 What's happening in the energy sector?

A triple transition is underway in the energy sector

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Connect and accommodate large-scale renewables to replace centralised coal generation and meet the ambitious government targets to reduce emissions

Unlock consumer energy resources (CER) to enable customers and communities to own their own energy assets, e.g. solar panels on rooftops, EVs

Fulfill a doubling of electricity demand by 2050, driven by population growth and electrification of gas and transport loads (electric trucks, trains etc.)

A new energy world is developing through the energy transition

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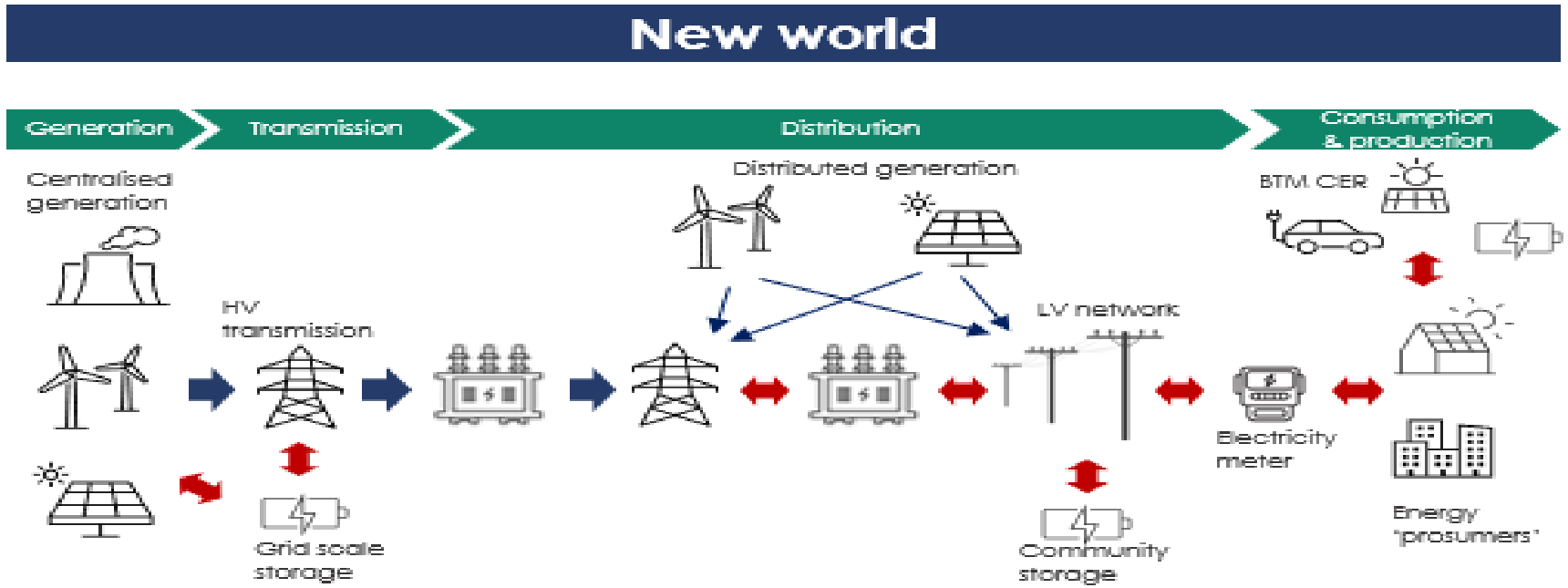
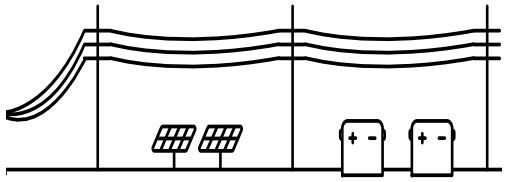


- Large number of generators connected to the distribution network, including behind-the-meter
- Two-way power flows
- Increasingly complex to manage supply and demand
- High number of residential and commercial DER connections
- Proactive and active customer engagement
- Need to build relationships and facilitate competition and innovation
- Much higher electricity demand and shifted load profiles

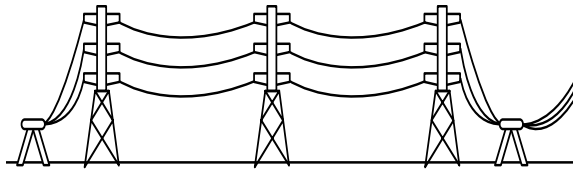
03 What is AusNet's role in the energy transition?

