Modernisation of Australia’s Antarctic Program

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**Information Paper submitted by Australia**

Summary

In ATCM XLII/IP89 (2019) Australia reported on progress with commitments in the 2016 *Australian Antarctic Strategy and 20 Year Action Plan* to modernise the Australian Antarctic Program.

This paper provides updates on progress with key modernisation activities outlined within the Strategy and Action Plan. The objectives and provisions of the Environmental Protocol, including environmental impact assessment requirements, are incorporated into the management of these projects. Information Paper 52 provides an update on developments with Australia’s Antarctic Science Program, which continues to benefit significantly from national and international research and operational collaborations.

A key initiative that has commenced is planning activities for a proposal to construct and operate a new aerodrome near Davis research station in the Vestfold Hills, East Antarctica (the Davis Aerodrome Project). Planning activities include progressing the environmental impact assessments and approvals required for the Davis Aerodrome Project to proceed. Australia would be pleased to provide further information, and discuss opportunities for international collaboration. Online consultation sessions are planned and details will be circulated separately to Parties, Observers and Experts.

Introduction

The 2016 *Australian Antarctic Strategy and 20 Year Action Plan* sets out Australia’s vision for future engagement in Antarctica, including commitments and actions to future-proof the Australian Antarctic Program and enhance Australia’s Antarctic scientific capabilities. Australia is committed to continuing its strong support for the Antarctic Treaty system, delivering world-class science, and running its Antarctic operations safely and efficiently.

Further information about the *Australian Antarctic Strategy and 20 Year Action Plan* is available from the [Australian Antarctic Division’s website.](https://www.antarctica.gov.au/about-us/antarctic-strategy-and-action-plan/)

New Antarctic Research Vessel

A key deliverable in the *Australian Antarctic Strategy and 20 Year Action Plan* is the new Antarctic icebreaker, RSV *Nuyina*. The vessel will provide a state-of-the-art capability to conduct multidisciplinary science, both in sea ice and open water. It will also be the main lifeline for delivering essential personnel, cargo and equipment to and from Australia’s Antarctic and sub-Antarctic research stations.

The first steel was cut at Damen Shipyards Galati in Romania in May 2017, marking the formal commencement of the construction process. While the progress of the project has been significantly impacted by the COVID-19 pandemic, substantial progress has been achieved since November 2020 with the successful completion of the first two sea acceptance trials voyages in the North Sea and the Bay of Biscay. Underwater acoustic radiated noise performance tests have also been successfully completed in the fjords of Norway.

Following arrival of *Nuyina* in its home port of Hobart later in 2021, the primary focus of activities will be to ensure operational readiness of the vessel and crew to conduct station resupply activities, anticipated for the 2021/22 season. *Nuyina* will undergo a program of scientific research operational commissioning over the first two seasons of operations, with the first full-scale research voyages planned for the 2023/24 shipping season.

Further information about the *Nuyina* is available from the [Australian Antarctic Division’s website.](https://www.antarctica.gov.au/antarctic-operations/travel-and-logistics/ships/icebreaker/)

Un barco en el agua

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Figure 1 RSV Nuyina arriving at Vlissingen, the Netherlands, August 2020 (Photo: Flying Fishbone (AAD))

Enhanced traverse capability

Australia is committed to restoring and enhancing traverse and mobile station capabilities. Under the Traverse and Island Station Project, the intention is to operate at ranges beyond 1000 kilometres within inland East Antarctica.

The Traverse and Inland Station Project was developed to support the scientific and operational requirements of the Australian Antarctic Program for the next 20 years, through the delivery of a mobile research station and associated equipment. These capabilities are modular in design, to interface with the RSV *Nuyina*. This will allow delivery to all Antarctic stations for onward deployment to other remote areas, which will advance scientific research opportunities.

The initial focus of the renewed and enhanced traverse capability is to support Australia’s involvement in a collaborative project, to recover an ice core with a million year climate history. Drilling for the million year ice core will take place at a site named Little Dome C, approximately 30 km south of Concordia station. Drilling is expected to occur over four or five seasons, depending on the weather and other conditions.

