

Cummins

ISSUE 2, 2024

ASIA PACIFIC

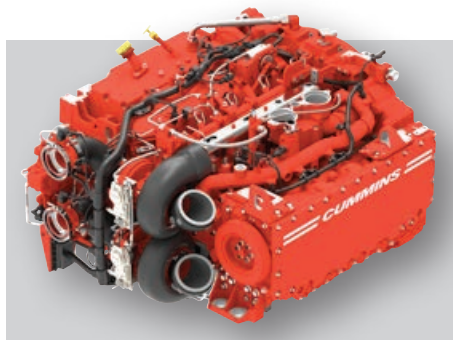
MAGAZINE

CLOUD BOOM

Powered up Cummins in hyperscale data centre boom



WHITEHAVEN SLASHES COSTS:
Repowers make a difference



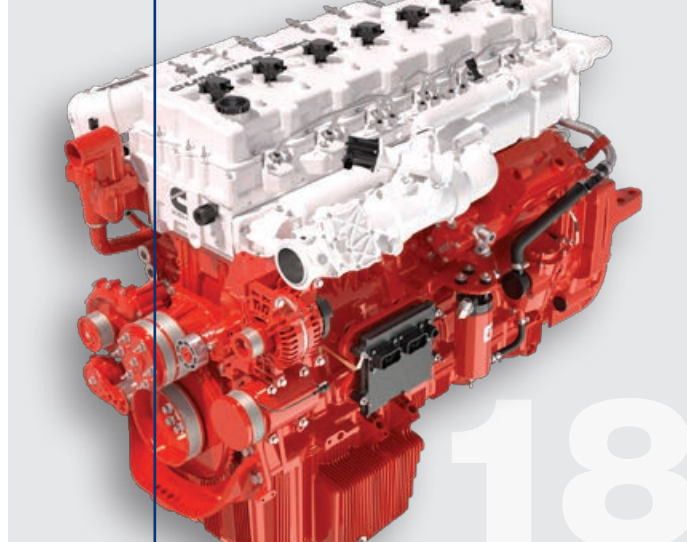
ACE UP CUMMINS' SLEEVE:
1000 hp engine of the future



PERFECT FOR PARRY:
Family company a quiet achiever



New hyperscale data centres in South Korea (Naver, p.14) and the Philippines (ePLDT, p32) rely on Cummins generator sets for critical protection power.



A record 81 new apprentices welcomed to Cummins

As we power into 2024, the great news to start the year is that we have welcomed 81 apprentices to the Cummins family. Significantly, 27 women are starting their careers with Cummins, and as you'll read in this issue, this is the highest ever intake of female apprentices in Australia.

A tougher stance is needed in the fight against counterfeit parts, and we reveal that Cummins is now working with Australian Border Force to identify and stop the importation of these unsafe and poor quality parts entering the country. The reality is that counterfeiters are becoming so sophisticated that their parts look like the original, even down to their labelling and packaging.

Globally, Cummins is immersed in the data centre industry, having long-standing partnerships with the key players in what is one of the fastest-growing industries in the history of business. In this issue we feature two data centre giants in Asia, ePLDT in the Philippines and Naver in South Korea. Naver recently opened its first hyperscale data centre which will eventually see the installation of a large number of Cummins QSK95 generator sets.

Four well-known customers in the trucking industry – New Zealand company Uhlenberg Haulage, Parry Logistics, Brian Smith Timber Transport and Cavanagh Stockmaster – feature in this issue and they discuss the importance of Cummins' products and service support in the successful running of their businesses. Outback Truckers TV star Steve Grahame also talks about his repowered Kenworth C501.

For those of you interested in advanced diesel engine technology we have two must read articles. The great news is that Cummins' 1000 hp Advanced Combat Engine (ACE) – a four-cylinder, two stroke, opposed piston powerhouse – will be displayed at Australia's 2024 Land Forces Exposition in Melbourne in September. We also feature the X15H hydrogen internal combustion engine from Cummins' 15-litre fuel agnostic platform, which is gaining global attention with its use of green hydrogen; this engine will play a key role in decarbonising both on-and off-highway applications with diesel-like power and torque.

On the mining front, Whitehaven Coal's decision to repower five Hitachi haul trucks with 2000 hp Cummins QSK50 engines is examined in detail, as is the Right First Time mindset at Cummins' two high horsepower Master Rebuild Centres in Australia.

A common thread through many of the articles in this issue is the focus of our end-user customers on increased productivity and lower total cost of operation over the life of their equipment. Investing in our customers' success with innovative and dependable power solutions and quality service support is the commitment we make – especially at this important juncture when we begin to look at groundbreaking technologies in this new age of clean and sustainable power.



Peter Jensen-Muir
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Cummins is a key supplier to family business Parry Logistics, a quiet achiever that celebrated its 65th anniversary last year.

Perfect for Parry

While Tamworth is well-known as the 'Country Music Capital of Australia', an amazing historical fact is that the city is also the 'First Town of Lights', being the first place in Australia to use electric street lights in 1888.

The lights still shine brightly in this bustling inland city in north-western NSW, as do shining lights in the trucking industry like Parry Logistics along with numerous other outfits.

Like many family transport businesses, Parry Logistics has forged its reputation as a successful company from modest beginnings.

Greg Parry isn't known for spruiking his business in the public arena. He's a quiet achiever who, without hesitation, praises his "dedicated, loyal staff" for being the key to his success.

The Parry business celebrated its 65th anniversary last year, a business that was founded in the small town of Werris Creek by Don Parry – Greg's father – in 1958.

Werris Creek, 45 km south-west of Tamworth, was home to the Parry family business until 2002 when Greg, who took over the reins in 1998 after leaving school at the age of 15 to work for his father, made the decision to set up HQ in Tamworth.

"That was a pivotal move," he recalls today. "We moved to Tamworth with only five trucks and seven trailers."

Immaculate fleet

Today, the Parry fleet presents a vastly different picture, comprising 60 trucks – 40 of which are linehaul Kenworths – and 115

trailers, and it's a fleet that's noticeable on the highways for its immaculate appearance.

"When I walk around the yard and see how well the trucks are looked after I do take a lot of pride in what we've achieved," says Parry, whose son Brandon is yard manager. "We have dedicated long-term staff here and they're the reason for our success."

"Our operations manager, Dean, started here when he was 18 and next year is celebrating his 20th year with us. We have 20 staff who have done over 10 years with us. That's unheard of in the transport industry today."

Relationships with customers and equipment suppliers are vital to Greg Parry. "We get great support from Cummins in Tamworth. We have a long-term relationship with (on-highway business manager) Dave Paddison and it's good that we have personal contact with (branch manager) Cambell Carmichael."

"To Cambell's credit he has turned the branch around in recent years. It's all about support. Other suppliers have been and gone while Cummins has stuck in the town through thick and thin and has now invested in a new branch facility."

Parry has his own workshop with six technicians who carry out routine servicing and trailer repairs while any major engine work goes to Cummins. "Cummins recently swapped out an engine for us within 24 hours...you can't beat that kind of support."

