AGIG Victorian Distribution Network Overview

Summary Report

Revision 1 | Issued for Use

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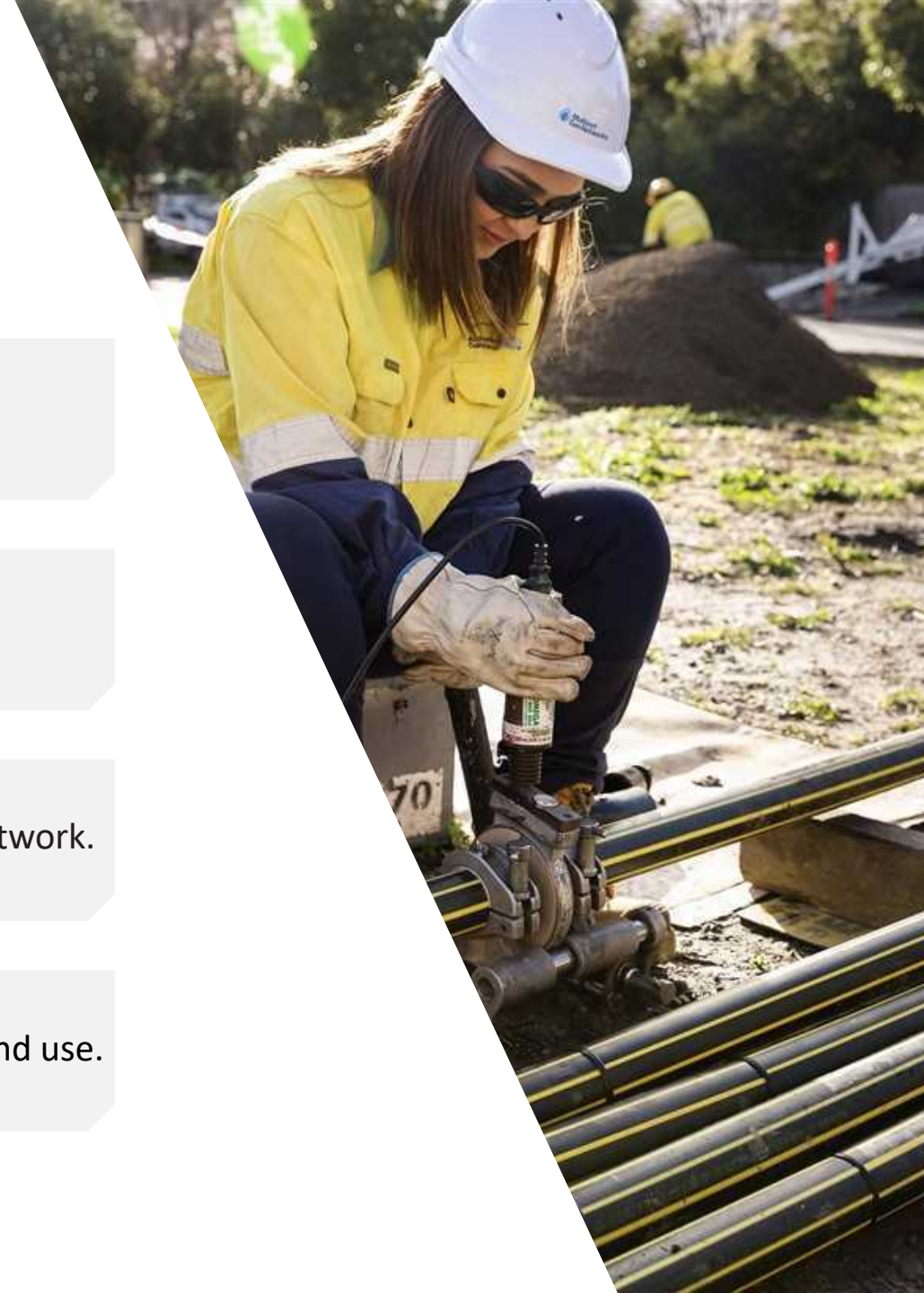
Scope

Identify the different gas users across Australian Gas Infrastructure Group's (AGIG) Victorian gas distribution networks, Australian Gas Network (AGN) and MultiNet Gas Networks (MGN).

Categorise different residential, commercial and industrial users.

Chart the geographic footprint of different user types across the network.

Identify noteworthy patterns and trends associated with location and use.



Background

- The history of Victorian gas distribution networks dates back over 150 years, to the Gas and Fuel Corporation of Victoria. The network was built as an enabler of economic activity and to attract new industries.
- These underground networks have grown in size and number of connections over time, as customers choose to access the stability and reliability in energy delivery it provides.
- In 2024, AGIG's gas network distributed ~100 petajoules (PJ) of natural gas to Victorians across over 1,460,000 connections, equivalent to approximately two-thirds (64%) of Victoria's total electricity consumption in the same period[1].

AGIG's AGN Victoria and MGN Network

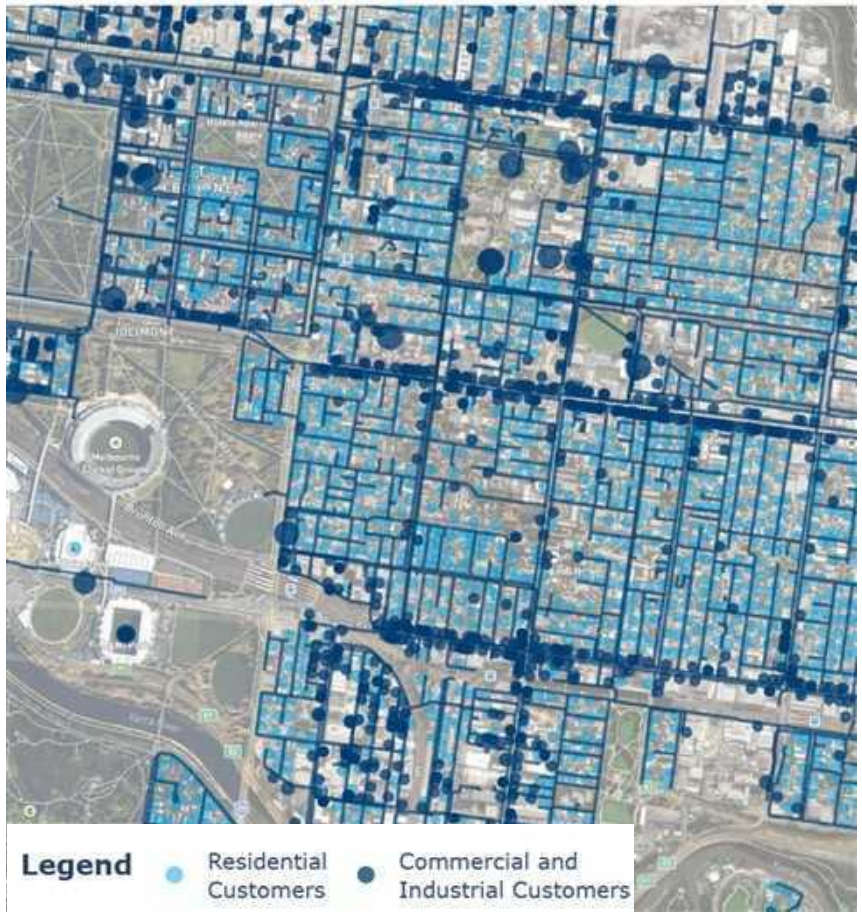
1.46m
connections

99,122 TJ
of gas delivered

21,951 km
of distribution infrastructure

501 km
of transmission infrastructure

East Melbourne
(Yarra Park & Richmond)



Customer Diversity

- Victoria's gas distribution network supplies more gas than any other state, reflecting its relatively high population and cool climate.
- AGIG's customers base consists of residential, and commercial and industrial (C&I) connections. Residential connections represent 98% of connections and 60% of gas use.
- Usage varies significantly between these customer groups. There is further significant diversity in usage within the same connection type (i.e. when comparing one commercial user to another).

Residential customers vary significantly by dwelling type, gas usage and financial wellbeing

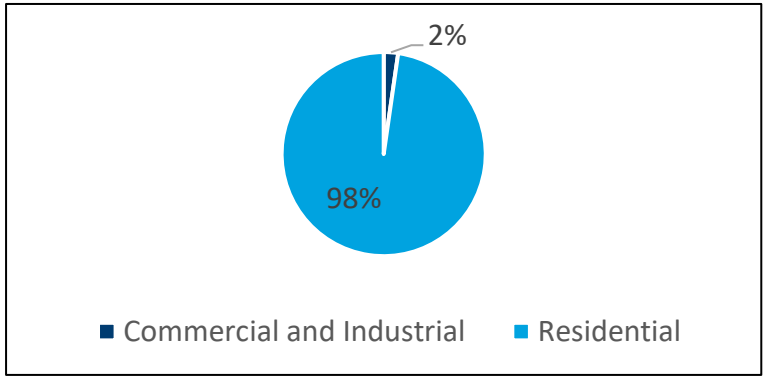
See Appendix 2

28 broad user types account for over 90% of C&I gas use *highlighting the diversity of gas use across Victoria*

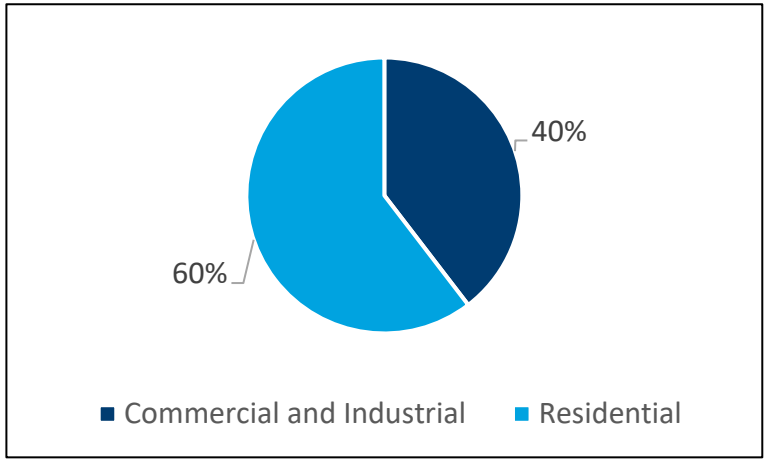
See Appendix 3

AGIG Victorian Customer Overview

Customer Type By Connection



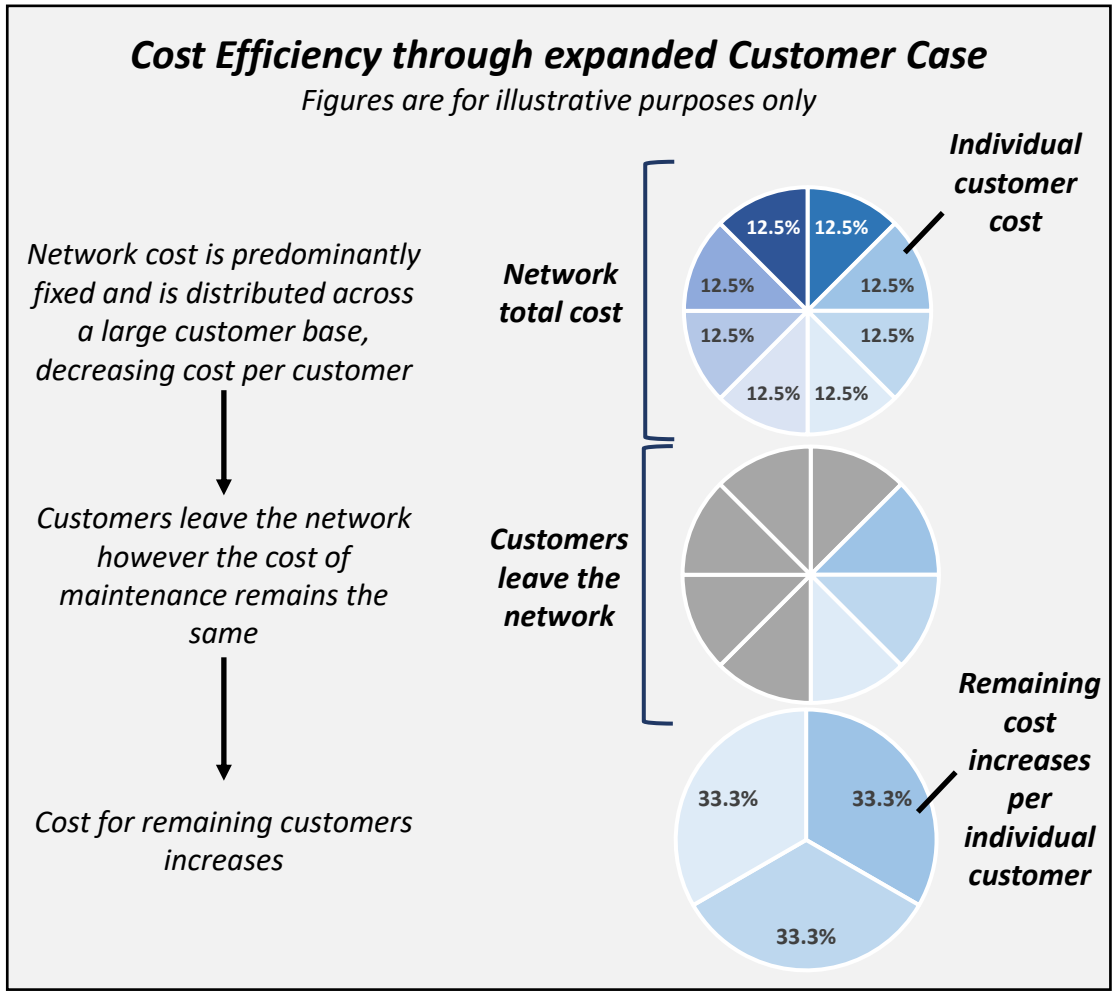
Customer Type By Total Gas Consumption



Maximising Cost Efficiency in Victoria's Gas Network

- The Victorian gas network's annual growth has distributed operating costs across an increasing customer base.
- A large, well utilised network achieves greater economies of scale, all customers benefit from lower per-customer costs to access the network.
- An increase in residential gas connections spreads fixed network costs across more customers, reducing costs for all users (residential, commercial and industrial).
- Conversely, as residential users leave the network, the remaining user types (i.e. financially stressed, complex buildings, C&I) face higher costs. Remaining businesses may also need to relocate or move interstate if the network becomes uneconomic and mains are closed.