Ausnet has a big role in the energy transition across all networks…



Electricity Distribution

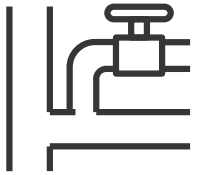
AusNet's network is undergoing a period of unprecedented transformation, following a **rapid deployment of renewable generation** across our network, including increasing uptake of new CER technologies such as rooftop solar, energy storage and EVs. Local generation and storage of energy has led to **evolving maximum and minimum demand patterns across our customers**, and this evolution is expected to continue as EV uptake accelerates



Electricity Transmission

In order to support growth of renewables in the supply chain, several large- scale transmission infrastructure projects are underway (at various stages).

Alistair Parker (VicGrid) will cover this.



Gas Distribution

On 28 July 2023, the Victorian Government announced a **ban on new gas connections** in homes from 1 January 2024 on new homes and residential subdivisions. Also, commencing immediately, **all new public buildings** that haven't reached design stage will be **all-electric.** This includes new schools, hospitals, police stations and other government-owned buildings

Victoria's emergency backstop mechanism for solar…

Victoria is introducing an emergency backstop mechanism for solar. This will only be used in rare emergency situations when our rooftop solar exports are high, but our energy use is low, and the electricity grid becomes unstable.

With an emergency backstop, network service providers must be able to remotely turn down or switch off rooftop solar systems during an energy supply emergency to avoid blackouts.

The emergency backstop mechanism will only be used when required by the Australian Electricity Market Operator (AEMO) and only in rare emergencies when solar exports are too high to be safely managed. It will help to avoid blackouts and make sure that Victorians can continue to use electricity.

AusNet is working with the Victorian Government on this policy reform.

The gas ban has left many open questions and doubts over short and long-term implications…

Due to the gas ban, impact on the current period **may not be as significant as first thought** in the first few years **but growth will eventually cease** over the current period and big unknowns remain-

- **Existing connection pipeline does not appear to be directly impacted**
  - Current reticulation underway and under offer
  - Potential estate developments with planning approval for gas – (this could actually grow very rapidly if developers react by rushing through as many planning approvals as possible before 1 January)
  - Lots not yet connected in existing reticulated estates – tens of thousands of lots with supply available

- **Existing policy unknowns/risk will take time to assess**
  - Customers or builders may choose not to connect even though gas is available
  - Developers may start cancelling existing estate reticulation (we see no sign of this)
  - Existing customer behaviour may change dramatically – large increase in appliance switching and abolishment (we see no sign of this)

- **Future policy unknowns/risk are significant**
  - Gas Substitution Roadmap Update due end of 2023 expected to contain material new policy
  - Appliance bans or increased appliance switching incentives will change sunk customer behaviour materially

04 What is AusNet doing in Goulburn Murray region?

What is AusNet doing in Goulburn Murray?

We are investigating five network augmentation projects (66kV+) to allow more renewables to connect in this area;

1. WOTS augmentation
2. GNTS augmentation
3. WO-BWA augmentation.
4. Northern Region Fibre Augmentation - GNTS & MBTS
5. Seymour South, KMS-SMR-CTWF-YEA-RUB 66kV loop