660 hp Cummins looming

Parry is showing keen interest in the next generation 15-litre Cummins, the X15D, that is looming on the horizon with a 660 hp rating and massive peak torque of 2360 lb ft. One of the biggest news stories of the 2023 Brisbane Truck Show was the unveiling of the 660 hp Cummins in DAF's flagship XG+ cabover which is set to hit Australian roads in 2024.

"I'll definitely be looking at the DAF with the Cummins," he reveals. "We have three DAF rigids and they're impressive trucks. We're currently running B-triples at 96



Greg Parry (centre) with Cummins on-highway business manager David Paddison (left) and Cummins branch manager Cambell Carmichael.

tonnes on the Newell Highway to Brisbane, Moree and Melbourne and the 660 hp DAF could be well suited to this."

The current Cummins X15 rating in the company's Kenworth fleet is at the top-level 600 hp/2050 lb ft. "It gives us the best fuel consumption with 80 percent of our B-double work being on the New England Highway," he says, noting it is one of the toughest stretches of highway in the country.

While driver shortage is reported as a huge problem in the industry, Greg Parry is in a fortunate position. "We have a full house of drivers and a lot of enquiries from drivers looking for employment," he confirms. "Providing drivers with modern equipment is just part of the solution. Looking after them on a personal level and making sure they get back home with their families is the most important thing."

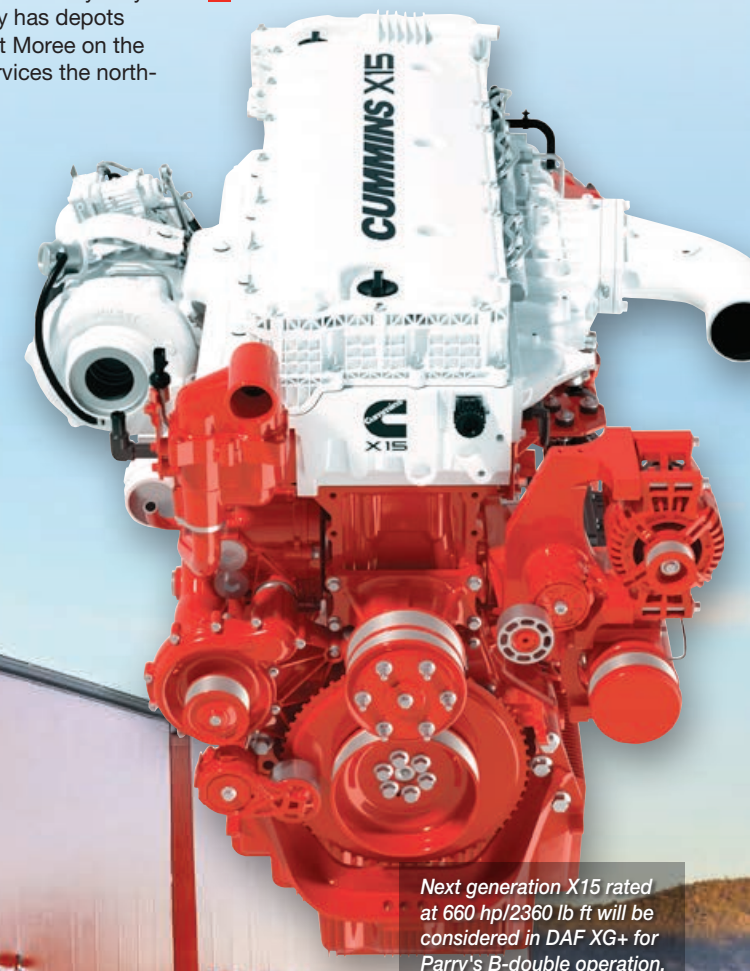
"We've got a few young drivers who are among our best employees. One of these is a woman, Courtnee, who is doing a brilliant job in a rigid truck. We're definitely looking for more female drivers."

With the company's B-double fleet operating mainly in the Brisbane-Sydney-Melbourne corridors, Parry has depots in these cities as well as at Moree on the Newell Highway which services the north-west region of NSW.

With Parry Logistics' business now stabilised after robust growth, especially during the COVID period, Greg Parry makes the revealing comment: "We've never been a company to go out and chase business. We've expanded primarily through word of mouth."

“When I walk around the yard and see how well the trucks are looked after I do take a lot of pride in what we've achieved.”

Exceptional customer service obviously underpins a business built on sensible goals and driven by a team of loyal employees who are acknowledged as being the key to the success of this quietly achieving company.



Next generation X15 rated at 660 hp/2360 lb ft will be considered in DAF XG+ for Parry's B-double operation.

B-triples are proving their worth in Parry operation.

“We get great support from Cummins in Tamworth.”

Whitehaven slashes costs with Cummins repowers

Reduced maintenance costs and quality service support are the key reasons Whitehaven Coal has repowered five Hitachi EH3500 haul trucks with 2000 hp Cummins QSK50 MCRS engines.

The original engines, from another manufacturer, were replaced in the EH3500s while Hitachi carried out a 32,000-hour refurbishment program on the trucks at its facility in Gunnedah, NSW. The repower project was completed in early 2024.

The repowered trucks, which have a gross weight rating of 322 tonnes carrying a 181-tonne payload, are working at Whitehaven Coal's Maules Creek mine in the New South Wales Gunnedah Basin, which has production approval for 13 Mt run-of-mine (ROM) coal per annum.

Whitehaven, noted for producing high quality thermal and metallurgical coal, has four operating mines in the Gunnedah Basin which achieved ROM production of 18.2 Mt in 2023. More than 100 high horsepower Cummins engines are involved in its three open-cut operations.

Whitehaven recently acquired two major Queensland coal mines from BHP – Daunia and Blackwater – in a multi-billion-dollar deal that will transform it into a leading supplier of metallurgical coal for export markets with pro-forma, ROM production of around 40 Mtpa.



▲ Scan here or click here for more info.

Cummins' involvement in the Maules Creek operation – currently Whitehaven's largest mine which shipped its first coal in 2015 – is significant with 61 engines in service, a mix of QSK50 MCRS and QSK60 MCRS powerhouses spanning 1944 to 2850 hp, all certified to Tier 2 emissions level.

They are powering a range of Hitachi equipment, including 45 ultra-class EH5000 haul trucks with a 296-tonne payload and five 800-tonne EX8000 excavators. Maules Creek is the first mine in the world to implement Hitachi's autonomous (driverless) haul truck system. Two autonomous Hitachi excavators are also operating at the mine.

Healthy relationship

"We've had a long, healthy relationship with Cummins," says Mark Irwin, Whitehaven's maintenance manager at Maules Creek, commenting on the reasons behind the repower project. "We're familiar with the Cummins product and we get high

quality support. So when the opportunity arose to increase the Cummins footprint at Maules Creek we jumped at it.

"We can log issues with Cummins and we're confident those issues will be addressed. There's a fair bit of comfort in that."

Total cost of ownership

When Cummins first got involved in the Maules Creek project, during the tender stage to supply engines, it was emphasised by Whitehaven Coal that the mine was a low-cost business model and that total cost of ownership and local service support were the critical elements.