The traverse capability is now approaching completion with key machinery and equipment delivered to Australia’s Casey research station in early 2020 and 2021. This includes the delivery of tractors and snow groomers which will be used to prepare the route for the traverse. The traverse route will start from Casey research station and will be 1200 km long. The proposed route to Little Dome C is still being assessed and is anticipated to be confirmed over the next season, with the first test planned to be undertaken around February 2022.

Construction of the mobile research station has been undertaken in Australia and is almost complete. The structure is modular and will likely be deployed to Casey research station within the 2021/22 season for mobilisation before it starts the 1200 km traverse route to site the following season.

A number of bespoke traverse vans have been designed and will be delivered next season. These vans will provide the traverse team with a safe environment to rest at the end of the working days whilst travelling to site.

Further information about the Traverse and Inland Station Project is available from the [Australian Antarctic Division’s website.](https://www.antarctica.gov.au/science/climate-processes-and-change/antarctic-palaeoclimate/million-year-ice-core/inland-traverse/)

Una camioneta llena de agua

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Figure 2 Tractor that will be used for the traverse to Little Dome C to support drilling for a million year ice core, February 2020 (Photo: Christopher Burns (AAD))

Modernising Antarctic research stations

In ATCM XLII/IP089 Australia reported that it was investigating options for refurbishing or rebuilding its Antarctic research stations and associated infrastructure, including the development of master plans for stations and major facilities.

The *Australian Antarctic Strategy and 20 Year Action Plan* outlines Australia’s commitment to develop modern and flexible research infrastructure, and to consider options for more efficient and flexible use of existing stations. The station modernisation program will enhance Australia’s science support capabilities with research stations and supporting infrastructure that can cater to Australia’s long term scientific objectives and operational needs.

Master plans are in development for Australia’s Davis, Mawson and Casey research stations, and for the seasonal Wilkins Aerodrome, and will outline new infrastructure works, predicted station capacity requirements and an asset renewal and replacement program.

In 2020 the Australian Antarctic Division commenced planning for the modernisation of Australia’s Davis research station, which is the primary hub for Australian Antarctic Program activities in East Antarctica. A draft Master Plan has been developed and the final Master Plan for Davis research station is intended for completion in 2021. It aims to address the challenges of living and working in Antarctica, whilst delivering sustainable, world-class facilities to support Antarctic science and operations.

Further information about the Davis research station is available from the [Australian Antarctic Division’s website](https://www.antarctica.gov.au/news/2020/modernisation-planning-begins-for-antarctic-stations/).

Un barco en la nieve

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Figure 3 Davis research station early concept, November 2020 (Photo: Hugh Broughton Architects/AAD)

***Davis Aerodrome Project***

In ATCM XLII/IP089 Australia reported on progress towards establishing year-round aviation access capability in East Antarctica (the Davis Aerodrome Project).

The Davis Aerodrome Project would provide a step up in the aviation capability available to the Australian Antarctic Program and other national Antarctic programs that Australia works closely with in East Antarctica.

Three field seasons of geotechnical and environmental investigations have been undertaken to identify the proposed aerodrome site, approximately 4.5 kilometres from Davis research station in the Vestfold Hills, East Antarctica, and to inform the required environmental impact assessment.

A draft Comprehensive Environmental Evaluation (CEE) is being prepared to assess the proposal to construct and operate the aerodrome. Further details are provided in Information Paper 102, submitted to CEP XXIII.

Australia is planning a series of online consultation sessions to provide further information about the Davis Aerodrome Project and will separately circulate details to Parties, Observers and Experts.

More details about the Davis Aerodrome Project are available on the [Australian Antarctic Division’s website.](https://www.antarctica.gov.au/antarctic-operations/travel-and-logistics/aviation/davis-aerodrome/environmental-assessment/)

Un grupo de personas en la arena

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Figure 4 Surveyors in the Vestfold Hills (Photo: Aron Gavin)