As customers leave AGIG's network, the per unit cost of gas supply increases for the remaining customers.



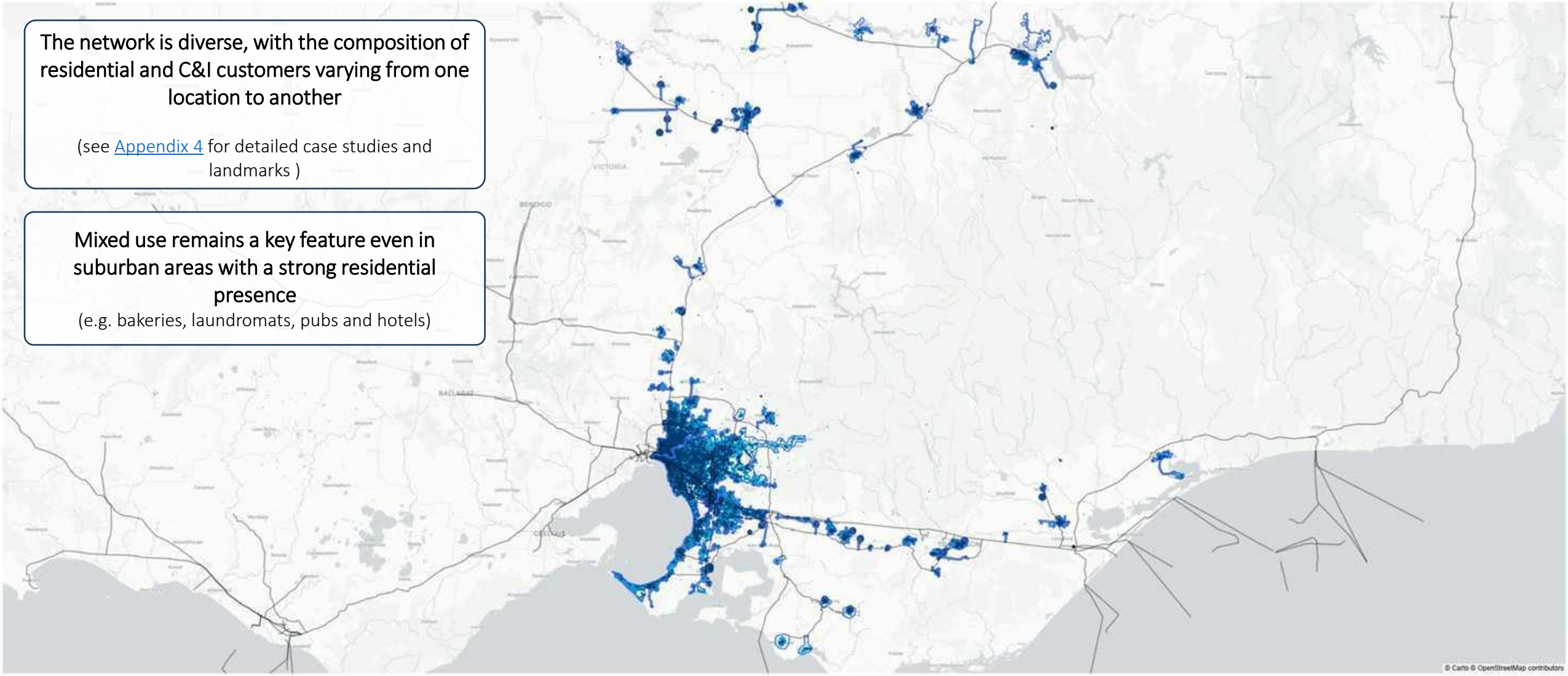
Geographic Diversity | Customer types are intertwined throughout Regional Victoria

The network is diverse, with the composition of residential and C&I customers varying from one location to another

(see Appendix 4 for detailed case studies and landmarks)

Mixed use remains a key feature even in suburban areas with a strong residential presence

(e.g. bakeries, laundromats, pubs and hotels)



Legend Residential Customers · Commercial and Industrial Customers · Network Extent · Licensed Pipelines

Average Annual Consumption 2021-2023 10,000 GJ or less – 100,000 GJ or more

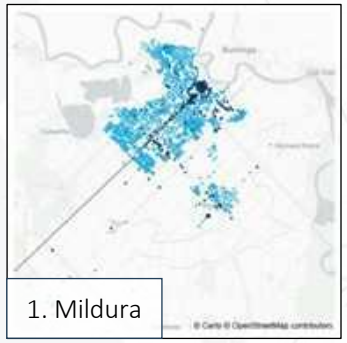
Australian Gas Infrastructure Group

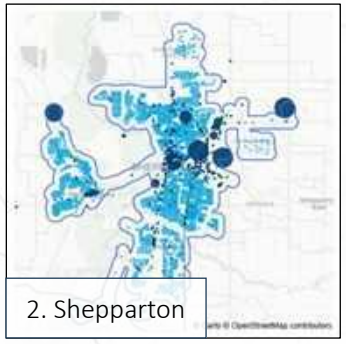
Geographic Diversity | Customer types are intertwined throughout Regional Victoria

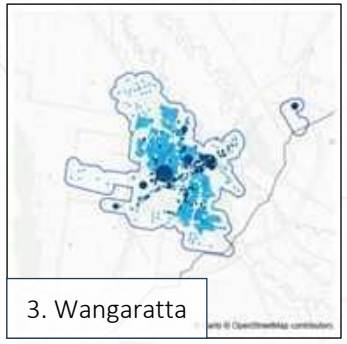
There are ~**179,000 Regional Victorian** connections which make up **17% of total annual gas consumption**

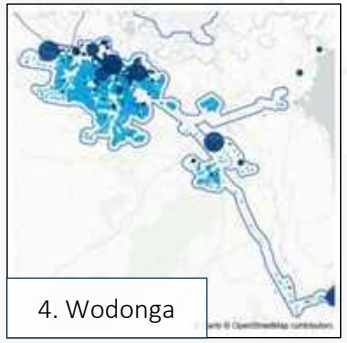
97% are residential connections representing 39% of consumption, and 3% are C&I connections reflecting 61% of consumption

C&I customers are major employers in regional locations and play a crucial role in the socio-economic structure of these communities