To meet the life cycle cost requirement for the trucks, collaboration resulted in one engine change-out and one midlife being eliminated from the 90,000 to 100,000-hour life of the chassis.

All the engines at Maules Creek incorporate Cummins' high-pressure modular common rail fuel system (MCRS) technology for longer life-to-overhaul and reduced fuel consumption and emissions.

costs

High expectations

"We had high expectations from the start based on our conversations with Cummins and those expectations are being met," says Mark Irwin decisively.

He points out that the life-to-overhaul "starting point" for the QSK50 is 32,000 hours; experience at another mine site is that 35,000 hours can be "comfortably" achieved with the 50-litre, V16 Cummins in the EH3500.

Discussing life-to-overhaul of the QSK60 rated at 2850 hp in the 500-tonne EH5000 haul trucks, he reveals 32,000 hours are being achieved "comfortably" at Maules Creek, and that "we're exploring pushing that out further".

"We have to make sure these hours line up with the rest of our maintenance strategies. For example, we do a QSK60 change-out at 24,000 hours in the EX8000 excavators and that lines up with the second change-out of their hydraulic pumps for the life of the engine."

Minimal midlife component change-out is another major cost reduction benefit with the QSK50 and QSK60. The MCRS fuel injectors are achieving full engine life. "We have over two million hours' experience with our EH5000 fleet and in that time there has only been single digit injector replacement before life," Irwin reveals. "The MCRS injectors are extremely reliable."

Low-emission engines are a key requirement at the mine which operates under strict environmental standards. For that reason, all the Cummins engines are Tier 2 emissions compliant. A fuel consumption improvement in excess of 3% is calculated for the QSK50 over the engine it replaces in the EH3500, and this results in a significant greenhouse gas reduction for a truck doing 5,000 to 6,000 hours a year.

“We can log issues with Cummins and we're confident those issues will be addressed. There's a fair bit of comfort in that.”



Whitehaven maintenance manager at Maules Creek, Mark Irwin (right), with Cummins mining business manager Jason Linke.



Cummins QSK50 about to be installed in Hitachi EH3500.

Proactive with maintenance

Another key benefit of repowering with Cummins is the availability of Cummins' remote engine monitoring system, PrevenTech, which is connected to all Cummins-powered trucks and excavators at Whitehaven mines.

PrevenTech works by applying connectivity, algorithms and analytics to a machine's engine hardware, helping a mine identify and diagnose issues faster and more accurately. It works with Internet of Things (IoT) technology and global security standards.

Mark Irwin saw PrevenTech as a "logical step" for integration in the fleet while the system was being trialled at Maules Creek.

"During the trial period we only had 10 engines connected but still prevented a couple of potentially significant downtime events. The machines were diagnosed and then repaired in a short period so as not to interrupt production," he reveals.

"Anything that helps us trend data and get ahead of issues is important," he says. "We've gone from looking in the rear-view mirror to learn from the past, to looking forward and making informed decisions with the real time data we're getting from PrevenTech."

"In other words, we're now being more proactive, and less reactive, with our maintenance practices and that means reduced operational and maintenance costs."

Repowered EH3500 at Maules Creek.



“ There have been absolutely no issues with the work completed in repowering the trucks. ”

Whitehaven EH3500 haul truck undergoing refurbishment at Hitachi Gunnedah branch facility.

Collaboration shines with repower success

The successful repower of five Hitachi EH3500 haul trucks for Whitehaven Coal is the result of strong collaboration between the Cummins and Hitachi teams (see article, p.4-5).

The EH3500 trucks have been repowered with 2,000 hp Cummins QSK50 MCRS engines, replacing engines from another manufacturer, to provide Whitehaven with improved cost efficiencies.

The trucks are operating at Whitehaven's Maules Creek mine in the NSW Gunnedah Basin which has production approval for 13 Mt run-of-mine (ROM) coal per annum.

“The repower project is a first globally for Cummins and Hitachi in that there has been no previous QSK50 repower experience with the EH3500,” says Cambell Carmichael, branch manager of Cummins Tamworth which has headed up the repower project.

As a result, a significant parts list had to be compiled and some parts had to be special ordered on Hitachi Japan for the project.

The Cummins Tamworth and Hitachi Gunnedah teams have worked together closely to ensure the success of the project which has been carried out at Hitachi's branch facility in Gunnedah, around 45 km from the Maules Creek mine.

The repowers have coincided with a scheduled 33,000-hour refurbishment of the five EH3500 trucks, carried out over a six-month period. Each of the trucks has been out of service for around four weeks for the refurbishment/repower program.

The downtime has included decommissioning to get the trucks transported to Gunnedah. This has required removal of the tyres and rims, body, cab, and AC cabinet to get the machines to a specific dimension and then recommissioning back on site following the work in the Gunnedah workshop.

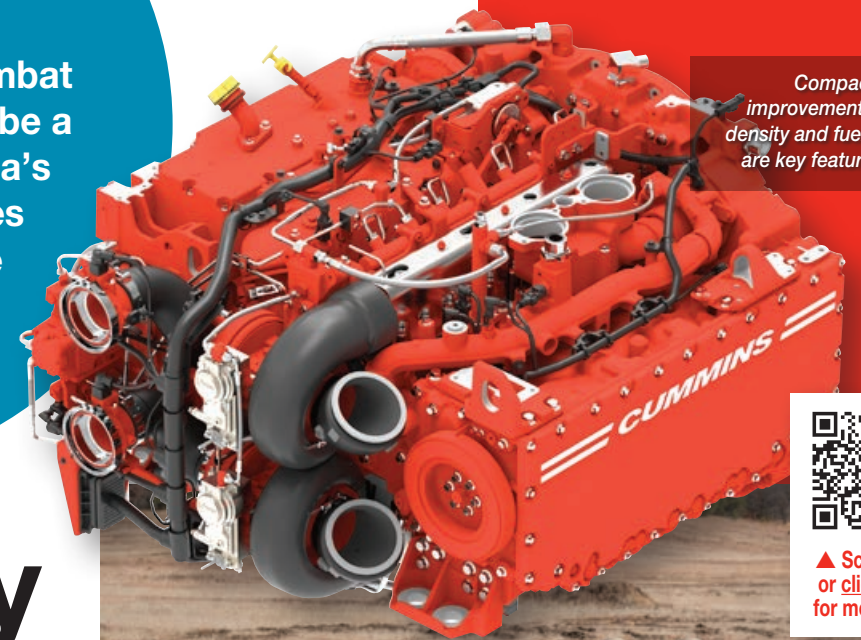
“The workshop was designed to accommodate the full range of Hitachi EH3500, EH4000 and EH5000 trucks over the full life cycle of Whitehaven's haul truck fleet,” says Tony Mingay, branch coordinator of Hitachi Gunnedah.

“There have been absolutely no issues around the work completed in repowering the trucks,” he asserts. “The big advantage with our Gunnedah facility is that we can do start-up and load bank testing to ensure there are no electrical gremlins.”

Whitehaven has an extensive fleet of Hitachi equipment at Maules Creek, including 45 ultra-class EH5000 haul trucks with a 296-tonne payload.



