

10 November 2021

The Honourable Chris Tallentire MLA
Education and Health Standing Committee
Level 1, 11 Harvest Terrace
WEST PERTH WA 6005

Dear Chair

INQUIRY INTO THE RESPONSE OF WESTERN AUSTRALIAN SCHOOLS TO CLIMATE CHANGE

Thank you for the opportunity to make a submission to the Education and Health Standing Committees' inquiry into the response of Western Australian Schools to Climate Change (**the Inquiry**).

Synergy is Western Australia's largest electricity generator and energy retailer and is owned by the State Government of Western Australia. Synergy owns and operates thermal power stations and renewable electricity generation facilities in an area known as the South West Interconnected System (**SWIS**). It is also the government owned electricity retailer for the south west, supplying electricity to all residential and some business and industrial customers.

Synergy is pleased to be able to contribute to the Inquiry and provide information on its engagement with Western Australian schools regarding energy and climate change. Western Australia is currently undergoing an energy transformation. Increasingly, distributed energy resources (**DER**) such as solar, battery and smart home devices can mitigate climate change impacts and improve energy security.

If you have any further questions, please contact Rudyard Connery, Senior Government Relations Advisor, via email

Yours sincerely

A stylized orange sunburst graphic is positioned behind the signature text.

JASON WATERS
CHIEF EXECUTIVE OFFICER

1. Background

Synergy is proud to be Western Australia's largest integrated electricity generator and energy retailer. Synergy's clear purpose is to lead Western Australians to their intelligent energy future. This intelligent energy future includes adopting environmentally sustainable practices for future generations. Synergy acknowledges the scientific consensus on anthropogenic climate change, the crucial need for a transition to a net zero carbon society, and the adaption required to address emerging and potential climate impacts.

Synergy aims to provide opportunities to inspire future generations to be part of the global energy transformation and is collaborating with several Western Australian schools to implement climate change adaption actions. These actions include embracing cutting-edge renewable technologies by converting schools into smart, green, and flexible power plants through Synergy's Virtual Power Plant for Schools pilot (**VPP for Schools**). Synergy is also working collaboratively with the Science Teachers Association of Western Australia to drive student enthusiasm and interest in renewable technologies through the Synergy Schools Solar Challenge (**Solar challenge**).

2. Current Initiatives

2.1 VPP for Schools Pilot

Synergy, in conjunction with the Western Australian Government and the Department of Education, is providing 16 schools the opportunity to be converted into smart, green and flexible virtual power plants (**VPP**). A VPP is a network of distributed energy resources (**DER**) such as solar photovoltaic, batteries and electric vehicles, that are aggregated and activated based on demand. By bringing together schools and VPP technology, the pilot aims to increase community awareness of the importance of DER initiatives to create cleaner, more reliable and affordable energy.

The 16 participating schools in the pilot include a cross-section of metropolitan, regional, primary and secondary schools. Synergy has worked with the Department of Education to identify suitable schools based on operational, system and technical considerations. There are 10 confirmed participating schools, with an additional 6 to be announced shortly.

The 10 confirmed schools are:

- Baldivis Secondary College;
- Belridge Secondary College, Beldon;
- Butler College;
- Coastal Lakes College, Lakelands;
- Comet Bay Primary School, Secret Harbour;
- Gilmore College, Orelia;
- Joseph Banks Secondary College, Banksia Grove;
- Kalgoorlie-Boulder Community High School;
- Rossmoyne Senior High School; and
- Success Primary School.

The 10 confirmed participating schools will have DER technology and infrastructure installed which includes a commercial battery that when utilised within a VPP can provide some of the same services to the electricity system as a traditional power plant.

The VPP for Schools pilot will assist in the transition towards a cleaner energy future by testing how a VPP can help each school better manage its energy consumption, as well as making the local electricity grid more stable and reliable. The pilot project is currently testing

the ability to aggregate and dispatch multiple small DER including batteries and, in some cases solar, to determine the potential benefits for the school, Synergy and local communities.

As part of the VPP for Schools pilot, Synergy is developing educational materials in conjunction with science, technology, engineering, and mathematics (**STEM**) education specialists and students. The educational material aims to provide students with opportunities to develop their critical thinking skills, build their energy literacy and encourage participation in STEM subjects.

As the pilot progresses, Synergy will work closely with the schools and the Department of Education to understand how the outcomes can contribute to the changing energy transformation landscape. In the long term, this pilot will help Synergy focus on building VPP capability and technology and serve to inform future VPP design models in the SWIS.

2.2 Synergy School Solar Challenge

Synergy Schools Solar Challenge is a joint initiative between Synergy and the Science Teachers Association of Western Australia (**STAWA**). The program is designed to address the low number of students choosing to study STEM.

The Solar Challenge is delivered to Year 6 and Year 8 students who build and race miniature solar-powered cars while learning about renewable energy. The program features eight lessons that are designed specifically to be part of the STEM curriculum and aims to encourage students to choose to study STEM subjects. These materials can be used to teach students about solar energy, friction and gearing, and culminating in students building their own solar powered race car.

To ensure parity across all participating schools, Synergy provides each class with the same standardised solar car kit. The full cost of the program is funded by Synergy to the value of \$180,000 per annum, which covers all school equipment, lesson plan development, promotional materials, event competition costs and STAWA program management costs.

When the Solar Challenge was launched in 2017, 64 schools participated in 5 events. In 2021, the Solar Challenge expanded to 180 schools and close to 700 students participated in eight events that included regional locations in Albany, Bunbury, Collie, Geraldton, and Kalgoorlie. This significant growth across the last five years reflects the increased role that schools are playing in raising awareness and responding to climate change. As the Solar Challenge moves into its sixth year, Synergy will continue to explore ways to work with schools to encourage students to study STEM subjects.

3. Future considerations

Synergy acknowledges that climate change is a global issue that creates both opportunities and challenges. As Western Australia transitions to a zero net emissions economy by 2050, in accordance with the State Government's Climate Change Policy, the energy sector will need to ensure that it is employing the right people with the right knowledge, skills and experience to realise the opportunities and solve the challenges. Synergy recognises the important role that schools play in equipping students with the knowledge and skills they need to play an active role in the climate change and decarbonisation journey. Organisations like Synergy look forward to employing the best talent available so we can not only meet these challenges, but also lead Western Australians to an intelligent energy future.