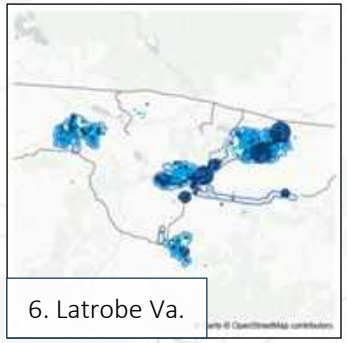

1. Mildura

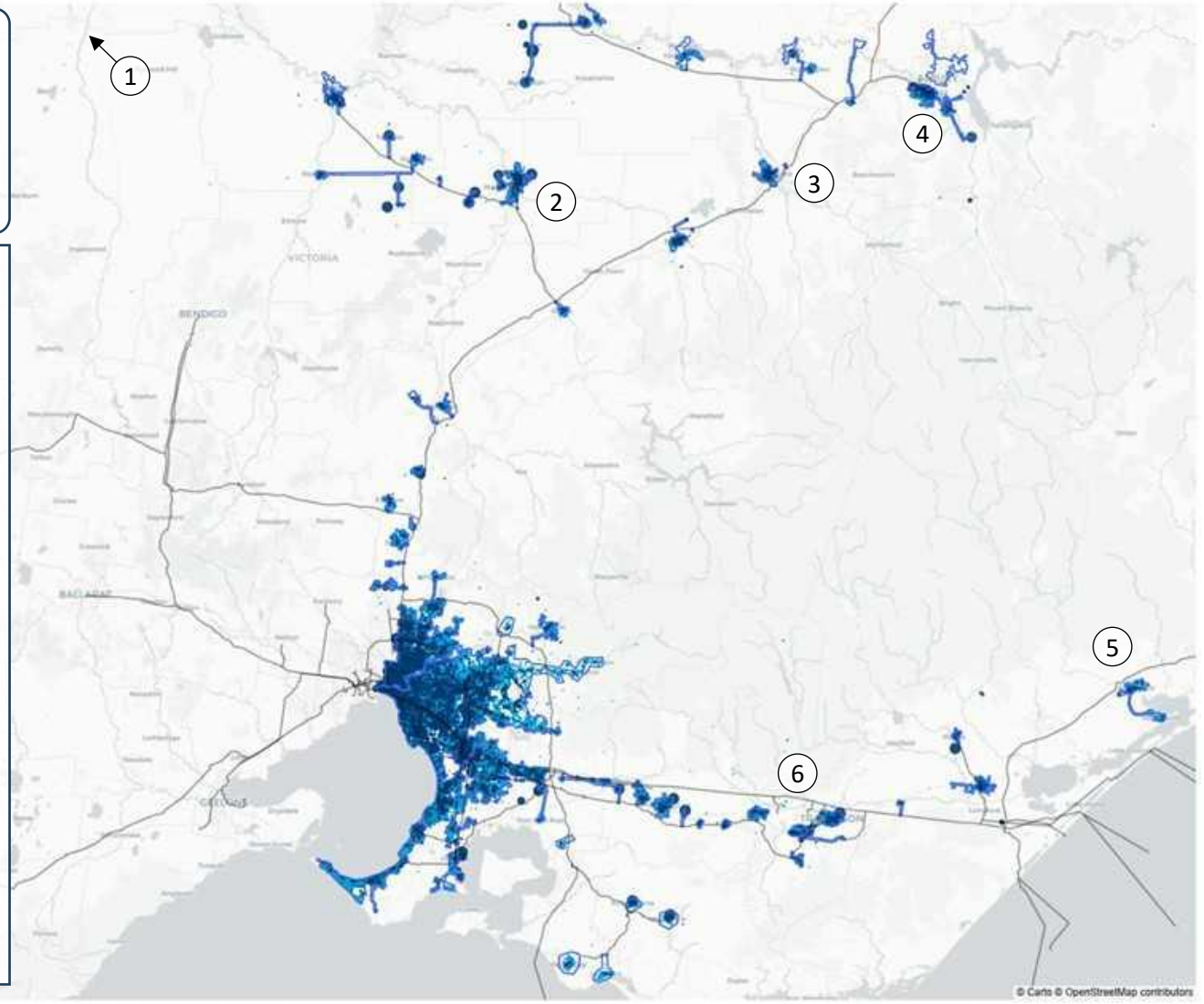

2. Shepparton


3. Wangaratta


4. Wodonga


5. Bairnsdale


6. Latrobe Va.

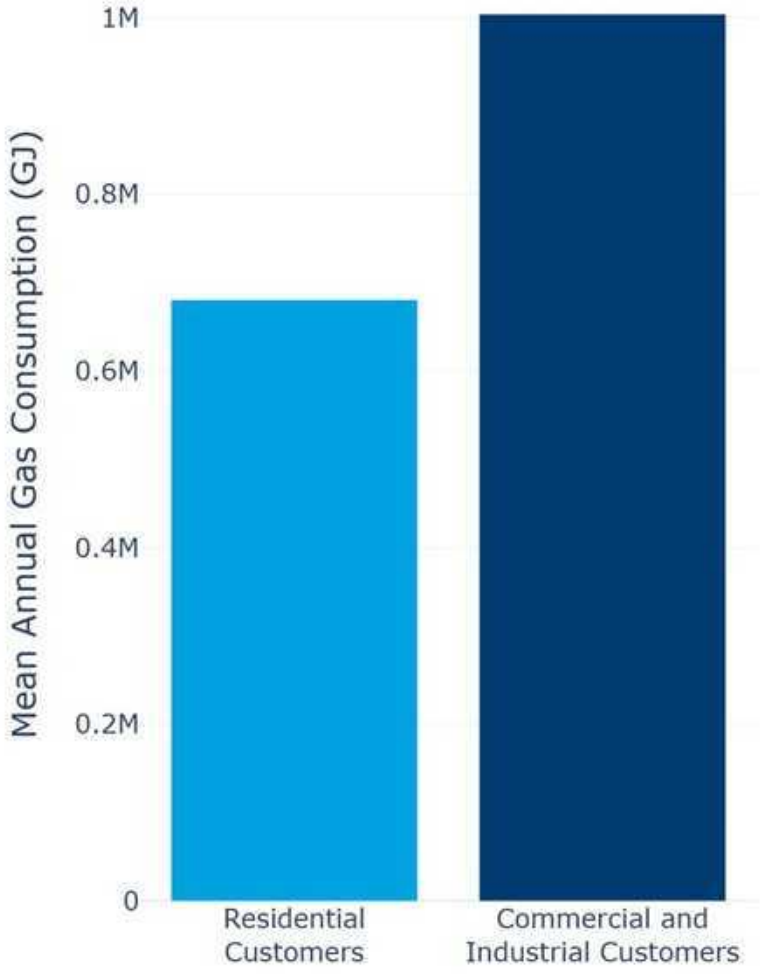


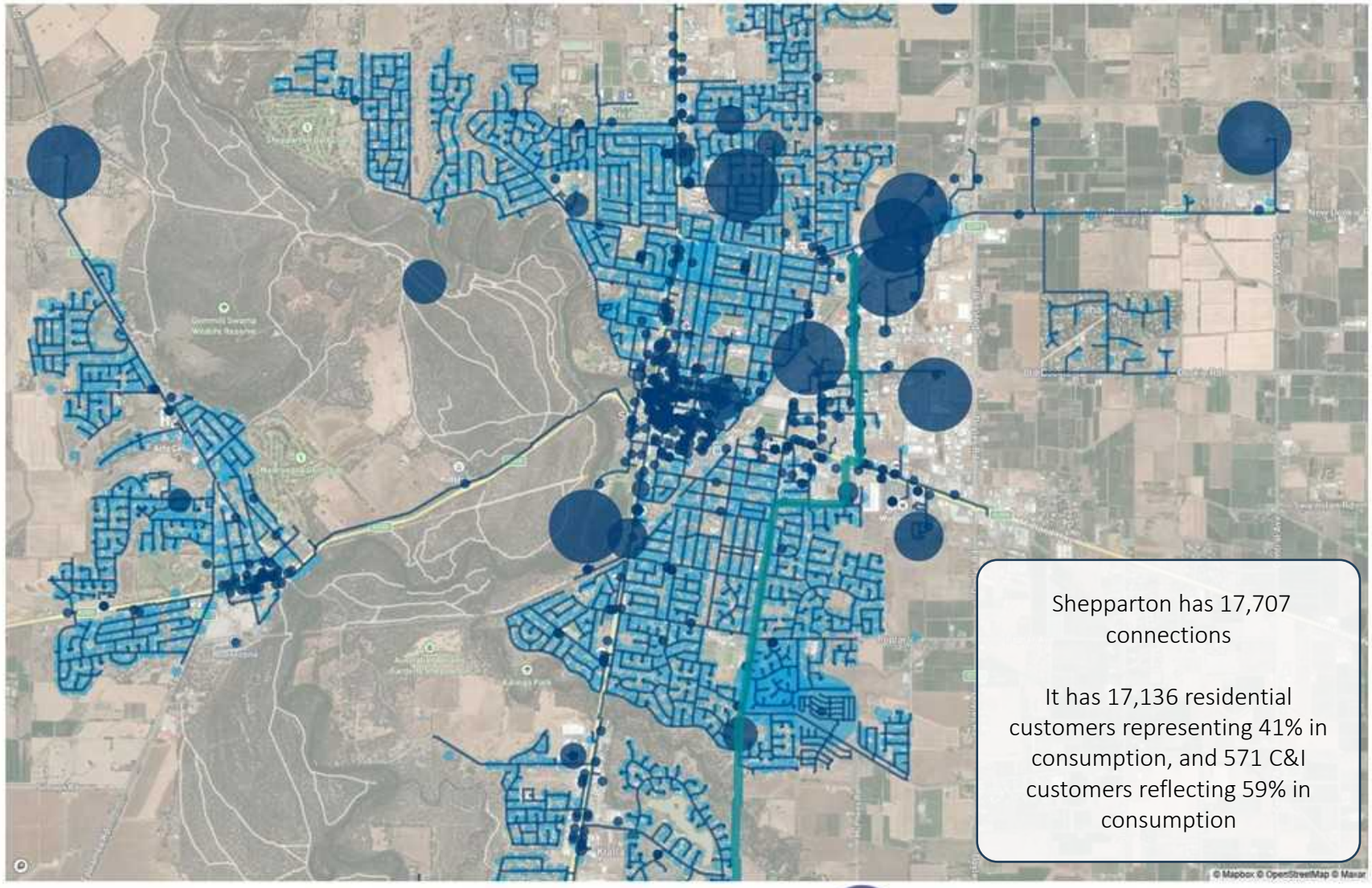
Legend Residential Customers · Commercial and Industrial Customers · Network Extent · Licensed Pipelines

Average Annual Consumption 2021-2023 10,000 GJ or less – 100,000 GJ or more

Australian Gas Infrastructure Group

Case Study: Shepparton, Victoria





Geographic Diversity | Customer types are intertwined throughout Melbourne

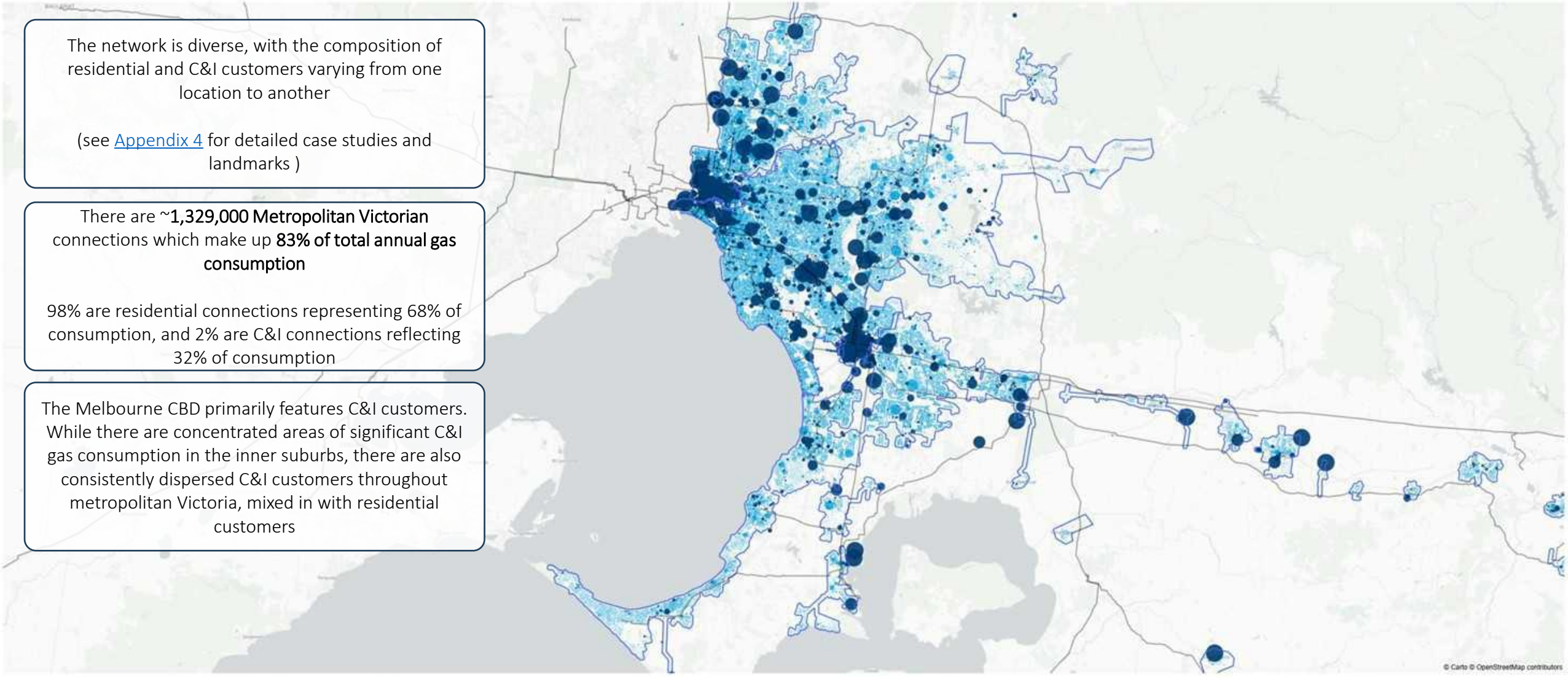
The network is diverse, with the composition of residential and C&I customers varying from one location to another

(see Appendix 4 for detailed case studies and landmarks)

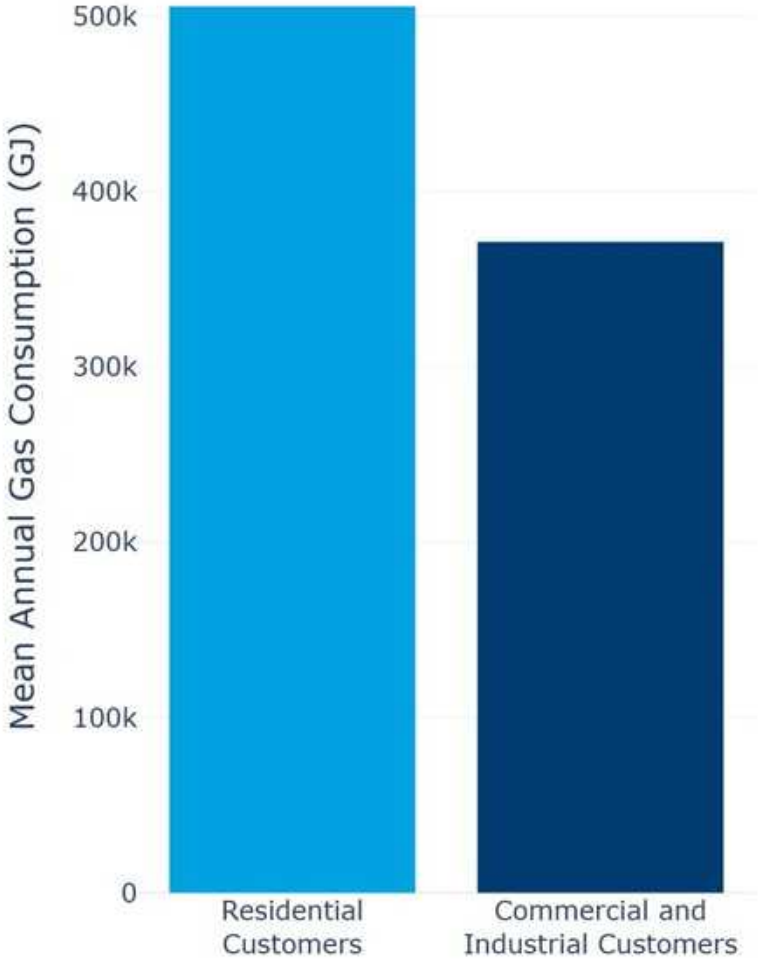
There are ~**1,329,000 Metropolitan Victorian** connections which make up **83% of total annual gas consumption**

98% are residential connections representing 68% of consumption, and 2% are C&I connections reflecting 32% of consumption

The Melbourne CBD primarily features C&I customers. While there are concentrated areas of significant C&I gas consumption in the inner suburbs, there are also consistently dispersed C&I customers throughout metropolitan Victoria, mixed in with residential customers



Case Study: Sydney Road, Melbourne CBD



Sydney Road (and surrounds pictured) has 16,415 connections

It has 15,680 residential customers representing 58% in consumption, and 735 C&I customers reflecting 42% in consumption

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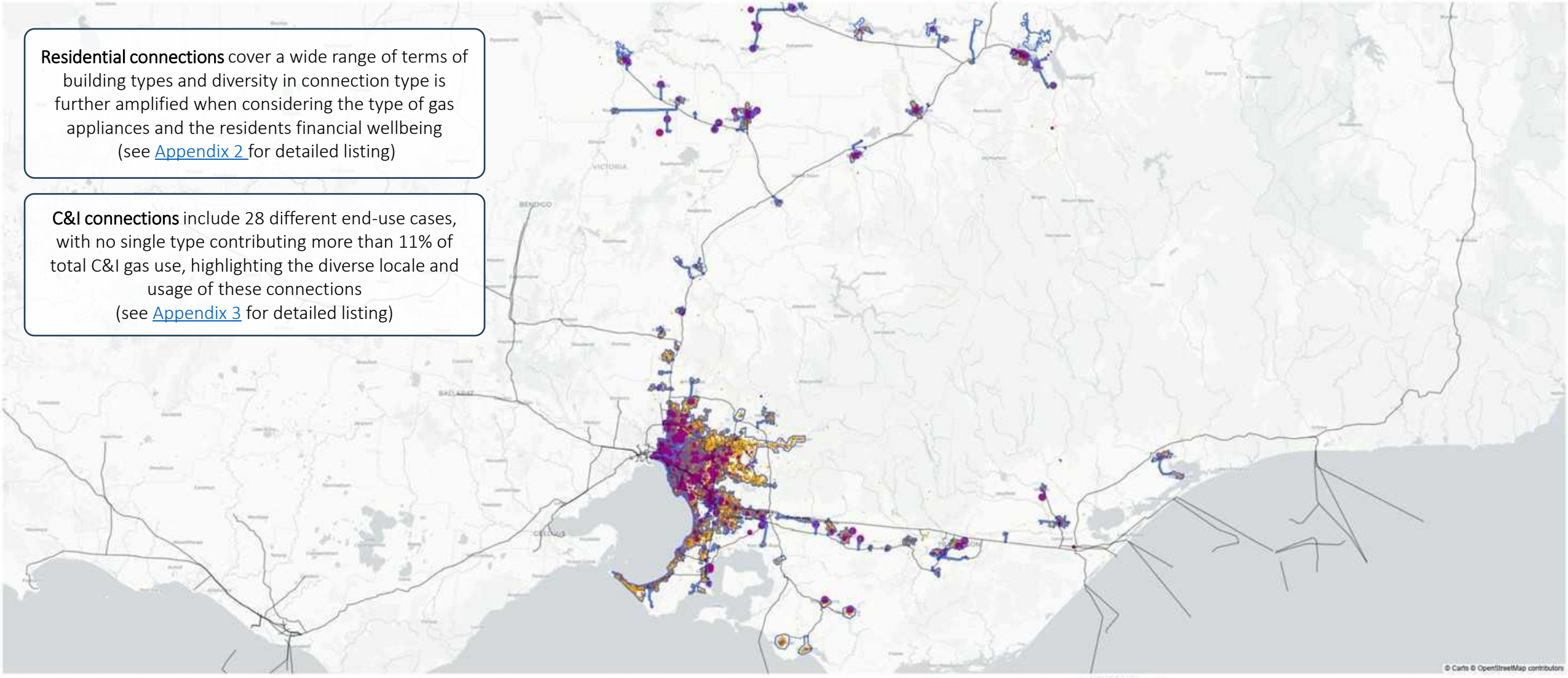
Connection Diversity| Customer types vary within categories and locales