Cummins' Advanced Combat Engine (ACE) will be a highlight of Australia's 2024 Land Forces Exposition in Melbourne in September.



Compactness and improvements in power density and fuel efficiency are key features of ACE.



▲ Scan here or click here for more info.

US Army REVS UP high-tech Cummins tank engine



ACE is undergoing US Army testing in the Advanced Mobility Experimental Prototype (AMEP).

Cummins' 1000 hp Advanced Combat Engine (ACE) will make its debut at Australia's 2024 Land Forces Exposition in Melbourne from September 11-13.

Having recently undergone testing in the Advanced Mobility Experimental Prototype (AMEP) at the US Army proving grounds, ACE boasts a 14.3-litre displacement, 1000 hp, and peak torque of 2424 lb ft. This four-cylinder, two-stroke, opposed-piston diesel engine is equipped with eight pistons, as well as supercharging and turbocharging capabilities that eliminate the necessity for a valve train.

Advanced capabilities

While compactness is a key advantage of ACE – crucial for combat vehicles with their restricted installation space – the engine offers advanced capabilities not currently available. These include a 50% increase in power density, a 20% reduction in heat rejection, and a 13% improvement in fuel efficiency compared with today's best-in-class combat engines.

Initially developed as a four-cylinder unit, ACE boasts a modular design that enables expansion into a family of 3-cylinder and 6-cylinder horizontal and vertical configurations. This versatility allows for power delivery ranging from 750 to 1500 hp while maintaining many common components.

ACE is engineered for operation in full-desert conditions using all specified military fuels. Moreover, it is viewed as a potential facilitator for hybrid electric powertrains in the next generation combat vehicle.

Cummins, in collaboration with the US Army's Ground Vehicle Systems Centre and Achates Power, has been diligently working on fulfilling an \$87 million contract awarded by the US Army to complete ACE's development.

While ACE is primarily tailored for military applications, its adaptability extends to commercial uses requiring high power within confined spaces.

“ ACE offers advanced capabilities not currently available. ”

ACE shines in rigorous tests



Cummins' Advanced Combat Engine (ACE) has successfully passed a series of rigorous tests as part of the Advanced Mobility Experimental Prototype (AMEP) project.

From November 2023 to January 2024, the AMEP vehicle, powered by the 1000 hp ACE, underwent mobility and performance trials at the Yuma Proving Ground in Arizona under the supervision of the Army Test and Evaluation Command (ATEC).

The AMEP vehicle completed more than 280 hours and 400 miles of testing, including slaloms, step climbs, and angularity testing at slopes ranging up to 60%. The AMEP vehicle also outperformed the A4 Bradley vehicle in side-by-side acceleration and pivot testing.

The Bradley is powered by the 675 hp Cummins V903 engine.

Tougher stance needed in the fight against counterfeit parts.



Australian BORDER FORCE

CUMMINS CALLS IN AUSTRALIAN BORDER FORCE

Cummins is now working with Australian Border Force to identify and stop shipments of counterfeit parts entering the country.

Globally, Cummins encounters and fights against counterfeiting every day, warning of the dangers of using cheap, unsafe bogus parts.

"The magnitude of the problem in Australia is requiring Cummins to take a tougher stance against counterfeiters, and that means working closely with Australian Border Force," says Kyle Miller, Cummins' aftermarket business development manager for mining in the Asia Pacific region.

"Counterfeiters are becoming so sophisticated that their parts look like the original, even down to their labelling, packaging, barcodes and QR codes, and many consumers are misled into thinking they are buying the genuine article.

"The risk to customers is that the counterfeit parts don't meet Cummins' design standards, so buying these parts can lead to rapid wear, poor reliability, high fuel and oil consumption and even engine failure," he adds.

Crackdown in China

Over the last 12 years, Cummins has taken the fight to counterfeiters in China through the Cummins Brand Protection Committee which has wiped out thousands of illegal traders.

In 2022 alone, Cummins, with the strong support of law enforcement authorities in China, investigated and dealt with more than 90 online and offline cases of suspected trademark infringement and counterfeit parts in nearly 36 cities, seizing 520,000 counterfeit parts and packages with case value exceeding US\$3.93 million.

Interestingly, a US government report on "notorious markets" identified 39 online markets that reportedly engage in, or facilitate, substantial trademark counterfeiting or copyright piracy, including China's most popular chat app, WeChat, as "one of the largest platforms for counterfeit goods".

On the front line of Cummins' efforts to combat the counterfeit criminal activity in China is Baogang Jing, Senior Parts Marketing Leader.

"Cummins has been involved in the Chinese market for more than 40 years and has extensive market influence," he points out.

"We actively cooperate with China law enforcement and customs authorities to crack down on counterfeit parts in China and prevent the export of counterfeit parts, reducing their impact in foreign markets.

'Cunning' counterfeiters

"Counterfeiters have become very cunning in that they don't store large quantities of fake goods in warehouses. Logistics are now well developed, and the window period from fake production to shipment is short, increasing the difficulty of anti-counterfeiting.

"With the strengthening of intellectual property protection in China, the behaviour of counterfeiters is not as blatant as before, with counterfeiters moving to online sales which brings more challenges to anti-counterfeiting."

Baogang Jing points out that Cummins is working with online platforms like Alibaba as part of the crackdown on criminal organisations. Civil punishment for counterfeiting in China is a hefty monetary fine while criminal punishment can include imprisonment.

Not only fake engine parts but also fake filtration products, generator sets and even Valvoline-Cummins oils are the focus on counterfeiters in China.

"Customers need to exercise caution when buying parts. Using cheap bogus parts can cause extensive engine damage that isn't covered by Cummins' warranty," warns Kyle Miller.

"Cummins Genuine parts sourced from the extensive network of Cummins branches and authorised Cummins dealers in Australia and New Zealand are the only parts approved and warranted by Cummins."



▲ Scan here or click here for more info.



Training at Kangan Institute's Automotive Centre of Excellence.

81 apprentices selected from more than 5000 applicants.



Two-week onboarding program included a variety of activities.

“Our aim is to achieve a 50/50 intake of male and female apprentices.”

ALL ABOARD Record apprentice intake for 2024

Cummins has welcomed 81 new apprentices – a record apprentice intake – to its branch operations in Australia, New Zealand and Papua New Guinea.

Significantly, 27 of the apprentices are women – another record.

"These new recruits, who were selected from more than 5000 applicants, took part in a two-week onboarding program in Melbourne," said Kate Evans, training manager for Cummins Asia Pacific. "Cummins now has 240 apprentices in its South Pacific operations."

With 37 branches across the South Pacific region, Cummins' recruitment of high calibre apprentices is crucial to ensuring best-in-industry technicians into the future.

Commenting on the fact there had been 5000 candidates for apprentice positions in 2024, Evans said that raising the profile of the Cummins brand had been important.

"Cummins has become more strategic in developing its talent pipeline," she said. "We're attending more career events, working more closely with TAFEs to identify talent, and also running work experience programs."

