

**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 energy

**REFERENCE:** Written Question – Senator Carr

**QUESTION No.:** SI-69

1. What are the power requirements for the SKA project in Western Australia - particularly the Pawsey Centre and the Murchison Observatory? Are estimates of 11MW together for ASKAP, at around \$3m per annum accurate?
2. Will the power requirements for the project once completed be up to 100 times higher?
4. Is there an update on the power consumption requirements?
5. What sources of energy are being planned for ASKAP and the SKA?
6. Is there sufficient power generation capacity on the WA power grid sufficient to meet the needs of this project, plus the normal domestic and commercial power needs of Western Australia?

**ANSWER**

1. The current power consumption at the Murchison Radio-astronomy Observatory (MRO) is of the order of 1 MW. ASKAP uses approximately 90 per cent of this.

SKA Phase 1 at the MRO is currently expected to use approximately 3 MW. An early estimate of the cost of providing this power is €5.1m a year, or approximately \$7.5m a year.

The Pawsey Supercomputing Centre currently consumes less than 1 MW. The SKA Organisation is yet to allocate a power budget for its computing needs, but indicatively it should be around 3 MW. An early estimate of the cost of purchasing this power is €1.1m a year, or approximately \$1.6m a year.

Note that the energy costs for SKA Phase 1 will be shared by the project partners through their contributions to the SKA operations budget.

2. As noted above, power consumption by SKA Phase 1 will be approximately three times larger than current consumption. The power requirement for a possible SKA Phase 2 is unclear at this point.
4. The power requirements noted above are the best current estimates from June 2016 engineering studies.
5. ASKAP is being powered by a hybrid diesel and solar photovoltaic and lithium-ion battery energy storage system (also see answer to SI-70). For the SKA, it is currently expected that another solar-diesel hybrid generation system and battery storage facility will be constructed.

6. It is not economically feasible to provide grid power to the MRO. Power provision therefore has to be via a standalone facility. The power required by the Pawsey Supercomputing Centre in Perth in the SKA era is modest by city standards and will not impose a significant additional load on the grid.