Residential connections cover a wide range of terms of building types and diversity in connection type is further amplified when considering the type of gas appliances and the residents financial wellbeing (see Appendix 2 for detailed listing)

C&I connections include 28 different end-use cases, with no single type contributing more than 11% of total C&I gas use, highlighting the diverse locale and usage of these connections (see Appendix 3 for detailed listing)



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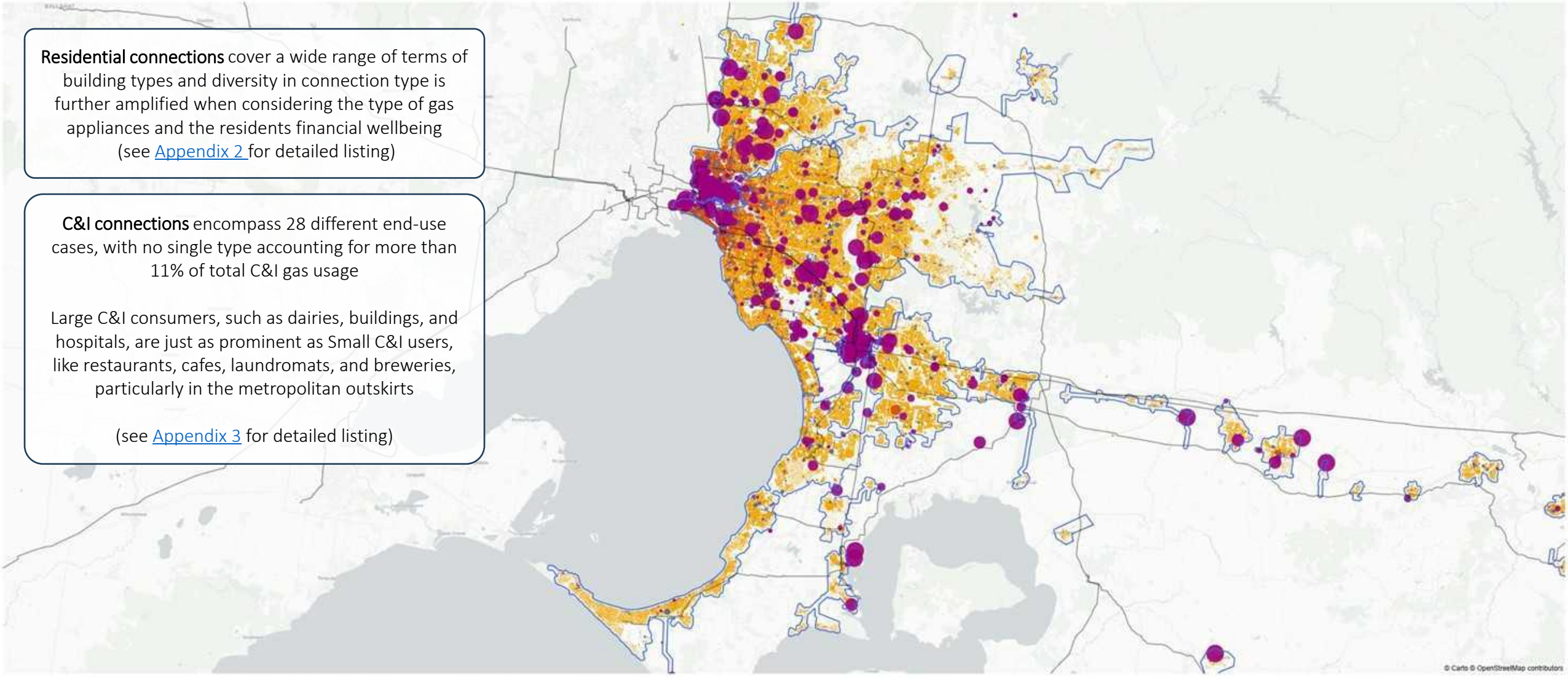
Connection Diversity| Customer types vary within categories and locales

Residential connections cover a wide range of terms of building types and diversity in connection type is further amplified when considering the type of gas appliances and the residents financial wellbeing (see Appendix 2 for detailed listing)

C&I connections encompass 28 different end-use cases, with no single type accounting for more than 11% of total C&I gas usage

Large C&I consumers, such as dairies, buildings, and hospitals, are just as prominent as Small C&I users, like restaurants, cafes, laundromats, and breweries, particularly in the metropolitan outskirts

(see Appendix 3 for detailed listing)



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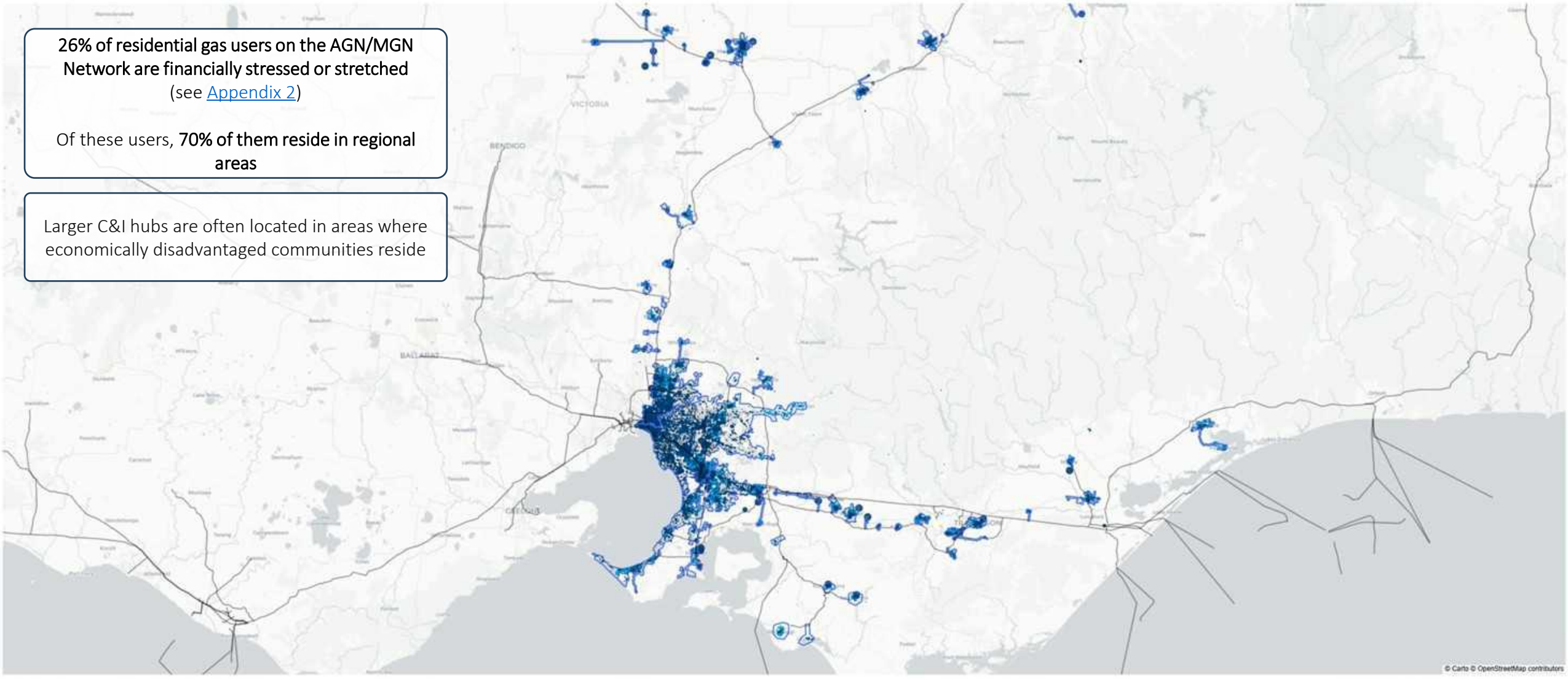
Residential Financial Landscape| The financial wellbeing of residential connections varies across Victoria

26% of residential gas users on the AGN/MGN Network are financially stressed or stretched (see Appendix 2)

Of these users, **70% of them reside in regional areas**

Larger C&I hubs are often located in areas where economically disadvantaged communities reside



Legend Other Residential · Financially Stressed or Stretched Residential · Commercial and Industrial Customers · Network Extent · Licensed Pipelines

Average Annual Consumption 2021-2023 10,000 GJ or less -100,000 GJ or more

Australian Gas Infrastructure Group

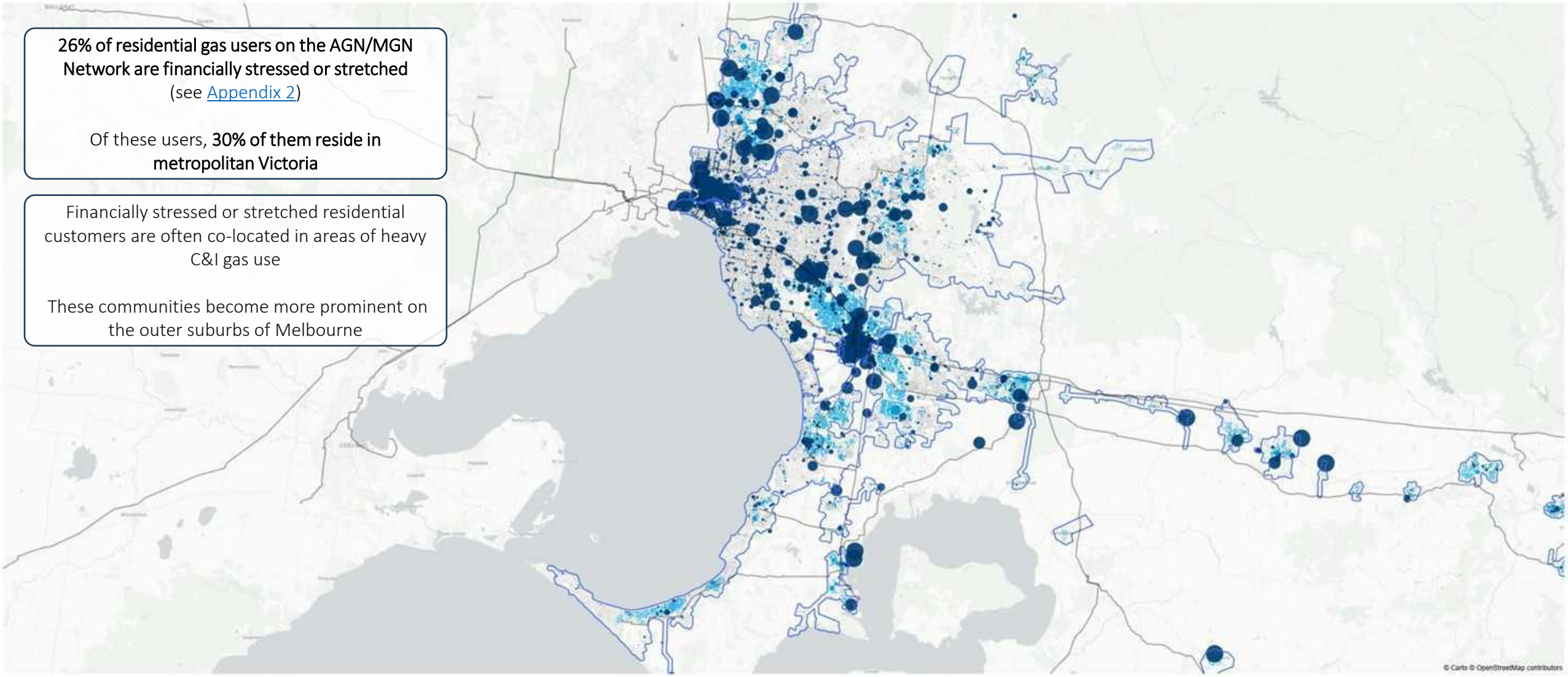
Residential Financial Landscape| The financial wellbeing of residential connections varies across Melbourne

26% of residential gas users on the AGN/MGN Network are financially stressed or stretched (see Appendix 2)

Of these users, **30% of them reside in metropolitan Victoria**

Financially stressed or stretched residential customers are often co-located in areas of heavy C&I gas use

These communities become more prominent on the outer suburbs of Melbourne



Legend Other Residential · Financially Stressed or Stretched Residential · Commercial and Industrial Customers · Network Extent · Licensed Pipelines

