

In defence of nuclear subs

This year's defence white paper declared the federal government had "ruled out nuclear propulsion" for the 12 new submarines to be acquired in what will be Australia's longest, largest and costliest single defence project.

There are good short-term financial and technical reasons for this decision but there are also compelling reasons why the government should not foreclose on the option of moving to acquire nuclear-powered submarines during the 30-year life of the \$25 billion project.

Now that the government has called for requests for tender to complete a "domestic design study" for the submarines, it should reconsider the possibility that some to be delivered by about 2040 could be nuclear powered.

There are four reasons for this: first, nuclear submarines are superior to diesel-electric submarines; second, acquiring them would represent a major technological advance; third, other significant powers (including China, Russia, India, France and the United States) have or are acquiring nuclear submarines; and fourth, a potent submarine force, in the words of the Australian National University's Hugh White, "offers massive asymmetrical advantages to relatively weak naval powers against strong ones".

Given that powerful submarines are the key to sea-denial against adversaries, and given Australia's uncertain long-term regional strategic environment and expected decline in regional strategic weight, this country needs every asymmetrical advantage it can get.

It would be difficult and expensive for Australia to build or maintain nuclear-powered submarines without the supporting infrastructure and technical expertise of a domestic nuclear power

Australia should not rule out acquiring nuclear-powered submarines in the next 30 years, writes **Geoffrey Barker**.

industry. It would also be expensive to train the specialised crews required.

But Australia is a major producer and exporter of uranium. Moreover, it seems reasonable to expect that Australians will some time in the next 30 years accept that nuclear power generation is a necessary part of the solution to rising greenhouse gas emissions. As Australia moves towards nuclear power generation it will develop skills and technologies that help to support nuclear submarines.

The first of Australia's 12 new submarines is expected to be ready for sea trials in 2024; the last is likely to be delivered after 2040. The first submarines will be advanced diesel-electric boats with air-independent propulsion systems and will be significant improvements on the Collins Class submarines.

But at some time between 2024 and 2040, especially if Australia develops a nuclear power industry, it should become more feasible to design and to equip submarines with nuclear power plants.

The range and endurance of those submarines would be limited only by the amount of food they could carry and the need to rest crews. They would be faster, deeper, quieter and more lethal than conventional submarines.

Moving to acquire nuclear submarines during the long acquisition phase would not be easy — even with a nuclear industry and increasing numbers of highly trained civilian and naval nuclear power experts. It is comparatively straightforward to

develop or to acquire conventional submarine technology on global markets. Nuclear submarines are much more complex and are not as easily developed or acquired.

Moreover, the high cost of building and maintaining even a few nuclear submarines would exacerbate strains between surface and submarine sailors in the navy. Surface sailors tend to see submariners as motley characters who receive an inordinate share of the naval budget. Submariners deride surface sailors as "skimmers" and "targets". Those tensions have to be resolved.

But Australia has successfully built conventional Collins Class submarines and has reportedly received indications that South Korea, a leading shipbuilder currently building nine advanced conventional Type 214 submarines for its navy, might be interested in a construction role in Australia's project. (The white paper says only that the new submarines are to be assembled in South Australia, leaving open possible module construction elsewhere).

If Australia looked eventually to acquiring nuclear submarines it could seek expertise from the UK and US, which have nuclear submarines and with whom Australia has long defence industry and security links. There are also strong French interests in the Australian defence industry, and France is building a new Barracuda Class of nuclear attack submarines.

So far only the dear old Navy League has loudly advocated nuclear submarines, but there are options within the 30-year project timeline. Australia should rule nothing out at this early stage.

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