Energy inventory – what we know about energy in Canterbury

Canterbury…

is the largest region by land area

it is also the most populous region in the South Island and the second most populous region in NZ. The population is projected to grow by **0.8%** per annum until 2048

is positioned well for the energy transition

and has natural advantages for transitioning to more renewable energy with an abundance of water, sun and wind.

significantly contributes electricity to the national grid

all significant-scale electricity generation in Canterbury is renewables based – mostly from hydro-electric schemes

SUPPLY

- **3** large scale solar arrays
- The most installed rooftop solar of any region – **125MW, which is only a fraction of the overall potential**
- Numerous solar proposals are in the pipeline

- Canterbury has the highest number of EV charging points in the South Island at **286**

- **11** Major Hydro-power stations with generation capacity of **1795MW**
- Benmore Hydro-station is the **2nd** largest in NZ

- As at May 2025 there are 19 active Transpower projects proposing to add over 4500MW of new generation capacity in Canterbury and South Canterbury

DEMAND

- Electricity demand is forecast to grow by an average of **2 – 2.8%** per annum

- The transport system is predominantly fuelled by fossil energy sources i.e. diesel, petrol, gas – demand will shift with electrification

- Demand for electricity and biomass is expected to increase significantly to support decarbonisation and industry growth

- Seasonal changes influence energy demand – i.e. in winter increased demand for heating and in summer increased demand for cooling and irrigation

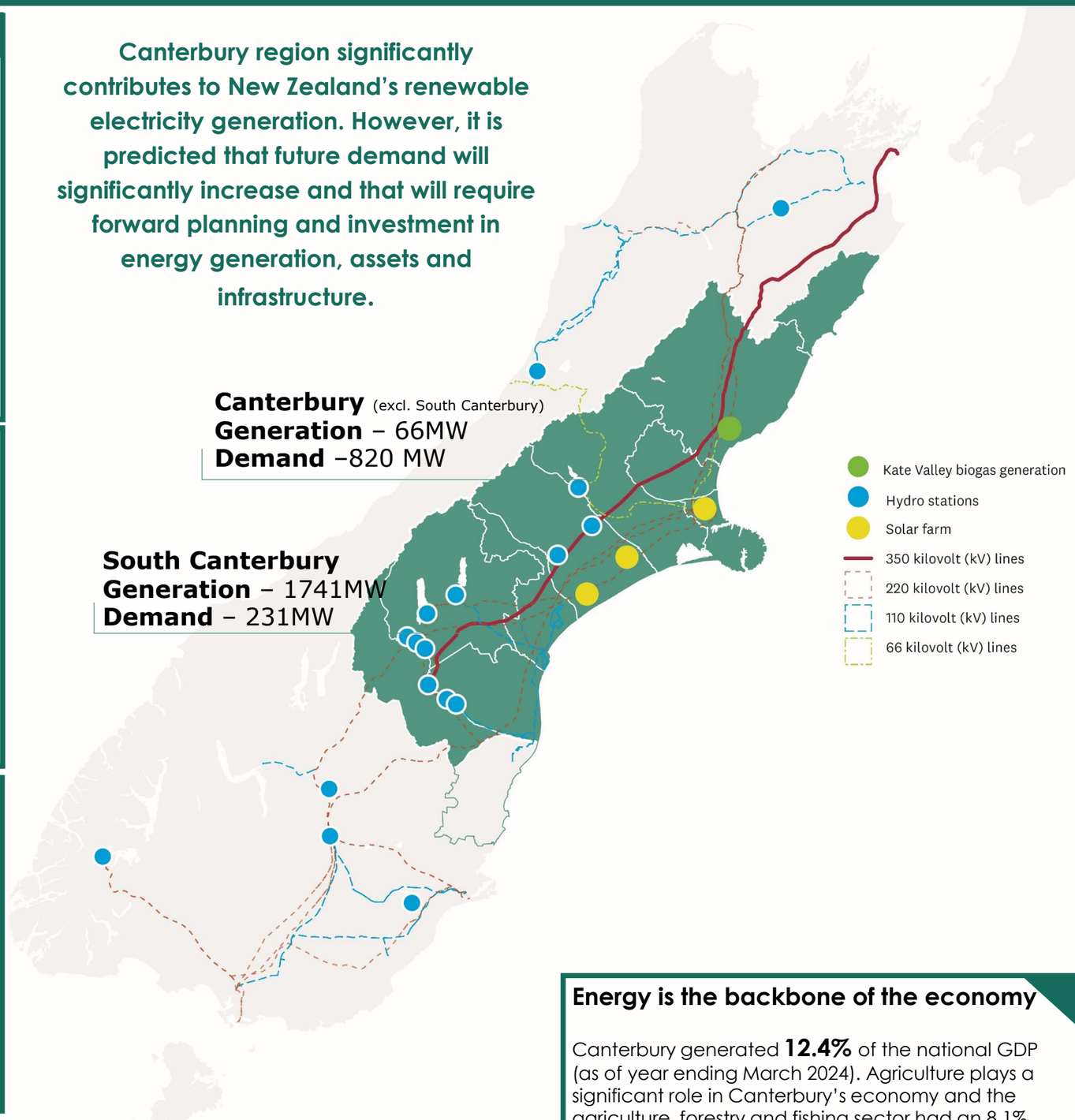
Key things to note:

Canterbury uses a mix of energy types
- **Fossil fuels** i.e. petrol, coal, diesel
- **Electricity** i.e. renewable hydro, solar
- **Other renewable energies** i.e. biomass or wood

Often electricity and energy are terms used interchangeably but electricity is a subset of energy. In Canterbury we have highly renewable electricity

Fossil fuels will be the biggest challenge in the energy transition for the Canterbury region as we are still heavily reliant on fossil fuels for transport and industry

Canterbury region significantly contributes to New Zealand's renewable electricity generation. However, it is predicted that future demand will significantly increase and that will require forward planning and investment in energy generation, assets and infrastructure.



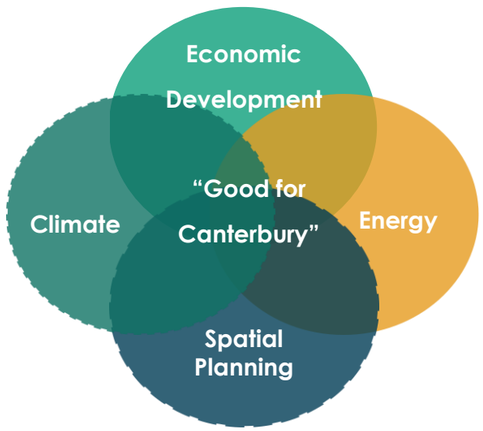
NB: the South Canterbury and the Canterbury (excluding South Canterbury) regional boundaries are based on the boundaries used in the Transpower Planning Report 2023. The broader outline on the map indicates the full extent of the Waitaki District which sits across the Canterbury and Otago regions

Energy is the backbone of the economy

Canterbury generated **12.4%** of the national GDP (as of year ending March 2024). Agriculture plays a significant role in Canterbury's economy and the agriculture, forestry and fishing sector had an 8.1% increase in growth rate on the previous year – compared with NZ national increase of 6.9%. Hydro-electricity generation accounted for GDP of $102.5m in Canterbury Region in the year to March 2024, up 4.7% from a year earlier.

Shaping the future of energy in Canterbury

Why is a collaborative approach on energy, in the form of a strategy or action plan needed for the Canterbury region?

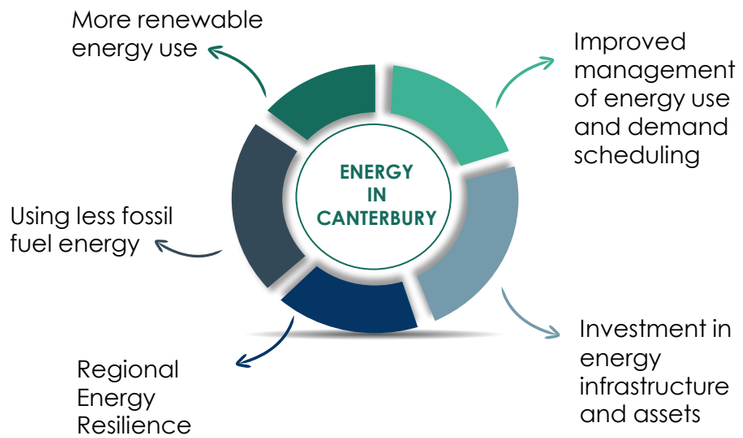


'We need alignment and coordinated action with local, regional and national plans'
– Energy workshop

"Without a clear shared vision for energy – change will be done to us, and we will lose out on the benefits and the value"
– Energy workshop participant

- Benefits for the economy
- Benefits for social wellbeing
- Benefits for the environment

Canterbury stakeholders want more confidence and clarity about how we encourage and support:



Key energy changes that Canterbury can expect

Electricity and renewable energy demand will increase

Driven by:

- A growing population
- Increasing urban development
- Increasing industrial activity
- Decarbonisation and electrification of homes, transportation and industry.

Investment will be needed

- Investment in generation and networks is crucial to meet increasing electricity demand.
- It is predicted the energy system across NZ will require an unprecedented investment of $42 billion in the 2020s,

There is a pipeline of renewable energy

- Canterbury has a pipeline of new energy generation that is either coming online, is planned, consented or under construction
- Much of this is solar generation

Climate will have an impact

- Climate change poses significant risks to energy supply and demand, affecting hydro generation and electricity infrastructure.
- Significant weather events will likely impact resilience of energy assets and infrastructure

Opportunities and benefits

Each opportunity and benefit responds to existing or potential challenges of the energy transition

Encourage new industry	**Support existing industry**	Confidently use and prepare for new technologies	**Lower GHG emissions and take climate action**	Enhance our electricity system and the way that we manage demand peaks
Support community energy models	Partnership approaches to improving sustainable energy use	**Use our natural assets with sun, wind and water**	Develop a workforce pipeline for sustainable energy	**Improve our energy efficiency**
Build energy literacy and engagement	**Local solutions for energy resilient communities**	Improve energy security	**Shape and encourage new investment and innovative funding models**	Ensure energy affordability and equity