Average Annual Consumption 2021-2023 •10,000 GJ or less · 100,000 GJ or more

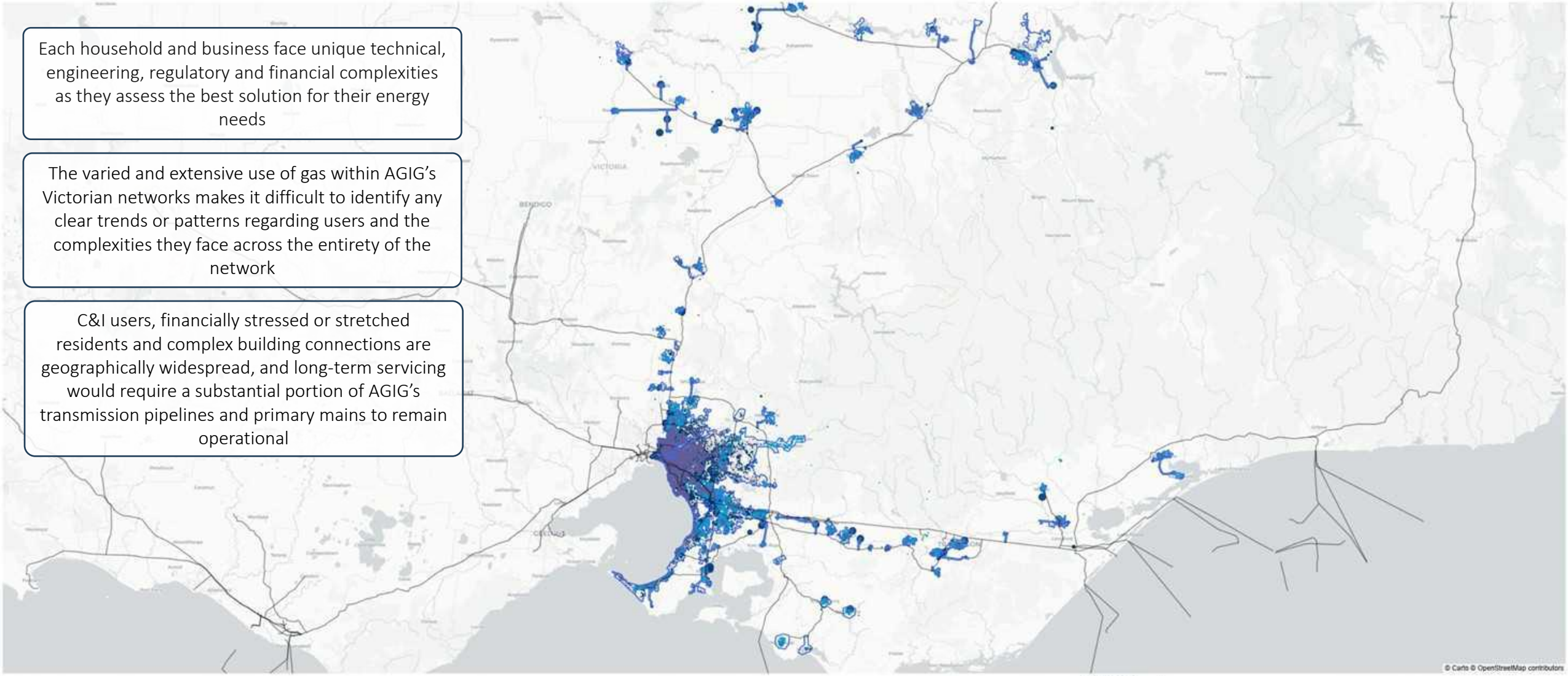
Australian Gas Infrastructure Group

Complex Buildings and Financial Footprint| There are no consistent patterns in the variety of gas use and gas users across Victoria

Each household and business face unique technical, engineering, regulatory and financial complexities as they assess the best solution for their energy needs

The varied and extensive use of gas within AGIG's Victorian networks makes it difficult to identify any clear trends or patterns regarding users and the complexities they face across the entirety of the network

C&I users, financially stressed or stretched residents and complex building connections are geographically widespread, and long-term servicing would require a substantial portion of AGIG's transmission pipelines and primary mains to remain operational

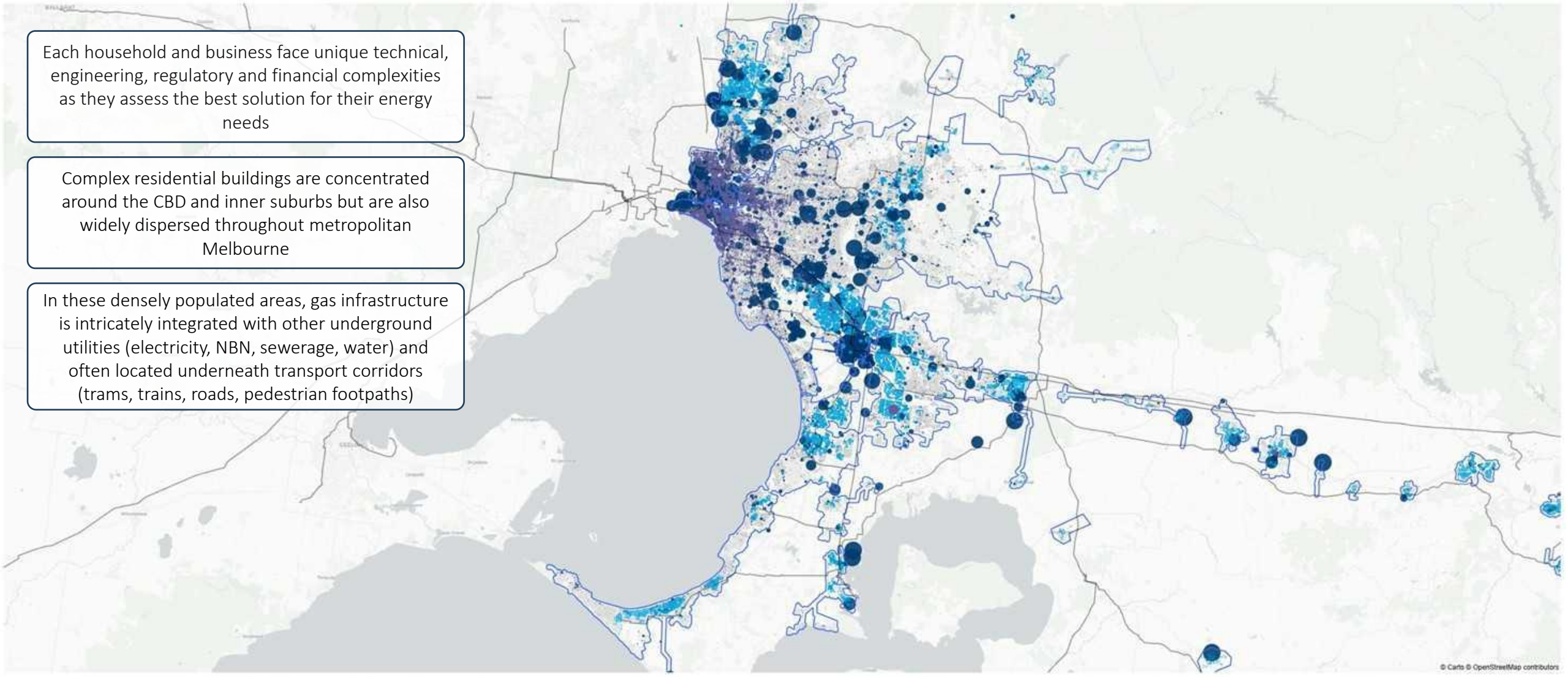


Complex Buildings and Financial Footprint| There are no consistent patterns in the variety of gas use and gas users across Victoria

Each household and business face unique technical, engineering, regulatory and financial complexities as they assess the best solution for their energy needs

Complex residential buildings are concentrated around the CBD and inner suburbs but are also widely dispersed throughout metropolitan Melbourne

In these densely populated areas, gas infrastructure is intricately integrated with other underground utilities (electricity, NBN, sewerage, water) and often located underneath transport corridors (trams, trains, roads, pedestrian footpaths)



Legend Other Residential · Commercial and Industrial Customers · Financially Stressed or Stretched Residential · Complex Buildings — MGN/AGN Extent — Licensed Pipelines

Average Annual Consumption 2021-2023

- 10,000 GJ or less
- 100,000 GJ or more

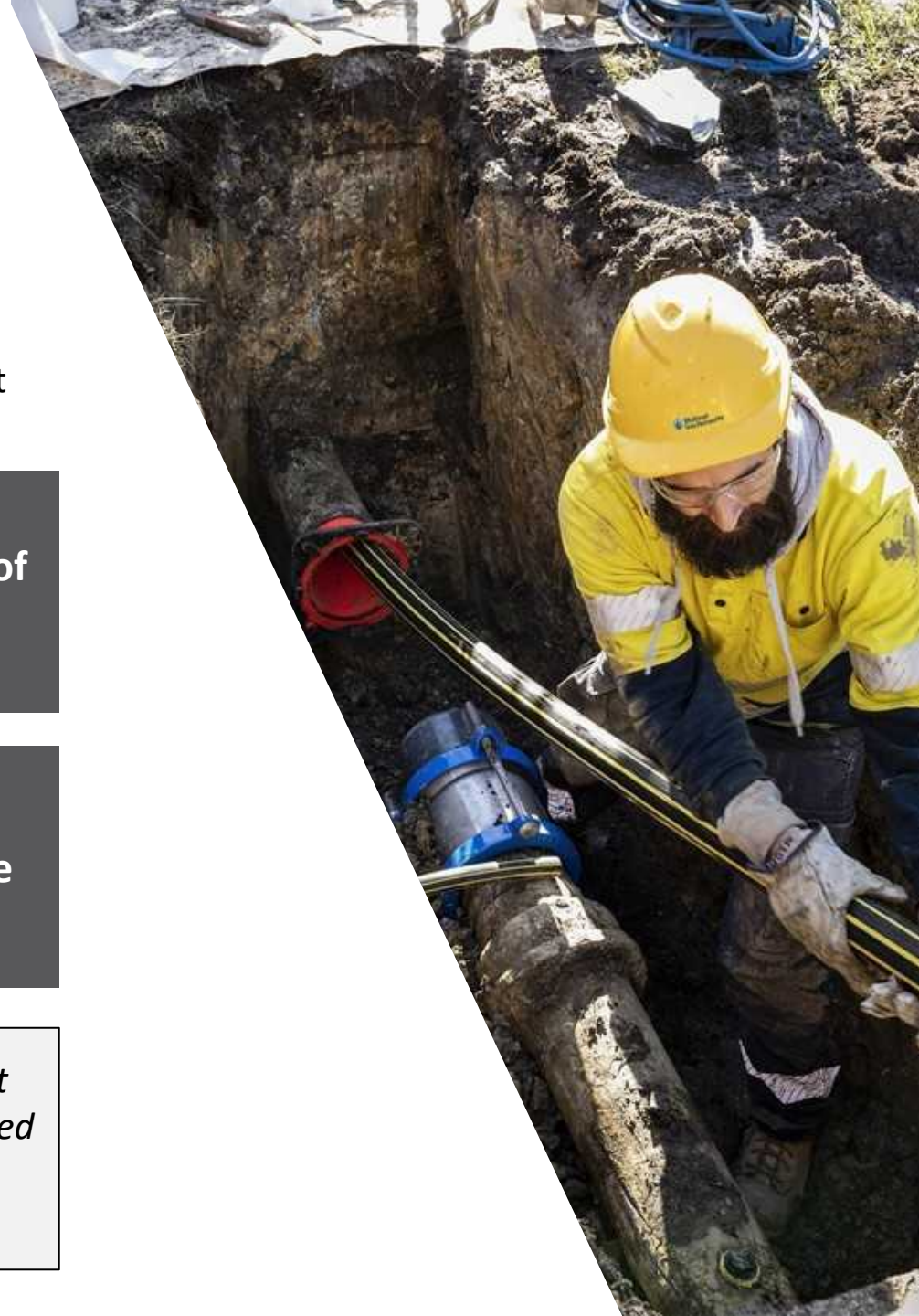
Australian Gas Infrastructure Group

Assessment of Customer Energy Requirements

Each household and business faces a range of complexities when assessing best solution for their energy needs. These include:

- **Upfront transition costs**
- **Indirect transition costs**
- **Ongoing cost of electricity**
- **Ability to control (e.g. renters)**
- **Regulatory and location constraints**
- **Appliance age**

The varied and extensive use of gas within AGIG's Victorian networks makes it difficult to identify any trends or patterns that are applicable state-wide. Tailored solutions accounting for user types, preferences and needs at localised geographical areas are required rather than a one size fits all approach.



Summary (1/2)

1.46 **AGIG's Victorian AGN and MGN Network** currently **support** approximately **1.46 million connections**.

AGIG's network is used for a wide range of applications, across residential, commercial and industrial purposes, **reflecting the diversity** of its role in energy supply and economic activity.

Commercial and industrial gas use is spread across various locations **without any discernible geographic pattern**, indicating that **its utilisation is not concentrated in specific regions** or communities.

Residential customers are dispersed geographically and represent a variety of dwelling types, archetypes and levels of financial wellbeing, contributing to the **complexity of the customer base**.