She pointed out that Cummins had also engaged with Work180, a platform that endorses companies who demonstrate a genuine ongoing commitment to advancing women's careers.

"Our aim is to achieve a 50/50 intake of male and female apprentices as well as attracting indigenous peoples and people with disabilities," she said.

"We are also finding that women involved in the mining industry, such as haul truck and excavator operators, are seeing the value in apprenticeships."

The two-week onboarding program included a variety of activities, including meeting senior company leaders who had come through the apprenticeship pathway. These included engineering director Neil Husband and supply chain director Paul Anscombe.

Basic hand skills and safety training were carried out at Kangan Institute's Automotive Centre of Excellence while another highlight was a visit to the P.A.R.T.Y (Prevention of Alcohol and Risk Related Trauma in Youth) program facilitated by the Alfred Hospital. A tour of the hospital's intensive care unit, emergency department and rehab unit gives apprentices an up-front, true-to-life experience of the impact of injury, trauma and disability on people of similar age to themselves.

The emphasis on safety as a value within Cummins was high on the agenda, while other core curriculum modules such as code of conduct, treatment of others and Passport To Safety training were delivered to set the expectations of right environment and workplace behaviour.



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Apprentices at Cummins Asia Pacific headquarters in Scoresby, Melbourne.



Cummins

STILL A BRUTE

In this era of electronic engines, the big banger Cummins K19 is hardly a masterpiece of technology.

Yet this was the reason some of Australia's best known roadtrain operators preached the value of trucking's biggest cubic capacity engine. Indeed, brute strength and simplicity of the 18.9-litre Cummins were considered its greatest assets.

Steve Grahame had the greatest respect for the KTA600 in his 1994 Kenworth C501 Brute, a roadtrain prime mover he has owned since 1999 and recently repowered with a new Cummins X15 Euro 3 engine.

The Brute had clocked up 1.7 million kilometres when Steve bought it, most of those being hard kilometres hauling cattle for Alice Springs-based Tanami Transport.

Today, Perth-based Steve estimates his 30-year-old Kenworth has done close to 4 million kilometres and he talks with a definite tone of pride about the condition of the truck – testimony to the rugged simplicity of the C501 and the way he looks after it.

With the KTA600 no longer sitting out in front, the focus is on the X15 which was slotted into the C501 chassis in a repower project in 2023.

"The KTA600 needed a rebuild due to a dropped valve and it was going to be

costly, so when I looked at the economics I decided the X15 was the way to go," he confides.

"You could say I was dragged kicking and screaming into the current generation with the X15 Cummins."

Impressive at 600 hp

Steve put the repowered C501 into service in September 2023, with the X15 Euro 3 engine initially rated at 550 hp with peak torque of 1850 lb ft.

"Pulling three trailers, the X15 wasn't quite there compared with the KTA600," he states. "The KTA had less torque than the X15 (1650 versus 1850 lb ft) but its big lungs and long stroke gave it a better feel.

"However, with the X15 now upgraded to 600 horsepower and 2050 lb ft of torque, it's very impressive," he says.

"I like the improvement in fuel consumption, too," he adds enthusiastically. "I'm consistently saving between 100 and 150 litres per 1500 kilometres."

The X15 Euro 3 engine is becoming a popular repower option. It shares the same base engine hardware as the X15

“With the X15 now upgraded to 600 horsepower and 2050 lb ft of torque, it's very impressive.”

Euro 6 powerhouse but without SCR aftertreatment; it can only be installed in pre-2008 registered on-highway trucks.

52 years in trucking

Steve Grahame – "I'm 73 this year" – has been on the road for 52 years and is a celebrity in his own right, having starred in every season of the popular television show Outback Truckers since 2012, taking viewers into some of the most remote areas of Australia.

He reckons the show has done an amazing job of putting Australia on the map. "When I first started on the show, I was embarrassed and felt like an idiot, but I did it for my grandkids," he says.

Steve's phone number is on the door of his truck and thanks to the show's global success – it has been aired in over 120 countries – he has received many calls from people overseas. "The number of phone calls I get from all over the world is amazing so I'm proud to be part of the show," he confides.

Steve Grahame's work is mainly delivering building supplies to outback communities.

Steve Grahame with the X15 that replaced the KTA600 Cummins last year and is delivering impressive performance.

Cummins on-highway account manager Geoff Ironmonger with the KTA600 from Steve Grahame's truck.

The construction industry is a big part of his business, his work extending from the Pitjantjatjara land in northern South Australia, up through the Northern Territory and across the Kimberley region of Western Australia.

He carts a lot of building supplies and equipment for indigenous communities and refers to his work as "old-fashioned, old-school trucking" which takes him into the remote parts of the outback – areas that give remoteness its true meaning.

Since the days he left school to become a field hand for mine exploration and drilling crews – jobs that required a truck licence – to then carting livestock as he forged a place in the transport industry, Steve Grahame has been on an incredible journey.

With so many years of trucking and millions of kilometres now under his belt, is retirement on his mind? "I think I've got another few years left... I've got no desire to retire," he says candidly.

CLOUD BOOM: Korean Google's new hyperscale DATA CENTRE

South Korean internet giant Naver, often referred to as the 'Korean Google', has selected Cummins to provide the critical backup power at its new world-class hyperscale data centre in Sejong.

With soaring traffic on its platform, Naver embarked on the project to construct one of Asia's largest data centers which will be developed over six phases using a substantial volume of generator sets.

The first phase of the Gak Sejong data centre features 18 Cummins QSK95 gensets with a 60 Hz standby rating of 3750 kVA. At the heart of the genset is Cummins' most powerful diesel engine, a 95-litre V16 noted for its power density, fuel efficiency and low emissions capability.

In addition to the gensets, Cummins has also supplied the digital master control system for the gensets, PowerCommand DMC8000 units designed to provide best-in-class resiliency and system uptime in any potentially disruptive scenario.

Located on a 294,000-square-metre site, the Gak Sejong data centre is all about Naver's big push to secure its supremacy

in fast-growing artificial intelligence – for example, HyperCLOVA X and cloud markets.

Outperforming Google

Launched as an online platform in 1999, Naver was the first South Korean web portal to develop its own search engine. Known as the 'Korean Google', it comprehensively outperforms its international rival in its home market with 48 million daily users using the mobile web and PC search engine.

When all six phases of the Gak Sejong data centre are constructed, it will be fully capable of hosting more than 600,000 servers. Data storage capacity will be 65 exabytes, or 65 billion gigabytes – more than one million times the capacity of the National Library of Korea.

"The collaboration between the Cummins teams – sales, engineering, supply chain and service – has been crucial to the success of the Gak Sejong project," says

Homyun Choi, who has headed up the project for Cummins South Korea.

"Brad You, who worked on the logistics side, faced the daunting task of getting the 30-tonne QSK95 gensets from the US to Korea, but he succeeded in keeping the project on schedule.

Partnership with Naver

"Above all, our partnership with Naver highlights Cummins' commitment to providing best-in-industry customer support and also the ability to meet the stringent demands of prestigious data centre projects."

