Economics Legislation Committee
ANSWERS TO QUESTIONS ON NOTICE
Industry, Innovation and Science Portfolio
2016-17 Supplementary Budget Estimates
20 October 2016

DEPARTMENT: DEPARTMENT OF INDUSTRY, INNOVATION AND SCIENCE

TOPIC: SKA and renewable energy

REFERENCE: Written Question – Senator Carr

QUESTION No.: SI-70

1. Is it still planned that Murchison and Pawsey will be powered by renewable energy?
2. What forms of energy was that?
3. Was an Education Investment Fund grant received for this purpose?
4. When was that grant received? Was it acquitted and what is the acquittal date?
5. Has this eventuated? If not, why not?
6. What plans currently exist for power management?

ANSWER

1. Yes. The Murchison Radio-astronomy Observatory and the Pawsey Supercomputing Centre are powered as much as practicable by renewable energy.

2. The Murchison Radio-astronomy Observatory, located approximately 315kms north-east of Geraldton, is powered by a stand-alone power station incorporating hybrid diesel and solar photovoltaic and lithium-ion battery energy storage system elements.

The Pawsey Supercomputing Centre, located in Perth, has a solar photovoltaic system incorporated into the façade of the building and another solar array on the roof which supplement power from the electricity grid. It also utilises a groundwater cooling system to reduce use of electricity for cooling.

3. Yes, two Education Investment Fund (EIF) grants have been used to support the Murchison Radio-astronomy Observatory power station and Pawsey Supercomputing Centre renewable energy systems:

- Construction of the Pawsey Supercomputing Centre building and computing infrastructure was funded in part by EIF. This includes the solar cells in the façade of the building. The array on the roof was later installed by CSIRO using its own funds.

- The groundwater cooling system at the Pawsey Supercomputing Centre was supported by EIF through the Sustainable Energy for the Square Kilometre Array (SESKA) project.

- The Murchison Radio-astronomy Observatory (MRO) power station was partly funded by EIF through the Sustainable Energy for the Square Kilometre Array (SESKA) project (i.e. the same overall EIF grant as supported the Pawsey groundwater cooling system).
    - *Note: the MRO power station is designed to support the SKA pathfinder instruments at the MRO (such as ASKAP), not the SKA telescope itself.*

4. The first tranche of EIF funds for the Pawsey Supercomputing Centre was received in FY2009/10. The final report on the Pawsey Supercomputing Centre grant was submitted in December 2014.

Funds for the SESKA project were received in FY2010/11:

- The Pawsey groundwater cooling component was finalised and acquitted by 30 June 2014.
- The first stage of the MRO power station became operational in August 2016 and the large solar photovoltaic expansion of it is due to come on line early in 2017. The project should be closed out by the end of the 2016/17 financial year and acquitted soon thereafter.

5. The Pawsey Supercomputing Centre and Sustainable Energy for the SKA (SESKA) EIF projects have been implemented and are either finalised or close to finalisation.

6. For the MRO power station, CSIRO has entered into a power supply agreement with industry partner Horizon Power. The power management strategy is still under development. However, the overall strategy is to maximise the use of renewable energy and minimise diesel consumption.