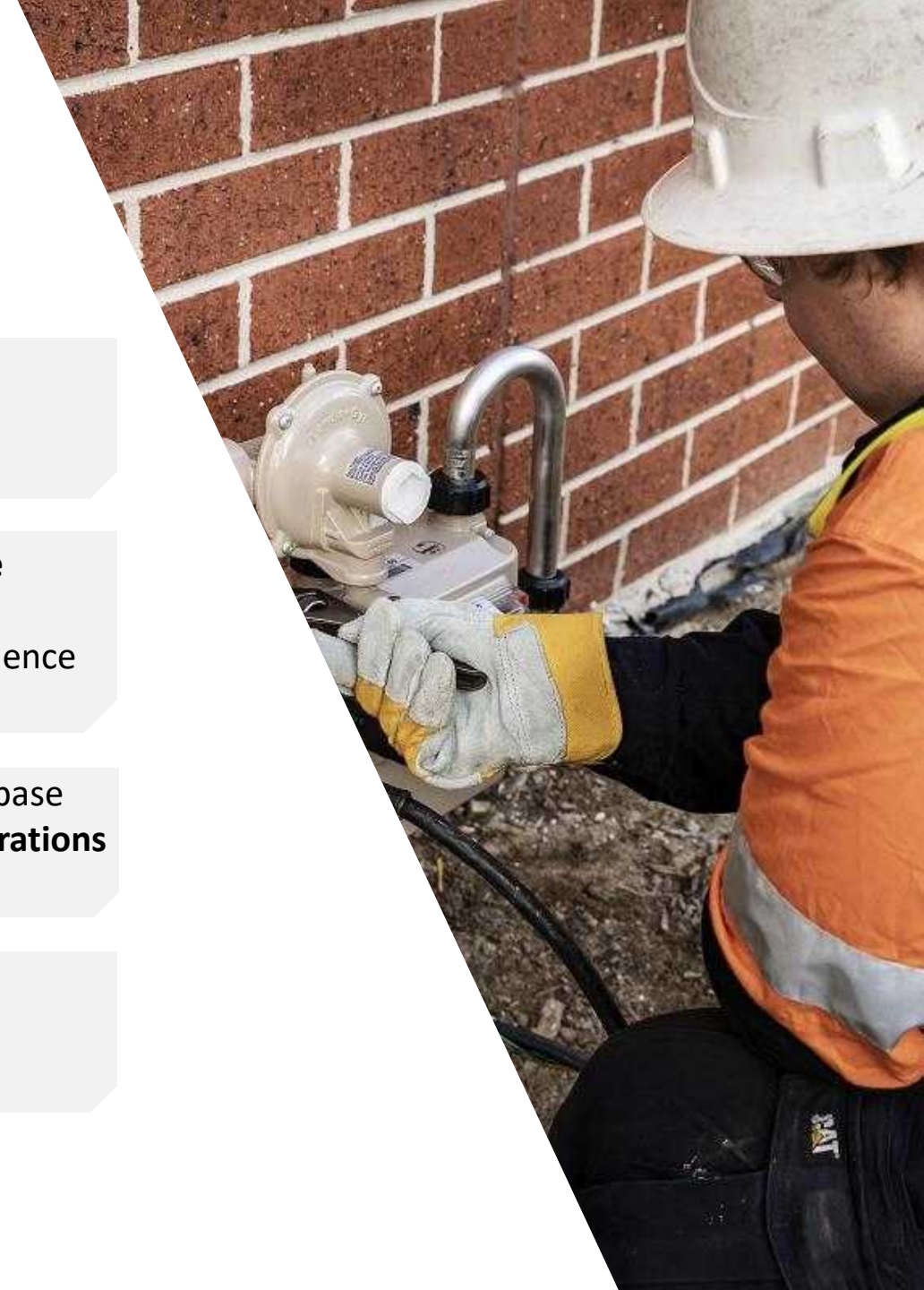
Summary (2/2)

Each household and business faces a range of complexities when assessing the best solution for their energy needs.

The availability of electric energy alternatives does not guarantee suitability for all residents or businesses, as factors such as cost, infrastructure compatibility, and specific energy requirements influence decision-making.

This high-level assessment of the Victorian network and customer base **highlights diverse customer types, needs and operational considerations across all locations**.

A large, well utilised gas network helps keep energy costs low for commercial and industrial customers by **sharing costs across many users**.



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Appendices

Appendices

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Appendix 2 – Residential Archetypes 25

Appendix 3 – Commercial and Industrial Archetypes 27

Appendix 4 – Case Studies and Landmarks 29

Appendix 1

Key Definitions

Archetype	Distinct profiles that represent different types of consumers based on their sector, configuration and end use applications. These archetypes help in understanding and addressing the diverse requirements of existing gas customers (examples include dairy, hospitals, high-temperature product manufacturing).
Complex Buildings	Combines residential buildings such as heritage homes, terraces and townhouses and shared residential (e.g., apartment buildings).
Commercial and Industrial	All MB (Metro Business) and NB (Non-metro Business) customer types provided to GPA in dataset "20231231 AGN MIRN Consumption Data 2017 to 2023 Full Read Data.xlsb" and "20231231 Multinet MIRN Consumption Data 2012 to 2023 by Month.xlsx" and All Tariff D/V Customers provided to GPA in dataset "Major Users – AGN Vic and MGN. xlsx".
Financial Wellbeing	Terminology is general in sense, but categorized to reflect the SEIFA – Index of Relative Socio-economic Advantage and Disadvantage (IRSAD) Quintiles for all LGAs (Australian Bureau of Statistics) • Financially Stressed – IRSAD 1 and 2 • Financially Stretched - IRSAD 3 and 4 • Financially Comfortable – IRSAD 5
Mixed Use	A general term used to describe different types of establishments and activities which coexist and utilise gas for their operations. This includes residential, commercial and industrial users but also includes different archetypes (see above) of those users.
Residential	All MR (Metro Residential) and NR (Non-metro Residential) customer types provided to GPA in dataset "20231231 AGN MIRN Consumption Data 2017 to 2023 Full Read Data.xlsb" and "20231231 Multinet MIRN Consumption Data 2012 to 2023 by Month.xlsx"
Footnote 1	Calculated on the basis of the delivered energy to the appliance that 1 PJ is equivalent to 278 GWh, equating to around 27,536 GWh, compared with and Victoria's electricity consumption (independent of how it has been generated) of 43,000 GWh in 2024 according to the Australian Energy Regulator's Annual Electricity Consumption Report. Note AGIG's supply represents about 46% of Victoria's gas use of 215.2 PJ or ~59,800 GWh in 2022-23 according to the 2024 Australian Energy Statistics (Table K).

Appendix 2

Residential Archetypes

The most common residential gas user on the AGN/MGN Network (800,749 users):

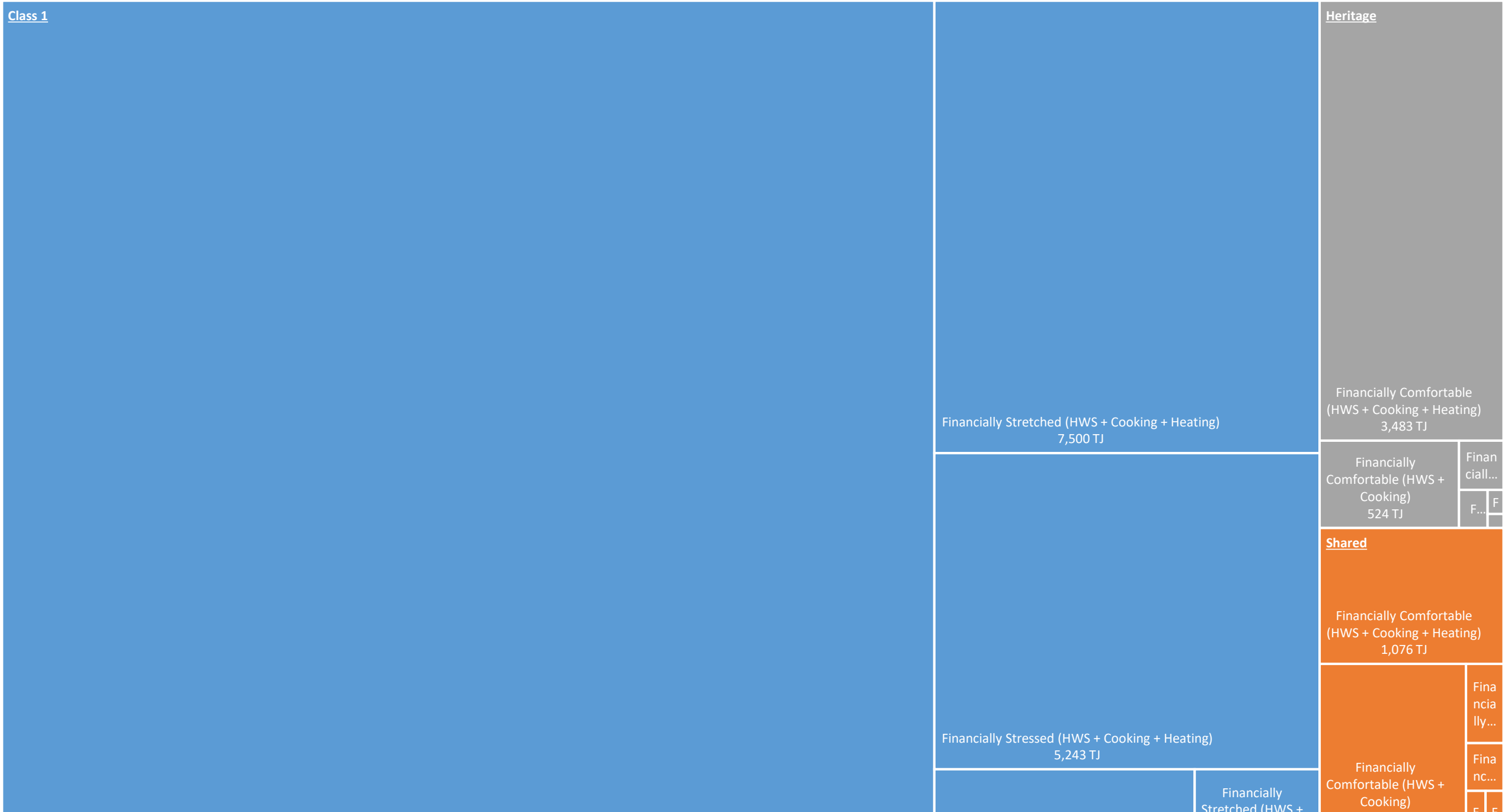
- Lives in a Class 1 Dwelling,
- Likely has the full suite of gas appliances (HWS + Cooking + Heating) and,
- Is Financially Comfortable (or economically advantaged).

The least common residential gas user on the AGN/MGN Network (38 users):

- Lives in a Terrace/Townhouse,
- Doesn't have gas heating in their home and,
- Is Financially Stressed (or economically disadvantaged).

Residential Consumption by Archetype					
Archetype	Economic Wellbeing	Appliances Installed	Residential Gas Consumption Percentage	Annual ~ PJ (2023)	MIRN Count (2023)
Class 1	Financially Comfortable	HWS + Cooking + Heating	62.1%	38	782,004
Class 1	Financially Stretched	HWS + Cooking + Heating	12.3%	7	183,446
Class 1	Financially Stressed	HWS + Cooking + Heating	8.6%	5	140,315
Heritage	Financially Comfortable	HWS + Cooking + Heating	5.7%	3	73,658
Class 1	Financially Comfortable	HWS + Cooking	3.2%	2	95,725
Shared	Financially Comfortable	HWS + Cooking + Heating	1.8%	1	46,497
Shared	Financially Comfortable	HWS + Cooking	1.7%	1	42,067
Terrace	Financially Comfortable	HWS + Cooking + Heating	1.2%	1	22,021
Heritage	Financially Comfortable	HWS + Cooking	0.9%	1	24,682
Class 1	Financially Stretched	HWS + Cooking	0.8%	0	29,665
Class 1	Financially Stressed	HWS + Cooking	0.8%	0	25,688
Terrace	Financially Comfortable	HWS + Cooking	0.2%	0	8,504
Shared	Financially Stressed	HWS + Cooking + Heating	0.2%	0	4,679
Heritage	Financially Stretched	HWS + Cooking + Heating	0.2%	0	2,481
Shared	Financially Stretched	HWS + Cooking + Heating	0.1%	0	3,072
Heritage	Financially Stressed	HWS + Cooking + Heating	0.1%	0	1,300
Shared	Financially Stressed	HWS + Cooking	0.1%	0	1,959
Shared	Financially Stretched	HWS + Cooking	0.1%	0	1,669
Heritage	Financially Stretched	HWS + Cooking	0.0%	0	583
Heritage	Financially Stressed	HWS + Cooking	0.0%	0	322
Terrace	Financially Stretched	HWS + Cooking + Heating	0.0%	0	155
Terrace	Financially Stretched	HWS + Cooking	0.0%	0	82
Terrace	Financially Stressed	HWS + Cooking + Heating	0.0%	0	103
Terrace	Financially Stressed	HWS + Cooking	0.0%	0	38

Residential Archetypes and Factor of Difficulty (Gas Consumption 2023)