Gak Sejong represents Naver's second data centre, complementing the tech giant's existing facility in Chuncheon, which has been operational since 2013 and features eight Cummins gensets – 2500 kVA units powered by Cummins' QSK60 engine – for backup power.

At the opening of Gak Sejong, Naver CEO Choi Soo-yeon said: "Hyperscale data centres recently have gained recognition

as the core infrastructure for technological innovation, but Naver has been preparing for hyperscale data centres since the opening of Gak Chuncheon 10 years ago.

"The hyperscale data centre Gak Sejong will become an engine for technological innovation not only for Naver but also for all industries."

Sustainability is a focus for Gak Sejong. The centre employs a self-developed air conditioning system which cools server rooms using natural wind and optimises energy efficiency by reusing waste heat for central heating, snow and ice melting systems on facility roads and floor heating.

Platinum rating

Naver is aiming for certification under LEED V4 Platinum. LEED (Leadership in Energy and Environmental Design) is the most widely used green building rating in the world and platinum is the highest possible rating.

To maximise operational efficiency in the vast facility, Naver has implemented various technologies, including AI, robotics and driverless shuttle buses.

A robotic automation system manages server assets, with robots monitoring and

controlling the flow of assets in real time within the data centre. The autonomous shuttle buses connect major bases within the site, transporting workers between locations.

The site is also designed to ensure service continuity even in the event of natural disasters such as earthquakes and fires. A special earthquake-resistant design used for nuclear powerplant-level buildings is applied to the site, so it can withstand earthquakes of up to magnitude 9.0, which is equivalent to the intensity of the devastating Fukushima earthquake in Japan.

“Our partnership with Naver highlights Cummins' commitment to providing best-in-industry customer support and also the ability to meet the stringent demands of prestigious data centre projects.”

Cummins QSK95 provides critical protection power at Gak Sejong.



▲ Scan here or click here for more info.



When fully developed Gak Sejong data centre will be capable of hosting more than 600,000 servers.

First phase of the Gak Sejong data centre features 18 Cummins QSK95 gensets.

Cummins' new branch facility in Tamworth, NSW, reinforces the company's strong reputation in the region for top-level customer support.

Plaudits for performance

The bustling inland city of Tamworth in north-western NSW – well-known as the ‘Country Music Capital of Australia’ – is home to Cummins’ newest branch facility which supports a vast number of engines in the mining, trucking and agricultural industries.

The new branch, located on a greenfield site at 10 Logistic Avenue, just off the Oxley Highway, reinforces Cummins’ powerful reputation in the region for top-level customer support.

Branch manager Cambell Carmichael is a firm believer in the adage, ‘people don’t believe what you say, they believe what you do,’ and he has his team at Cummins Tamworth working to this maxim.

Cambell clocked up 20 years with Cummins in January 2024. He served his apprenticeship at Cummins Laverton (Melbourne) and then held workshop/field service roles in Mt Gambier, Warrnambool and Laverton before being promoted to operations manager at Cummins Mildura. He secured his first branch manager role in Tamworth five years ago.

‘Smart’ office

The new branch is designed around the Cummins Smart Office model which focuses on workspaces that create the right environment for a diverse workforce.

At full capacity, the branch has 56 employees, including 20 in field service who have a vast truck and mining engine population to support. Eight technicians are based in the workshop which has six truck bays and one teardown bay.

More than 160 Cummins high horsepower engines – mainly QSK60s – are in service at Whitehaven Coal and Boggabri Coal. Casey Haywood, who has been with Cummins Tamworth for 16 years and is now a leading hand in the field service operation, takes immense pride in the company’s service support capability and the relationship that is built with the customers.

“It’s great to see where we’ve come from to what we’ve got now in terms of team size and the new branch facility,” Casey says. “I like the camaraderie, being involved in mentoring, and just the challenge of what we’re doing.”

Mark Irwin, maintenance manager at Whitehaven Coal’s largest mine, Maules Creek, refers to the “healthy relationship” with Cummins and the “high quality support” provided by the Tamworth branch.

Tamworth is also a massive hub for trucking. In fact, in the last 10 years more than 900 new Cummins on-highway engines have gone into service in the region alone, with the Cummins branch supporting fleets like Parry Logistics, Cavanaghs Stockmaster, Carey’s Freight Lines and McCulloch Bulk Haulage along with a host of smaller customers.

In nearby Walcha, Brian Smith Timber Transport and Betts Transport are two other major fleets. Brian Smith, who is aiming to haul over 350,000 tonnes of softwood and hardwood in 2024 with his fleet of Cummins-powered Kenworths and Western Stars, describes as “outstanding” the service he receives from Cummins Tamworth.

Focus on apprentices

A strong apprentice program is an important part of Cummins Tamworth’s operations, one that has earned a Best Practice Award. Four new apprentices will join the team in 2024, taking the total number of apprentices at the branch to 11.

“The significant growth across our parts and service business over the last five years has seen employee retention and recruitment as a critical focus,” says Cambell Carmichael. “We needed to ensure that we set up our apprentices for success and then retain them within the business.”

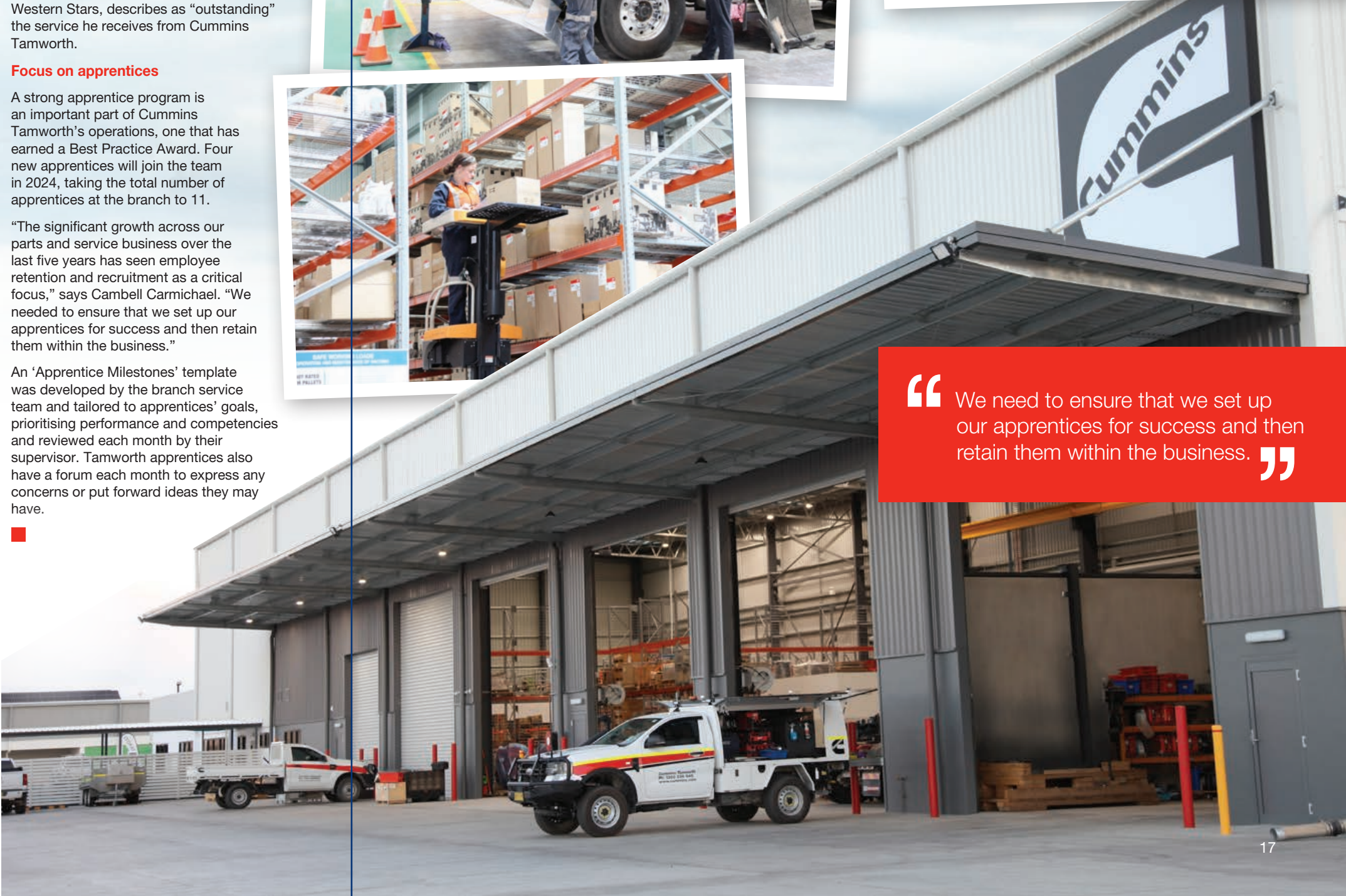
An ‘Apprentice Milestones’ template was developed by the branch service team and tailored to apprentices’ goals, prioritising performance and competencies and reviewed each month by their supervisor. Tamworth apprentices also have a forum each month to express any concerns or put forward ideas they may have.



