

UPDATES ABOUT THE PROJECT OF A GRAVEL RUNWAY NEAR MARIO ZUCHELLI STATION (ITA)

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ENEA - Italian National Agency for New Technologies, Energy and Sustainable Economic Development

1. Overview

The PNRA (Italian *National Antarctic Research Program*) in order to operate intercontinental transportation of personnel, instruments and freights, relies on two transportation methods: an Hercules aircraft that uses the ice runway yearly constructed on the fast ice facing the Italian Station “M. Zucchelli” and a multipurpose ice class ship.

During last years, the significant reduction of the period of availability of fast ice runway has forced the Italian Program to increase the frequency of use of air transport facilities operated by other nations: this solution negatively affects activities and resources of other Antarctic Programs, while reduces autonomy and therefore efficiency of our activities.

The necessity to face this drift of resources, coupled with the need to contain the costs of the Italian Program to the benefit of research activities, led to search a long term solution, identified in the opportunity to permanently use a gravel runway in the vicinity of the Italian Station.

This new infrastructure, besides allowing a more reliable and cost effective management of the scientific and logistic operations of Italian Program, will increase safety and cooperation with neighbouring Antarctic Programs.

Since 2012, through the submission of Information Papers to country members of Antarctic Treaty in the context of the ATCM (*Antarctic Treaty Consultative Meeting*), Italy informed the Antarctic community about the intention to realize this infrastructure and the

results of the first investigations necessary to finalize the feasibility study and the environmental impact analysis.

The results of studies, evaluations and investigations conducted till now have been collected in the Draft CEE (*Comprehensive Environmental Evaluation*) that will be presented to the next XXXVIII ATCM (Sofia (BG), June 2015), with the aim to update the Parties about the topic and encourage them to give advices that may be incorporated in the final version of the document.

2. Meteorology of the site

Within the framework of the feasibility study of the gravel runway, Meteorology is definitely a significant aspect: for this reason in February 2013 five new automatic weather stations dedicated to site monitoring were installed.

Data collected by these stations has been analysed and compared with those collected by automatic weather stations belonging to the Italian Meteo-Climatological Antarctic Observatory and operating in the vicinity since more than twenty years ago: data confirm the general climatological behaviour of the area, while showing that the local wind field has a slightly different behaviour in a particular period of the year.

It has been also performed a preliminary and theoretical analysis of possible wind shear phenomena to be deepened and validated by the study of the wind field that is currently under development as part of a technical-scientific cooperation project with

the CNMCA (Italian *National Centre for Meteorology and Climatology*) of Italian Air Force.

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