

Economics Legislation Committee
ANSWERS TO QUESTIONS ON NOTICE
Industry, Innovation and Science Portfolio
Supplementary Budget Estimates Hearing 2015-16
22 October 2015

AGENCY: COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANISATION

TOPIC: RV *Investigator* – Chevron contract

REFERENCE: Question on Notice (Hansard, 22 October 2015, page 52)

QUESTION No.: SI-12

Senator WHISH-WILSON: The minister acknowledges that in his release. He also says: It will also improve understanding of the ecology and provide baseline data to inform environmental assessments.

And, of course, the release talks about looking at prospectivity for oil and gas exploration in the Great Australian Bight. I would have thought a big company like Chevron is interested in the prospectivity of drilling for oil and gas and exploration to look at the risks and dimensions around that. If, as the minister refers to, this collaboration is informing environmental assessments, are they environmental assessments for Chevron so they can go oil and gas drilling?

Dr D Williams: No, we are on a mission where CSIRO will crew the vessel. The data will be collected against a plan. All that data in the time scale of 12 months will be made publicly available. Chevron will be able to do their own analysis on the data, CSIRO will be available to do the analysis and any group in the country—or, indeed, in the world—will be able to access those data and do their own analysis.

Senator WHISH-WILSON: What is the importance of that data? I can see why Chevron would want it, but what about the taxpayer who is paying for the boat?

Dr D Williams: It is about understanding the marine environment around Australia and having a better understanding of the ecology of the Great Australian Bight.

Senator WHISH-WILSON: My understanding—and congratulations to Senator Carr and his government for delivering it on time and on budget—is that the boat was significantly oversubscribed—

Senator KIM CARR: No, that is not right.

Senator WHISH-WILSON: in terms of science time, mostly with long-term collaborative projects. Could you give us an idea of the kinds of projects that CSIRO are conducting and whether they are parts of long-term projects.

Dr D Williams: On this particular mission?

Senator WHISH-WILSON: On this particular 39 days with Chevron.

Dr D Williams: Yes, we can take it on notice and send you a descriptor of the science involved. My colleague, who is also involved in this work, can give a bit of information today.

ANSWER

Below is a description of the Chevron Great Australian Bight Deepwater Marine Program being conducted by CSIRO. The data, new technologies and approaches from this program which is planned for completion in 2017 will inform longer term research.

The objectives of the program are:

- to increase the knowledge of the sedimentary evolution of the Bight Basin;
- seafloor characterisation of the seamounts, canyons and hydrocarbon seeps; and
- environmental and biological assessment of the benthic biota.

The multi-faceted research program is structured into five parallel projects:

- Project 1: Deepwater marine surveys;
- Project 2: Source rock evaluation;
- Project 3: Hydrocarbon seeps;
- Project 4: Benthic biota of volcanic seamounts, seeps and canyons; and
- Project 5: Seafloor volcanic distribution and characterisation.

Project 1 is focused on collection of data and samples via the marine survey, and the remainder of the projects will involve analysis and interpretation of the samples collected during the survey.

There are two research surveys planned to characterise and sample areas of interest in the deep water of the GAB in progressively higher detail. The first survey is currently underway, with a potential follow-up voyage in 2016 planned pending results of the first survey.

The first survey is focused on defining high resolution survey areas, and then using a deepwater Autonomous Underwater Vehicle (AUV) to conduct high resolution mapping to define and characterise the target areas for subsequent comprehensive sampling.

Shallow subsurface, seafloor and water column properties will also be documented and 2D and 3D mapping packages developed for interpretation purposes for each project.

Activities being undertaken on the survey will include:

- high resolution mapping using multi-beam, side scan sonar and sub-bottom profiler to build a detailed picture of the seafloor;
- sampling of the seafloor area including shallow cores, water tests and use of hydrocarbon sensors;
- underwater high resolution imaging and sampling to describe the habitats and biodiversity of the benthic biota;
- conductivity, temperature and depth profiling incorporating a large number of chemical and acoustic sensors;
- comprehensive data acquisition, logging and reporting; and
- Autonomous Underwater Vehicle (AUV) data collection to conduct high resolution mapping to define and characterise the target areas for sampling.

This information will improve understanding of the petroleum geology of the Bight, and provide environmental baseline data across the basin. These are key steps for any exploration evaluation of a frontier area. Ultimately, better knowledge of the petroleum system and petroleum prospectivity will reduce exploration risks and costs.

This project is highly multidisciplinary, incorporating diverse skills and expertise from geophysics through to microbiology. CSIRO, in collaboration with other institutions across Australia, is uniquely positioned to tackle the research challenges of this project.

Throughout the program, and particularly around the survey, new technologies and approaches will be used to enhance research outcomes. This includes the deployment of a number of unique marine and shipboard systems such as:

- an Integrated Coring Platform which integrates both chemical and photographic systems to a multicorer sampling system; and
- a deep tow high resolution camera system that operates to 5,500m below the ocean's surface.

Data and images will be transferred on board in real-time, enabling the team to make rapid decisions about whether, and what, to sample. The suite of equipment delivers a host of complementary data, giving an accurate view of the seafloor and providing the best opportunity for precise sampling.

Once samples and data are collected they will be analysed using conventional and novel approaches to extract the maximum amount of information. This is important when the numbers of samples in the deep water of the basin are low, and the acquisition of the samples is challenging.