Field service technicians Chris Holliday (left) and leading hand Casey Haywood.



Branch manager Cambell Carmichael (left) with parts supervisor Rebecca O'Brien and service manager Luke Johnstone.



“ We need to ensure that we set up our apprentices for success and then retain them within the business. ”



Werner Enterprises has signed letter of intent to purchase 500 hydrogen engines.



Buhler has signed letter of intent to integrate X15H in its Versatile tractors.



Terex Advance Mixer is to produce, trial and prove concrete mixer trucks powered by the X15H in real world conditions.

Hydrogen ON THE HORIZON

While Cummins' two hydrogen internal combustion engines – B6.7H and X15H – are still several years away from going into production, they are already shaping as an exciting prospect for a myriad of industries, not least commercial road transport.

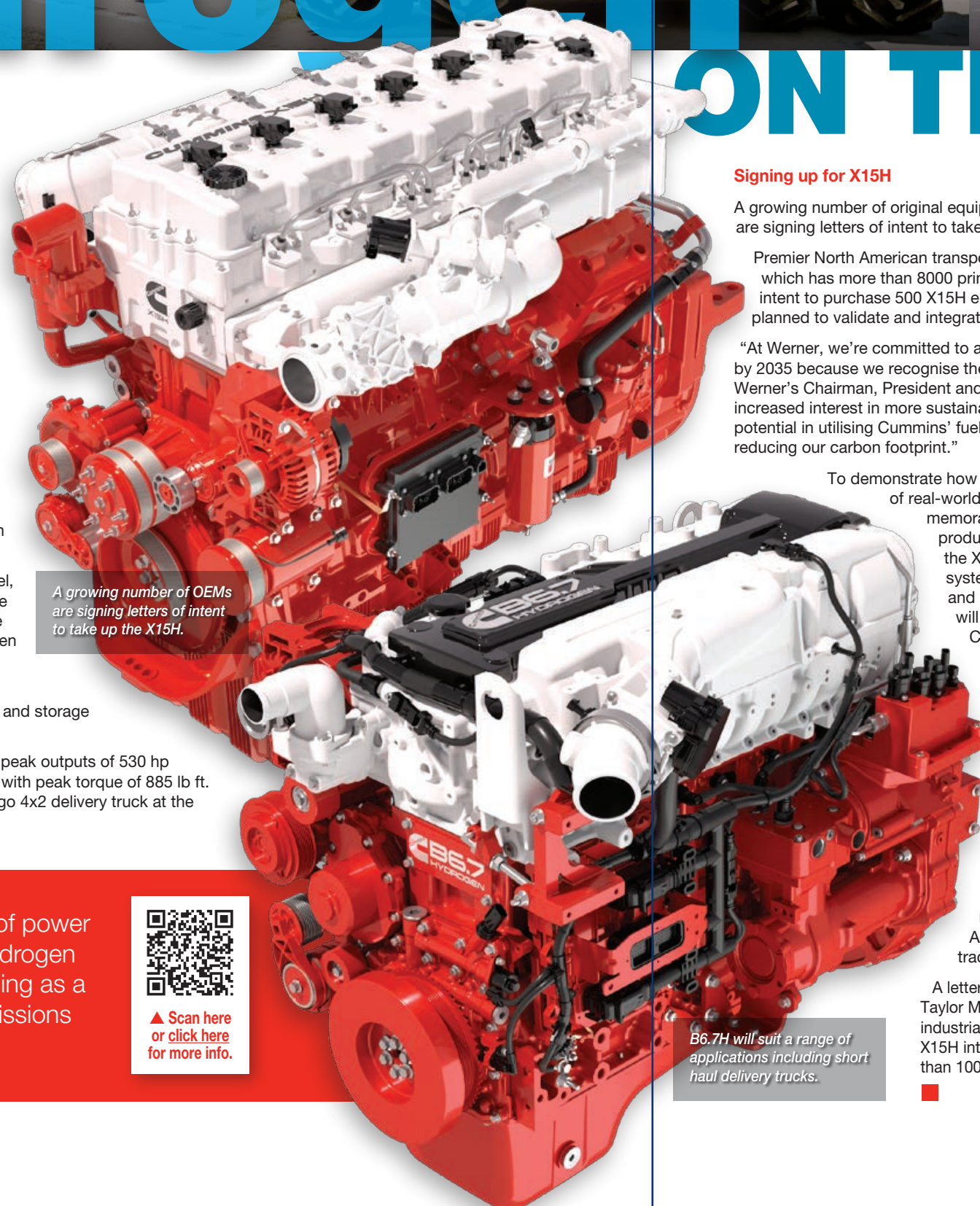
Part of Cummins' industry-first fuel agnostic platform, the 6.7-litre B6.7H and 15-litre X15H are based on familiar internal combustion engine technology and will play an essential part in decarbonising both on and off-highway applications with their diesel-like power and torque.

"While Cummins is investing in a range of power options to support decarbonisation, hydrogen internal combustion engines are emerging as a key technology to eliminate carbon emissions from heavy-duty sectors, while retaining the power density and operational range typical of diesel engines," said Jim Nebergall, general manager of hydrogen engines at Cummins Inc.