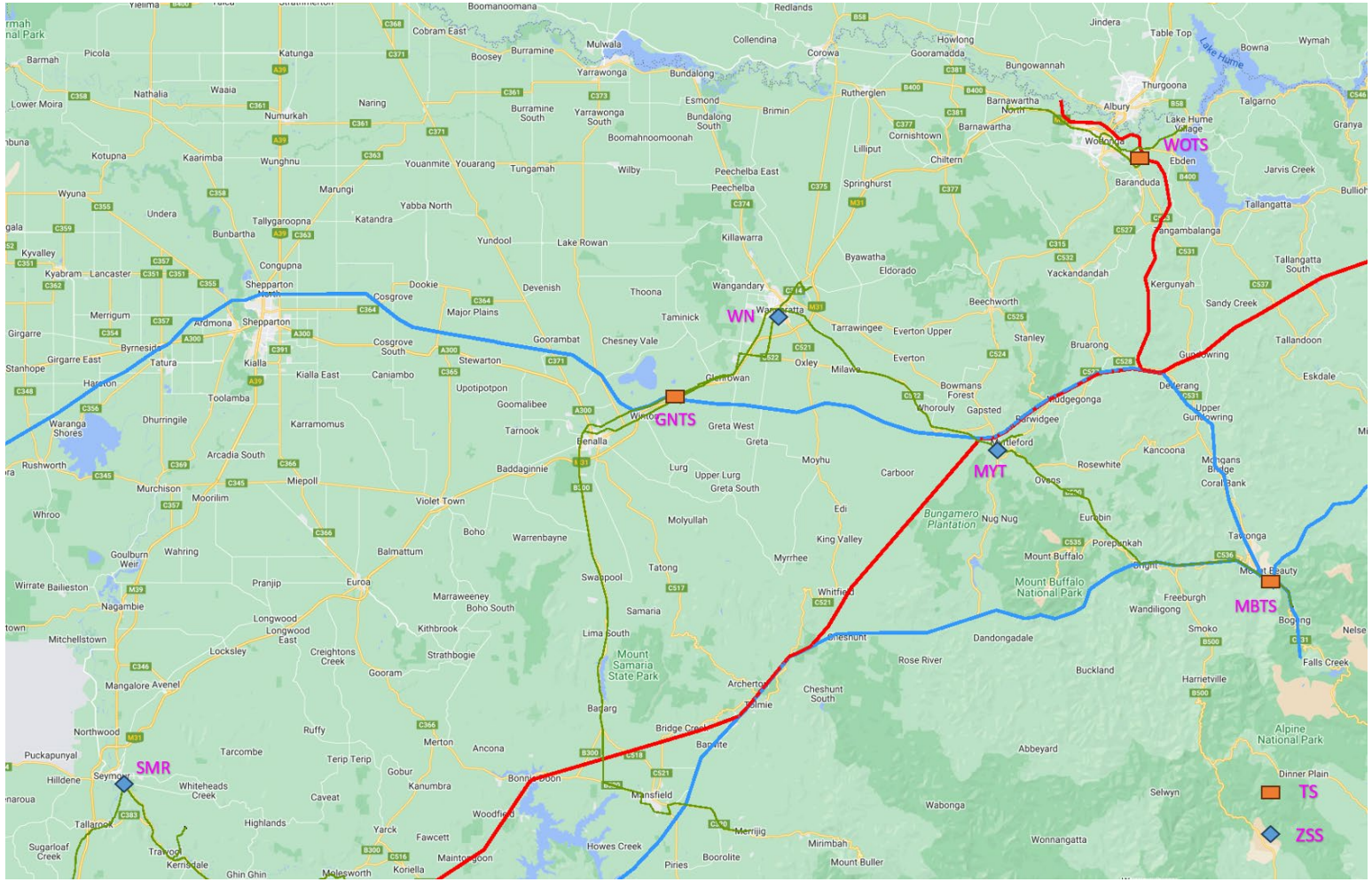
We are investigating five future capacity enablement projects to allow more load to connect in this area;

1. SMR14 22kV feeder capacity augmentation
2. SMR24 22kV feeder capacity augmentation
3. ZSS (66/22kV) Wangaratta Zone Substation (WN) capacity augmentation