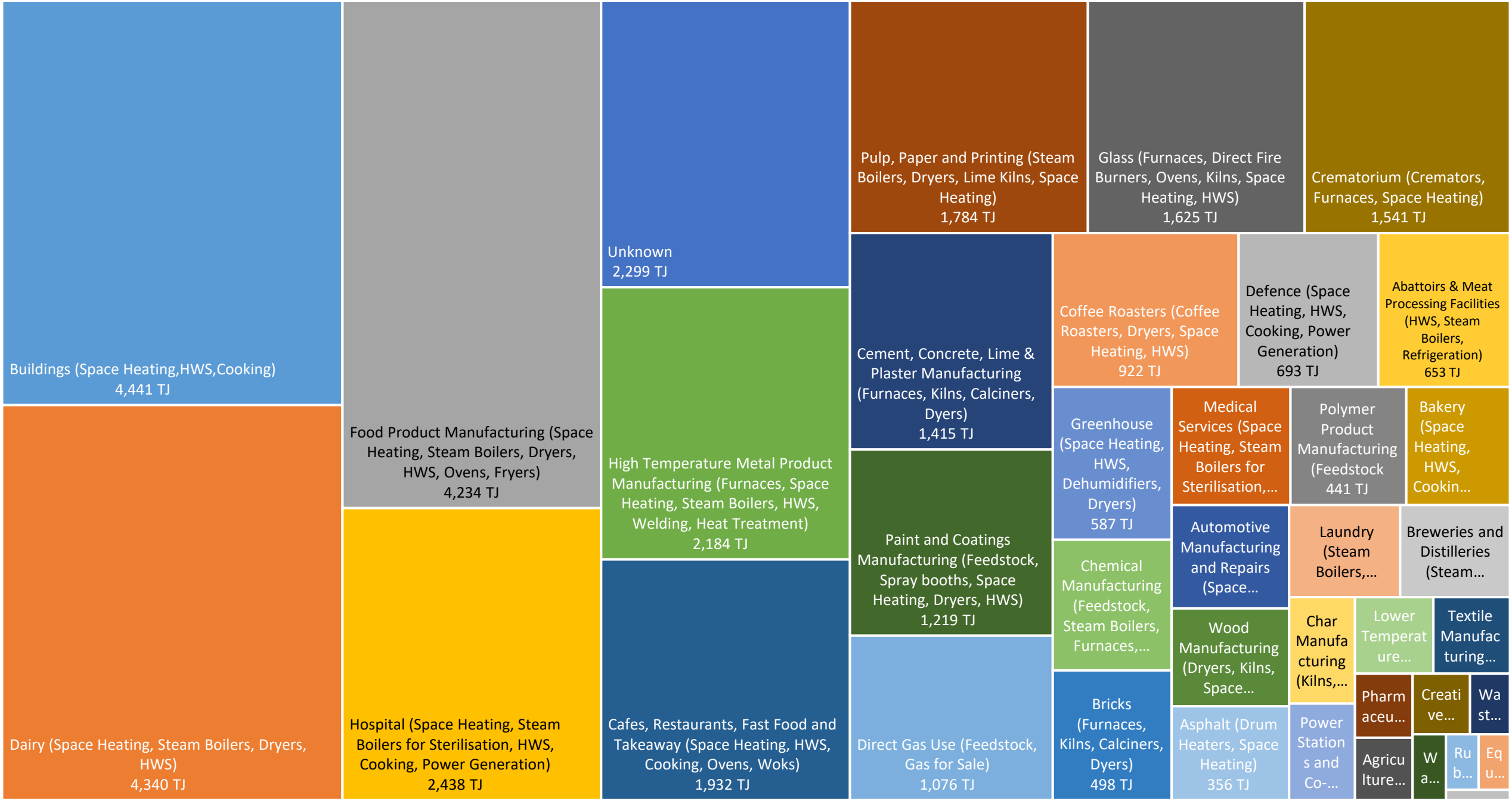
Appendix 3

Commercial and Industrial Archetypes

- Gas usage in the C&I sector is highly varied, encompassing a wide array of business types and functions, each with distinct use cases and priorities.
- 50% of Commercial and Industrial gas use is consumed by:
  - Buildings,
  - Dairy,
  - Food Product Manufacturing,
  - Hospitals,
  - High Temperature Product Manufacturing and,
  - Cafés, Restaurants, Fast Food and Takeaway.
- 28 archetypes account for over 90% of commercial and industrial gas use, highlighting the diverse range of gas use across Victoria.
- 6% of the Commercial and Industrial gas use is unknown or unclassified. This is primarily due to businesses:
  - Not having an online presence (business/archetype was unable to be correlated with the address),
  - Having a business account registered for residential use.
- 'Other' Commercial and Industrial gas use encompasses over 10 archetypes, each contributing less than 0% to the total annual gas consumption.

Commercial and Industrial Gas Consumption by Archetype		
Archetype	Commercial and Industrial Gas Consumption Percentage	Annual ~ PJ (Average)
Buildings (Heating, HWS, Cooking)	11%	4.4
Dairy	11%	4.3
Food Product Manufacturing	11%	4.2
Hospital	6%	2.4
High Temperature Metal Product Manufacturing	6%	2.2
Cafes, Restaurants, Fast Food and Takeaway	5%	1.9
Pulp, Paper and Printing	5%	1.8
Glass	4%	1.6
Crematorium	4%	1.5
Cement, Concrete, Lime & Plaster Manufacturing	4%	1.4
Paint and Coatings Manufacturing	3%	1.2
Direct Gas Use	3%	1.1
Coffee Roasters	2%	0.9
Defence	2%	0.7
Abattoirs & Meat Processing Facilities	2%	0.7
Greenhouse	2%	0.6
Chemical Manufacturing	1%	0.5
Bricks	1%	0.5
Medical Services	1%	0.5
Polymer Product Manufacturing	1%	0.4
Bakery	1%	0.4
Automotive Manufacturing and Repairs	1%	0.4
Wood Manufacturing	1%	0.4
Asphalt	1%	0.4
Laundry	1%	0.3
Breweries and Distilleries	1%	0.3
Char Manufacturing	1%	0.2
Power Stations and Co-Gen Facilities	1%	0.2
Unknown	6%	2.3
Other	3%	1.0

Industrial and Commercial Sum of Annual Gas Consumption (Average)

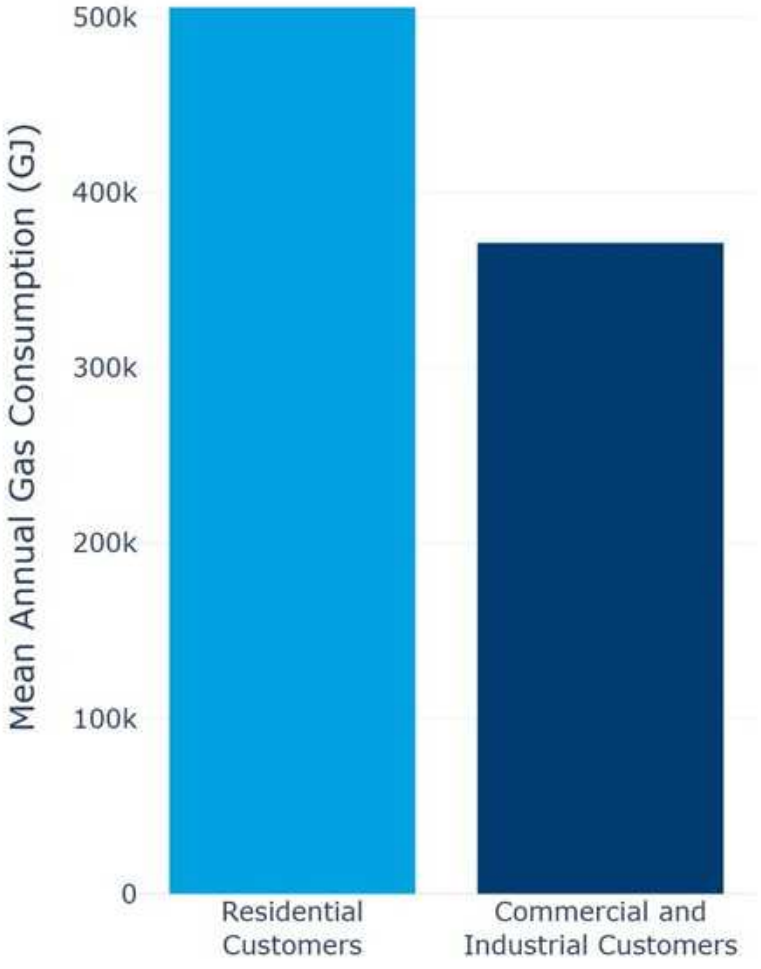


Appendix 4

Case Studies and Landmarks

Case Study	Sydney Road, Melbourne CBD
Case Study	Bayswater, Victoria
Case Study	Hastings, Victoria
Case Study	Hospital and Education Precinct, Melbourne CBD
Case Study	Shepparton, Victoria
Landmark	Melbourne Cricket Ground, Melbourne CBD
Landmark	Sydney Road, Melbourne CBD
Landmark	University of Melbourne, Melbourne CBD

Case Study: Sydney Road, Melbourne CBD

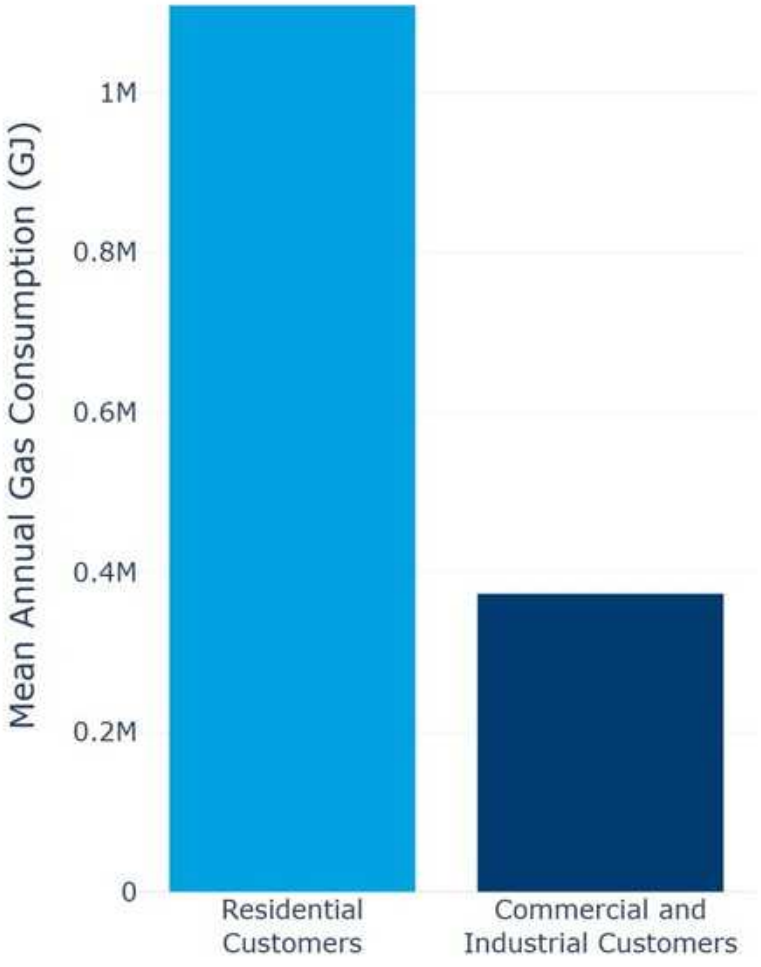


Legend Residential Customers · Commercial and Industrial Customers — Distribution Network — Transmission Network

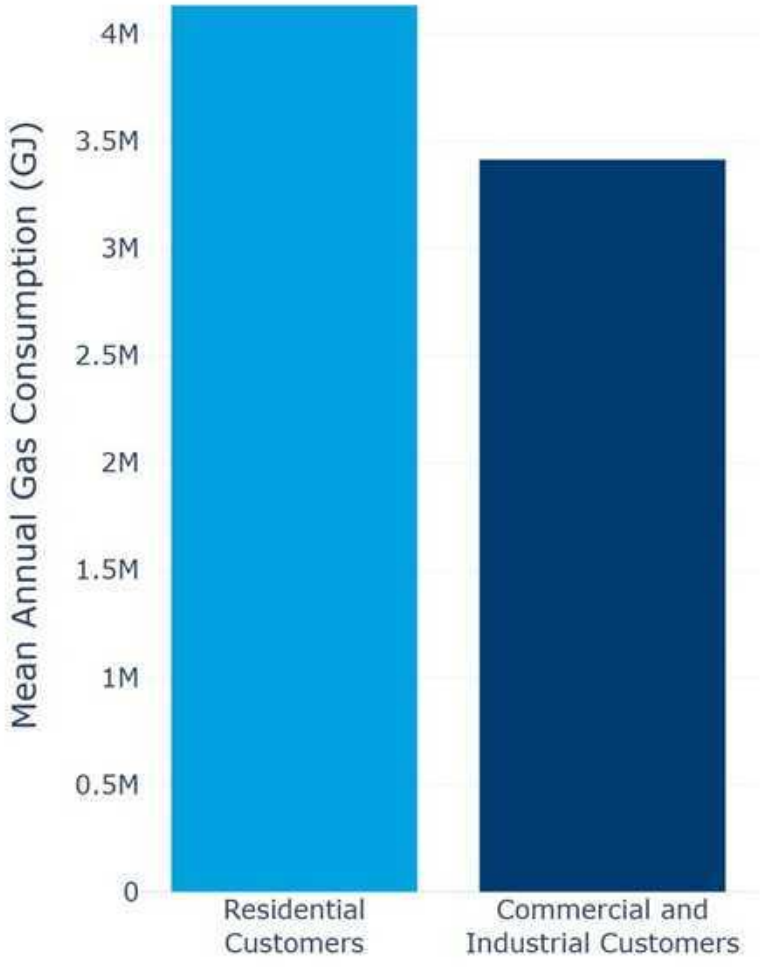
Average Annual Consumption 2021-2023 ● 1,000 GJ or less ● 10,000 GJ or more

