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Introduction

1.1 Weather and climate forecasting is vitally important to Australia's economic, environmental and social well-being and prosperity.

1.2 Weather and climate forecasting, at time scales from hours to days to seasons, influences many decisions made daily by all Australians.

1.3 Long-term or seasonal forecasts can influence major decisions in the agricultural sector, such as when or whether to plant particular crops. Planning for emergency management also relies on accurate seasonal forecasts.

1.4 A need has been identified for an increase in reliability of seasonal forecasts to better inform decisions made by landholders and other businesses and individuals across the country.

1.5 It is hoped the measures outlined in this report will boost Australia's capacity to provide suitable and meaningful seasonal forecasting products.

Background to the inquiry

1.6 The Committee agreed on 18 March 2009 to conduct an inquiry into long-term meteorological forecasting in Australia. The inquiry was referred to the Committee by Senator the Hon Kim Carr, the Australian Government Minister for Innovation, Industry, Science and Research.

1.7   The Terms of Reference called for the Committee to inquire into long-term meteorological forecasting in Australia with particular reference to:

- The efficacy of current climate modelling methods and techniques and long-term meteorological prediction systems;

- Innovation in long-term meteorological forecasting methods and technology;

- The impact of accurate measurement of inter-seasonal climate variability on decision-making processes for agricultural production and other sectors such as tourism;

- Potential benefits and applications for emergency response to natural disasters, such as bushfire, flood, cyclone, hail, and tsunami, in Australia and in neighbouring countries; and

- Strategies, systems and research overseas that could contribute to Australia's innovation in this area.

1.8   The inquiry was advertised in the *Australian Financial Review* on 21 March 2009.

1.9   The Committee sought submissions from Australian Government Agencies, weather information providers, researchers and peak bodies representing various industry sectors.

1.10   The Committee received 34 submissions and four supplementary submissions. The submissions are listed at Appendix A.

1.11   The Committee received 11 exhibits to the inquiry, which were provided in addition to written submissions, received during public hearings or sent to the Committee by other parties. The exhibits are listed in Appendix B.

1.12   The Committee held nine public hearings across Australia, in Canberra, Melbourne, Sydney, Adelaide and Perth. The Committee called 41 witnesses. The witnesses are listed in Appendix C.

Structure of the report

1.13   Chapter Two examines the way long-term weather forecasting is currently undertaken in Australia, who is responsible and who uses the forecasts.

1.14   Chapter Three examines the types of models used in long-term forecasting in Australia, the variables being considered by the models, Australia's

supercomputing facilities, the use of automated weather stations, and model outputs and products for end users.

1.15   Chapter Four examines a number of other issues including emergency services, staffing and training, career pathways for Bureau of Meteorological staff, resourcing and the need for a coordinated research agenda.