4. ZSS (66/22kV) Seymour Zone Substation (SMR) capacity augmentation
5. ZSS (66/22kV) Myrtleford Zone Substation (MYT) capacity augmentation

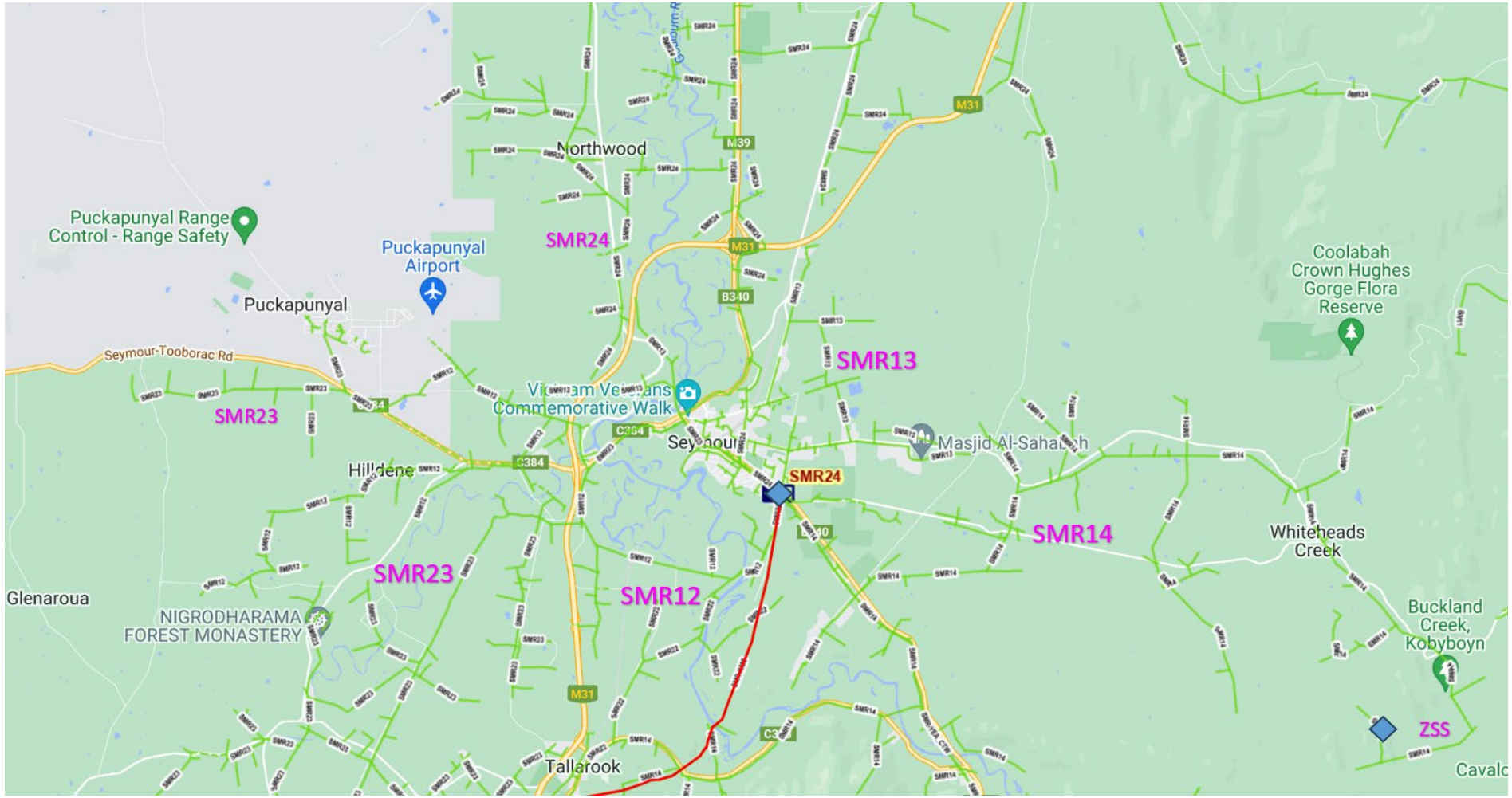
We are investigating one asset replacement project:

1. Benalla Zone Substation

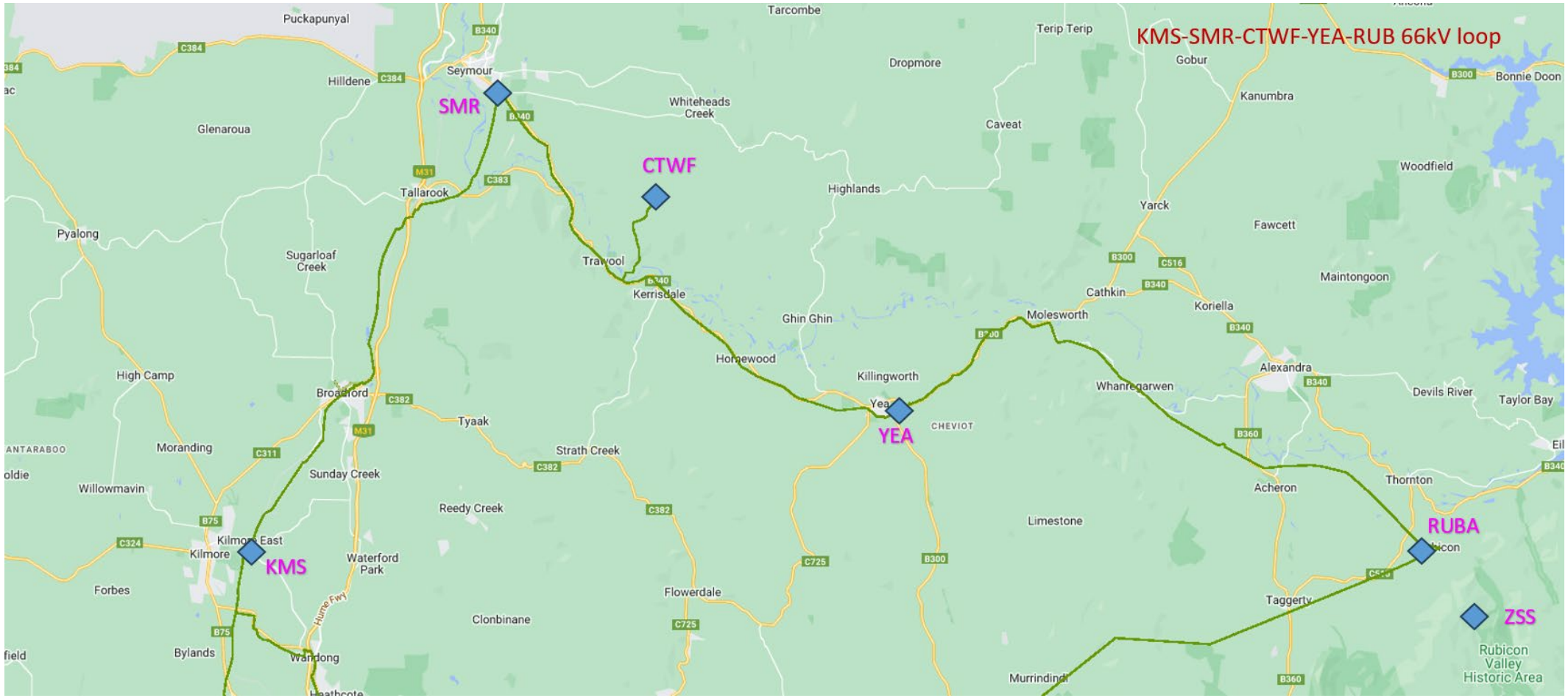
WOTS, GNTS, MBTS augmentations



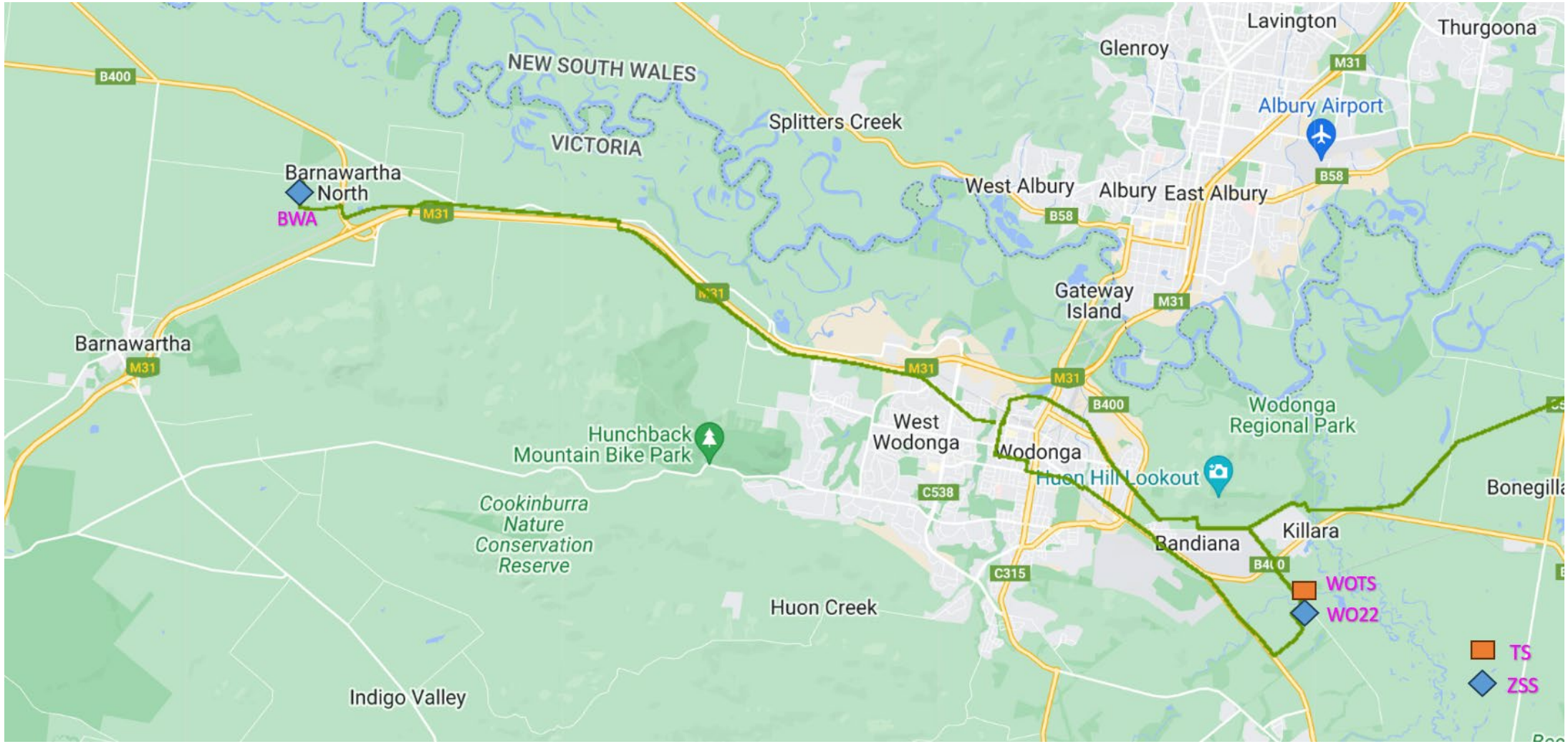
SMR feeder capacity augmentation



Seymour South, KMS-SMR-CTWF-YEA-RUB 66kV loop



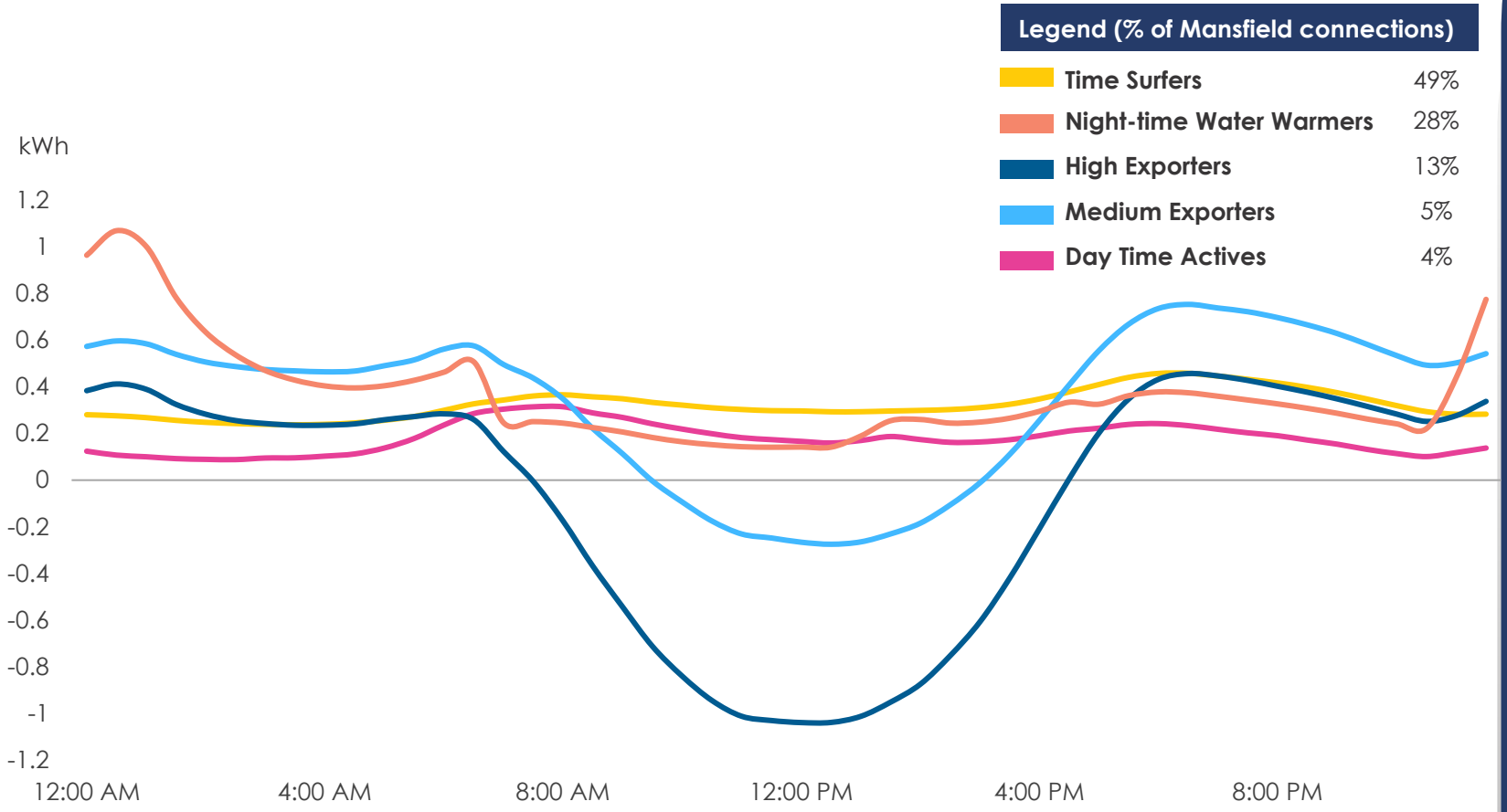
WO-BWA augmentation



05 Goulburn Murray Region's current usage and energy future

Consumption patterns | Mansfield residents

Mansfield residential connections can be classified into one of five distinctive patterns



- There are 7,592 residential connections in Mansfield
- **Time Surfers is** the most common consumption pattern accounting for nearly half of all residential connections.
- **Night Time Water Warmers'** pattern is mainly driven by controlled load hot water systems, which are triggered to run late at night when the demand on our network is low
- Many *(but not all)* connections with solar panels exhibit exporting pattern (**High Exporters** & **Medium Exporters**)
- 24% have solar panels, average 5.6kW in capacity
- 141 connections with Life Support equipment