Australian Gas Infrastructure Group

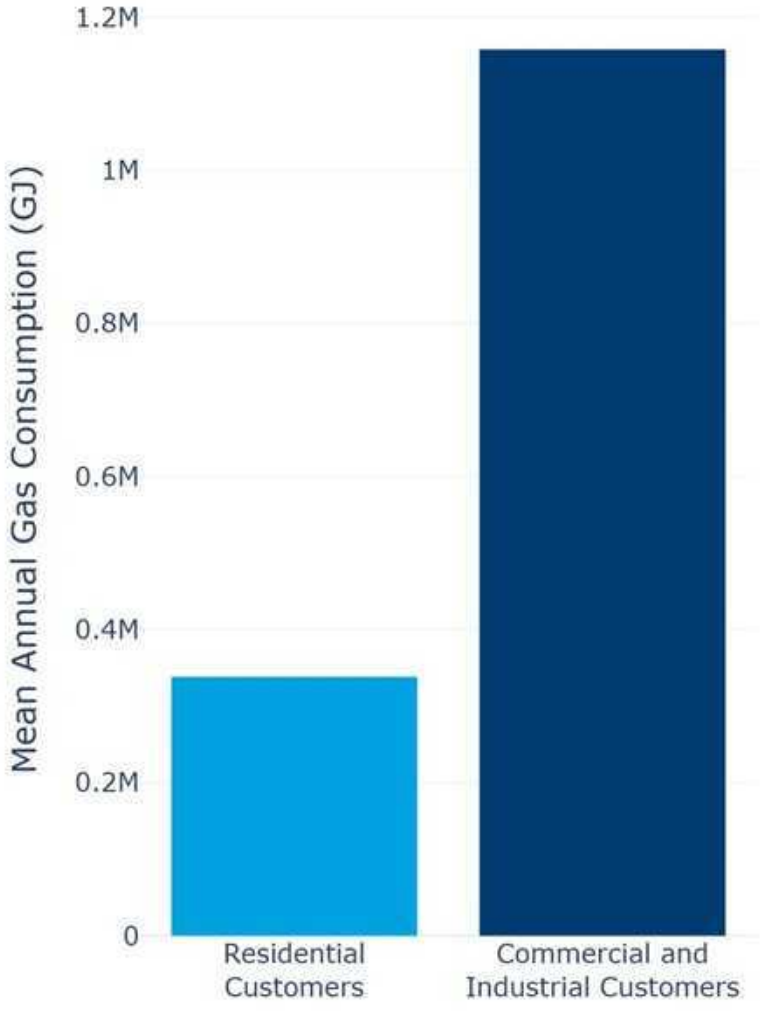
Case Study: Bayswater, Victoria

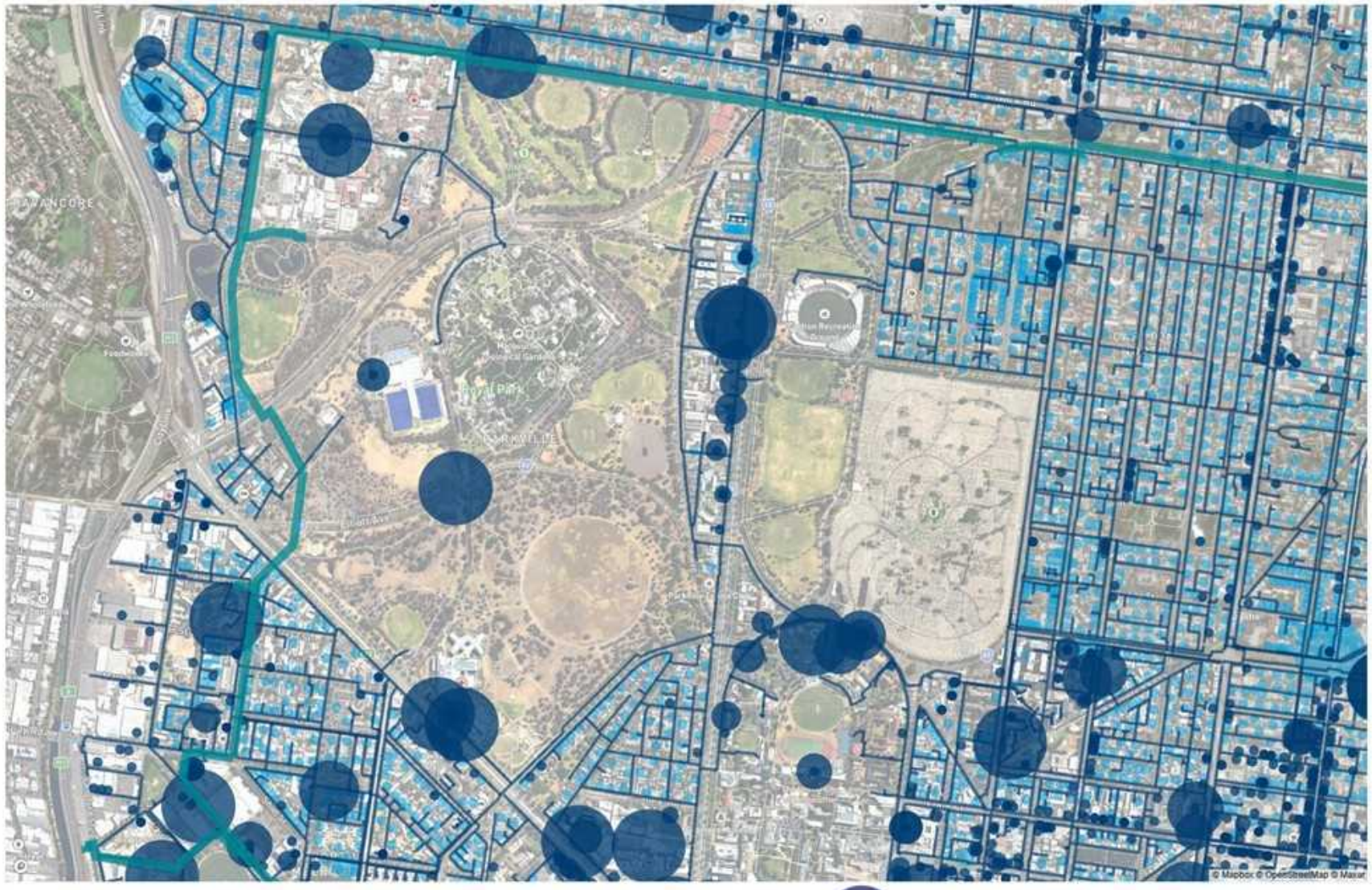


Case Study: Hastings, Victoria

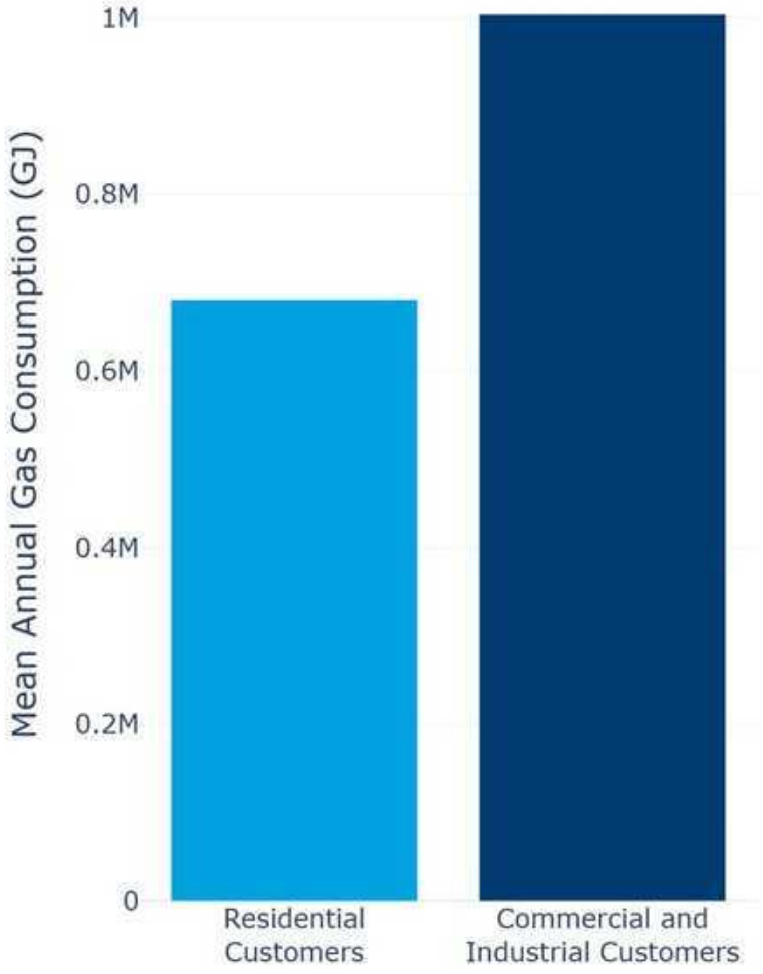


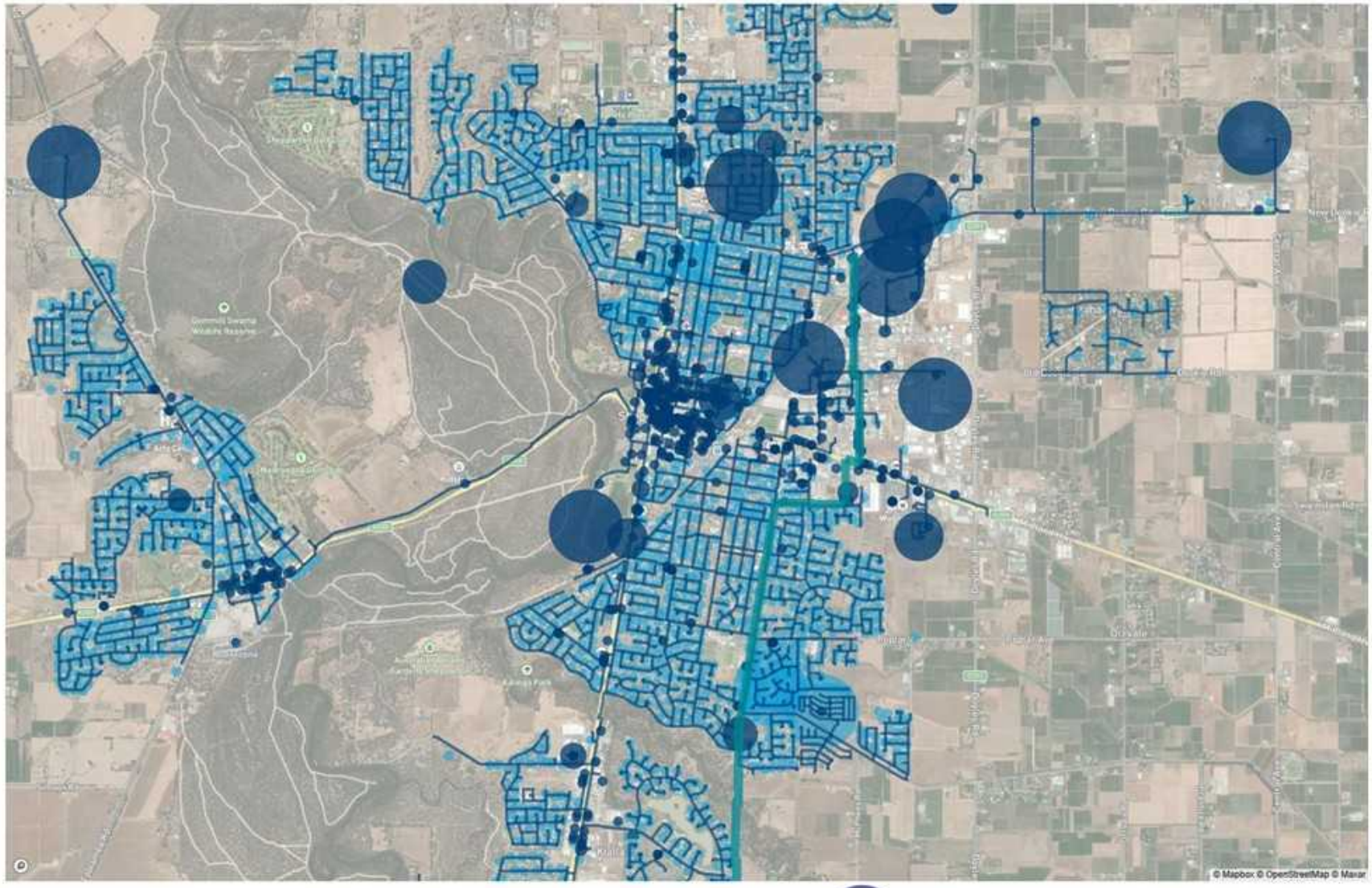
Case Study: Hospital & Education Precinct, Melbourne CBD





Case Study: Shepparton, Victoria





Legend Residential Customers · Commercial and Industrial Customers — Distribution Network — Transmission Network

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Australian Gas Infrastructure Group

Landmark: Melbourne Cricket Ground, Melbourne CBD

Australian Gas Infrastructure Group

Landmark: Sydney Road, Melbourne CBD

Australian Gas Infrastructure Group

Landmark: University of Melbourne, Melbourne CBD