

# Thales developing new 6.8mm close combat weapon



## LAND 159 TRANCHE 2

**In collaboration with** Army Headquarters (AHQ), Thales Australia has revealed to *DTR* that it is developing a next-generation individual weapon chambered in 6.8mm calibre.

With emerging threats and concerns over the lethality of the 5.56mm round as the drivers, AHQ commissioned Thales to undertake two desk-top feasibility studies: one focussed on producing a higher pressure round chambered in a 7.62mm NATO size cartridge, the other which investigated the ability of the barrel, chamber and bolt assembly to handle the associated increased chamber pressures.

Presented to AHQ in Q3 2020, both studies concluded that it is feasible to develop a weapon incorporating these attributes to address the emerging

threats and the 5.56mm round's shortcomings and form the core of what AHQ calls the Close Combat Family of Weapons (CCFOW). AHQ proceeded to work up the business case to develop a 6.8mm individual weapon, with Army Minors funding allocated to seed a domestic development program that would produce an Australian equivalent to the US Army's 6.8mm Next Generation Squad Weapon (NGSW). The NGSW program aims to provide close combat warfighters with a replacement for the M4A1 assault rifle and the M249 Squad Automatic Weapon, both 5.56mm weapons.

The objective of the development work Thales is undertaking at Lithgow is to produce an Australian designed and manufactured weapon and ammunition package that can perform comparably against the preferred

**ABOVE: A 3D printed mock-up of the new 6.8mm assault rifle being developed by Thales Australia under a CCFOW contract with Army Headquarters.** Image: *DTR*

NGSW design. The new weapon, Thales told *DTR*, would initially equip close combatants in infantry, armour and artillery units, while soldiers in support roles would continue to operate the F90 in 5.56mm calibre.

As part of the CCFOW work, Thales is developing a single-piece 6.8mm cartridge made from a material "more advanced than traditional brass" and better able to cope with higher pressures. The gun will be of bullpup configuration with specifications drawn

from the NGSW program, including a maximum length of 965mm, maximum weight of 4.1kg minus the magazine and an integrated suppressor capability. These activities are currently in the detailed design stage.

In accordance with AHQ intent, the new assault rifle will have user interfaces not dissimilar to the in-service EF88 (F90), with new features to include an ambidextrous cocking handle and advanced trigger unit. Thales is also addressing the issue around fixed length of pull. The AHQ contract requires Thales to have the rifle sufficiently mature such that it can conduct initial user trials in Q3 2023.

Two main types of 6.8mm rounds will be developed, according to Thales Australia's Programs & Services General Manager Matthew Duquemin: a high-performance round and an armour-piercing round. Thales has also been asked to investigate the

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feasibility of a 'super-shot' round.

“Army Headquarters wants to see the local development of a domestic

6.8mm weapon system that will be able to compete against the selected NGSW solution under Tranche 2 of Land 159,” Mr Duquemin said.

Thales expects to fire the first new 6.8mm rounds through the new weapon this month.

The contract also calls for Thales to develop a magazine-fed support weapon version of the assault rifle, potentially fitted with a top-mounted 50-round drum magazine. This weapon will have a combat rate-of-fire of 90-120rds per minute sustained for longer than the assault rifle version.

The company is also developing a training rifle chambered in 7.62mm NATO as a surrogate training rifle to reduce cost, retaining the 6.8mm weapon for operations. This will include a 7.62mm frangible round which is less damaging to training range infrastructure and facilities.

**- Ian Bostock**

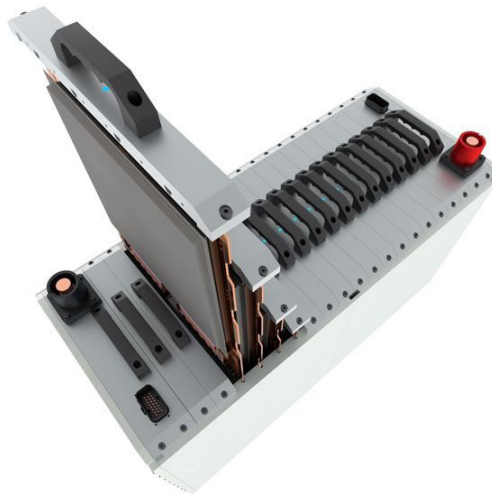
## 3ME charged up to electrify vehicle fleets

**New South Wales** heavy vehicle battery manufacturer 3ME Technology will utilise private backing to further its development of lithium-ion (Li-ion) battery systems for military vehicle applications.

Already producing batteries for large industrial vehicles in the mining sector, 3ME Technology has received a AUD\$15 million investment from the Australian Business Growth Fund (ABGF) – the first investment to date by ABGF – and another AUD\$5 million from the Clean Energy Finance Corporation (CEFC).

3ME Technology energy-dense Li-ion battery systems replace the diesel-powered engines which predominantly power heavy vehicles used in mining and defence.

3ME Technology Chief Executive Officer Justin Bain said on 7 October that the company's military vehicle batteries are designed specifically to endure military use and harsh environments. They can be retrofitted into



**ABOVE: The Bladevolt lithium-ion battery system is ideally suited to retrofitting into military vehicles.** Image: 3ME Technology

a range of vehicles from small utilities to very large loaders.

“We are delighted to have the funding support of the ABGF and CEFC. This combined AUD\$20 million investment will allow us to accelerate

sovereign onshore battery manufacturing, increase our workforce and invest in expanding our battery system operations centre,” Mr Bain said.

3ME Technology's Bladevolt battery system has been successfully retrofitted into a normally diesel-powered 20-tonne underground mining loader. According to company, the same battery system is a “highly suitable replacement in a range of diesel-powered military vehicles” due to its reduced thermal and acoustic signatures. Another advantage of the Bladevolt system is its potential for integration with onboard sensors and communications systems.

The Bladevolt battery system also incorporates advanced safety features to prevent thermal runaway risks. These include real-time active monitoring and remote control at the individual cell level, enabling underperforming cells to be shut down remotely if necessary.

**- Ian Bostock**