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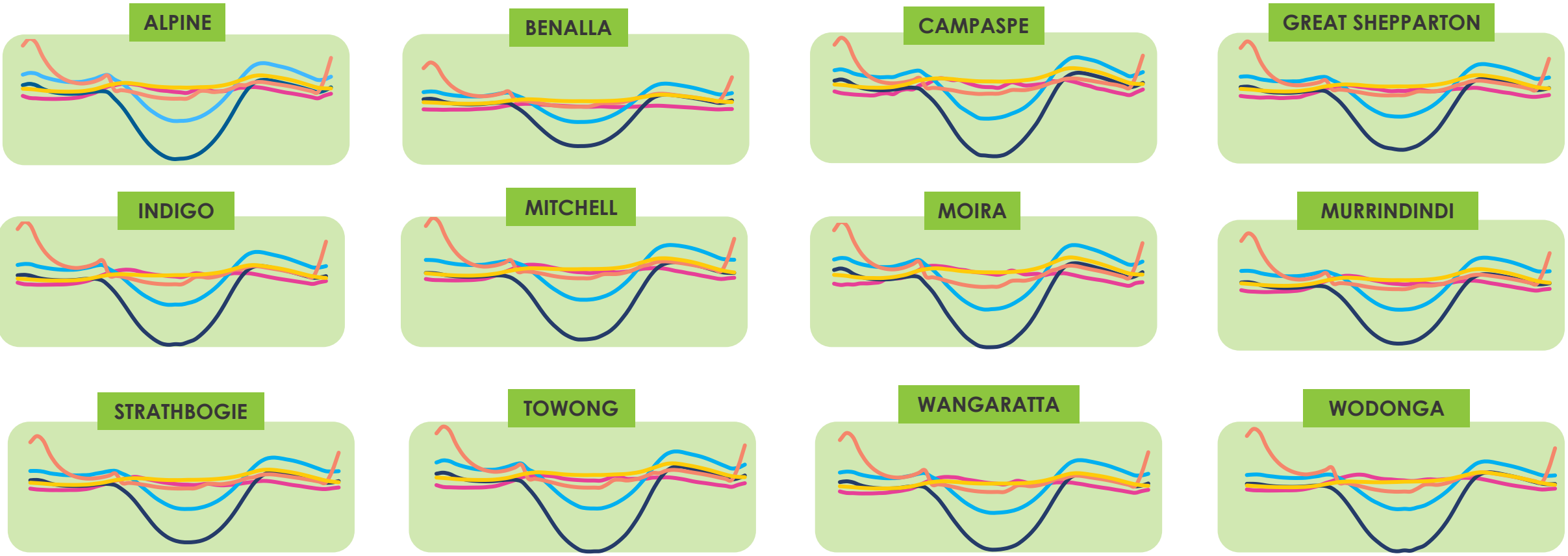
Consumption patterns | The rest

Consumption patterns across the other 12 LGAs resemble the overall patterns found in Mansfield



Daily consumption patterns of Goulburn Murray residents are similar to the usage across the state

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- 161,884 residential connections across 13 LGAs
- 28% have solar panels, with the average capacity of 5.52 KW

Time Surfers is the biggest group of residential connections across all 13 LGAs. This group shows relatively flat consumption curve with small morning and evening peak

Between 18% and 33% of residential connections across 13 LGAs demonstrate solar export patterns, being either **High** or **Medium Exporters**

From our own customer research, **Medium Exporters** tend to be families with children, who are more convenience-focused and would use electricity when it suits their needs.

High Exporters tend to be older households without children, and are more conscious of saving energy. This explains their strong solar export in the middle of the day

Winter time accentuates total usage and peak demand compared to summer months

For GMCA to be green and self-reliant, there is an opportunity to do more…

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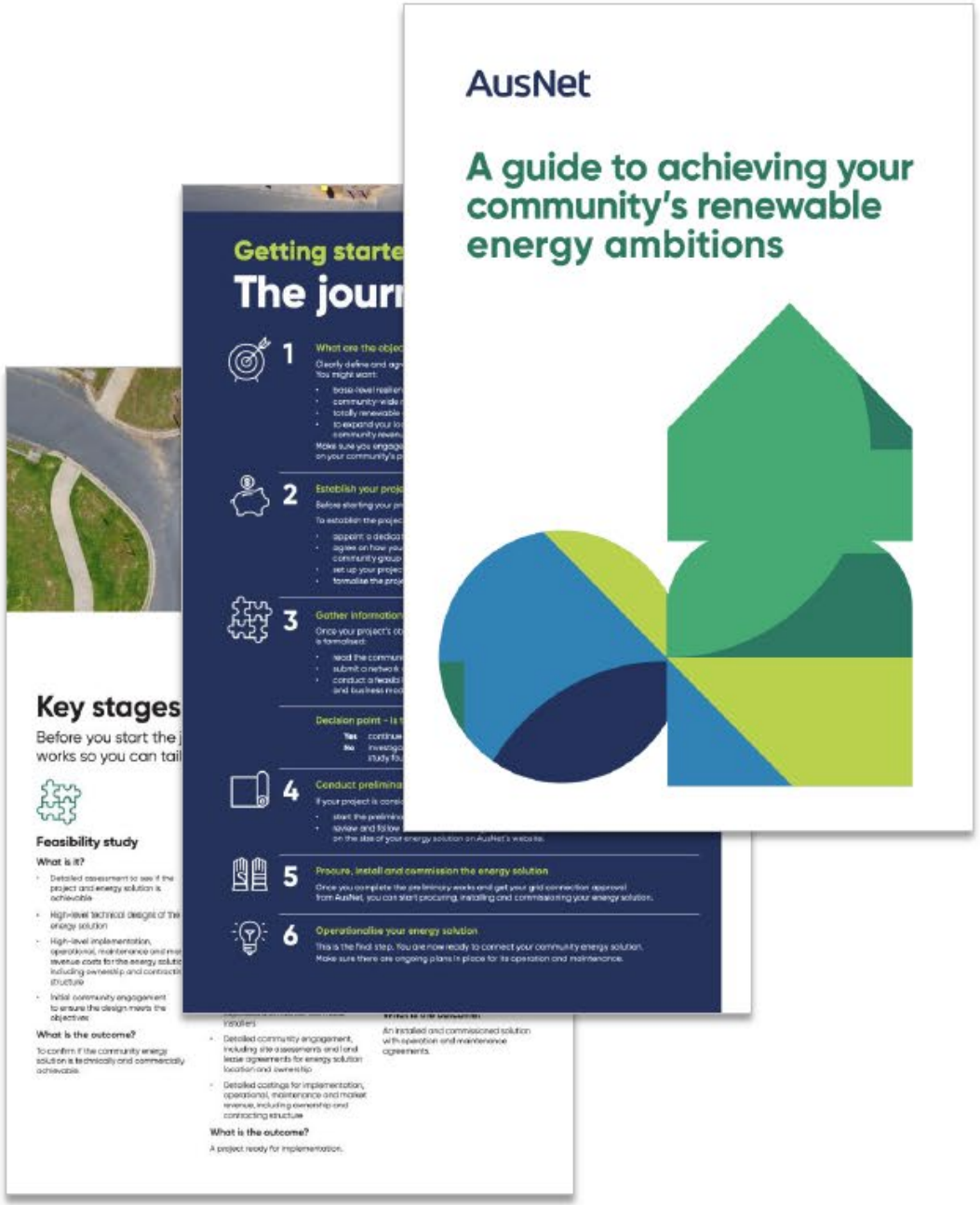
The residents and community of GMCA can invest in Community Energy and partner with Ausnet for their secure energy future

What is Community Energy?

Community energy is about giving **community groups** the ability to **initiate, develop, operate and / or benefit from** shared or individual renewable energy resources. A growing ambition in clean and local power is driving interest in affordable, flexible and efficient renewable energy projects across Australia and within AusNet's network.

From AusNet's perspective, community energy projects are typically projects that involve multiple customers in a designated area which share a common goal or energy aspiration, such as reaching Net Zero, improving energy resilience, sharing energy resources etc.



AusNet's services and support of community energy

AusNet provides support to communities for their energy solutions via:

- Technical education and business case guidance and material on our website
- Network data provision and support in understanding and interpretation. Recently launched the AusNet Grid View Portal
- Engineering advice, support for feasibility studies, lessons learnt from other projects and basic connection requirements for community energy solutions
- 'On the ground' support to engage with the local community and ensure successfully project delivery

AusNet also invests in and delivers community energy projects where they provide network benefits, e.g. Standalone power systems (SAPS), batteries and microgrids.

We cover these in more details on the following slides.

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Ausnet has comprehensive community engagement plan that is being applied across various councils across Vic

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Community needs and interactions*

The communities needs and interactions can vary depending on their community energy initiatives and plan. Majority of the needs and interactions with our communities are for:

- General community energy information and enquiries (including data access, letters of support and general questions)
- Community engagement as part of AusNet projects (including feasibility studies, delivery projects)
  - Stand alone power systems (SAPS)
  - Community Microgrid and Sustainable Energy Program (CMSEP)
  - Philip Island Community Energy Storage (PICES)
  - Energy Resilience Solutions (ERS)

*Note: this is not an exhaustive list of all the communities we have interacted with, but a representation of some of the groups we have had several interaction with

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Thank You

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