For hydrogen to reach its full potential as a zero-carbon fuel, the obvious requirement is for adequate infrastructure to be created to produce green hydrogen in quantities that make it accessible and affordable. Effective collaboration between governments and industry is thus crucial so that hydrogen becomes a clean and sustainable energy solution.

The challenge is universal with refueling stations, pipelines and storage facilities taking time and significant investment to develop.

With direct-injection, lean-burn combustion, the X15H has peak outputs of 530 hp and 1900 lb ft of torque while the B6.7H is rated at 290 hp with peak torque of 885 lb ft. The B6.7H was displayed in 2022 in a Mercedes-Benz Atego 4x2 delivery truck at the IAA Transportation exhibition in Germany.



A growing number of OEMs are signing letters of intent to take up the X15H.

Signing up for X15H

A growing number of original equipment manufacturers (OEMs) and end-user customers are signing letters of intent to take up the X15H.

Premier North American transportation and logistics provider, Werner Enterprises, which has more than 8000 prime movers and 24,000 trailers, has signed a letter of intent to purchase 500 X15H engines. Cummins announced in 2022 that Werner planned to validate and integrate both the natural gas X15N and X15H into their fleet.

"At Werner, we're committed to a 55 percent reduction in greenhouse gas emissions by 2035 because we recognise the important role our sustainability efforts play," said Werner's Chairman, President and CEO, Derek Leathers. "Our customers are showing increased interest in more sustainable choices in the marketplace, and we see significant potential in utilising Cummins' fuel agnostic platform to continue the momentum toward reducing our carbon footprint."

To demonstrate how hydrogen-powered trucks can handle the demands of real-world working environments, Cummins recently signed a memorandum of understanding with Terex Advance Mixer to produce, trial and prove concrete mixer trucks powered by the X15H. The project aims to develop a full hydrogen eco-system including a hydrogen producer, vehicle manufacturer and end-user. The companies will unite their efforts, which will see the X15H integrated into the Terex Advance Commander Series of front-discharge concrete mixer trucks and operated on construction sites and critical infrastructure projects.

Tennessee-based Tennessee Transport Enterprise Leasing, a premier commercial truck and trailer equipment lease provider with over 8,500 pieces of equipment leased throughout the United States, has inked a letter of intent to buy Cummins' X15H hydrogen engines for use in their fleet of heavy-duty trucks.

Canadian company Buhler Industries, a leading tractor manufacturer under the Versatile brand, has signed a letter of intent to integrate the X15H in its tractors to lead the decarbonisation of the agriculture market. Versatile, the first tractor manufacturer in North America to mass-produce articulated four-wheel drive tractors, has been using Cummins engines since 1967.

A letter of intent has also been signed with long established Taylor Machine Works, a leading American manufacturer of heavy industrial lift equipment, with plans to integrate the B6.7H and X15H into the Taylor product line. Cummins engines power more than 100 different models of lift trucks manufactured by Taylor.

B6.7H will suit a range of applications including short haul delivery trucks.

Cummins in joint battery venture with PACCAR and Daimler

Cummins, through Accelera by Cummins, is forming a joint venture with Daimler Trucks and Buses and PACCAR to manufacture battery cells for electric commercial vehicles and industrial applications in the US.

The three companies will each own 30% of, and jointly control, the joint venture and will initially focus on the lithium-iron-phosphate (LFP) battery technology family because of its advantages, including lower cost, longer life, fewer raw materials and enhanced safety, without the need for nickel and cobalt raw materials.

EVE Energy, a publicly traded, global manufacturer of batteries headquartered in China, will serve as the technology partner and will have 10% ownership in the joint venture. EVE Energy will contribute its industry-leading battery cell design and manufacturing know-how.

Total investment across all partners is expected to be US\$2.7 billion for the 21-gigawatt hour (GWh) factory.

Accelera by Cummins, Daimler Truck and PACCAR are leading the commercial vehicle sector's transition to zero emissions technologies. The partners are committed to reducing carbon emissions consistent with the Paris Climate Agreement.



▲ Scan here or click here for more info.

“While Cummins is investing in a range of power options to support decarbonisation, hydrogen internal combustion engines are emerging as a key technology to eliminate carbon emissions from heavy-duty sectors...”

Cummins CustomPaks are being used for water management as Thailand struggles with its...

WATER CRISIS

Sixty Cummins CustomPaks are in service in Thailand as part of a critical water management plan aimed at easing the country's water crisis – a crisis that has caused enormous economic and social damage and stirred conflict among communities.

Over the past several decades, Thailand has continually faced water problems caused by severe drought. Water reserves in dams and reservoirs are insufficient while water resources are often contaminated with toxins caused by urban communities and the industrial and agricultural sectors.

Severe flooding is a threat, too, at a time when the realities of climate change are hanging over the country.

As a result, the allocation of precious water resources, which must be shared among various stakeholders including new and existing industry, large and small agriculture, and cities and villages has become a flashpoint.

Respected Bangkok-based company, Kittithanapat Engineering Co. (KTP), has been involved in the water management system since 1996, working closely with authorities such as the Royal Irrigation Department, Department of Water Resources, Bangkok Metropolitan Authority and others.

600 hp CustomPaks

To help KTP meet its often urgent requirements, Cummins DKSH (Thailand) has recently supplied 60 Australian-built CustomPaks – 45 powered by Cummins' X15 engine rated at 600 hp, and 15

powered by the QSL9 rated at 325 hp. These fully self-contained powerpacks are emissions certified to Tier 3.

The CustomPaks are coupled to hydraulically-driven, large-volume submersible water pumps sourced by KTP from US company Moving Water Industries (MWI); KTP is the exclusive distributor in Thailand for these MWI Hydroflo pumps.

Prior to Cummins' involvement, KTP was using another diesel engine brand but service support wasn't up to the standard required.

Long-serving KTP engineer Kittisak Thanasoot says Cummins DKSH's reputation for technical and aftersales support along with the reliability of the Cummins product were key reasons

“Cummins DKSH's reputation for technical and aftersales support were key reasons behind the decision to specify the CustomPaks.”

behind KTP's decision to specify the CustomPaks for the Royal Irrigation Department.

The ability of Cummins DKSH to respond to short delivery times was also important.

“Supplying large quantities of high horsepower diesel engines for emergency situations such as flash flooding can be a challenge for KTP,” says Kittisak Thanasoot.

“Responding to the needs of the government agencies to manage such problems in a timely manner and with least impact on communities, KTP has found the answer in our partnership with Cummins DKSH.”



Cummins CustomPak with 600 hp X15 engine.



Cummins DKSH's reputation for technical and aftersales support were key reasons Cummins CustomPaks were selected.



▲ Scan here or click here for more info.

RENEWABLE DIESEL:

The benefits you can expect

Cummins has approved the use of unblended renewable diesel, including hydrotreated vegetable oil (HVO), for its entire line of high horsepower diesel engines, across all ratings.

Utilising renewable diesels like HVO is shown to reduce net greenhouse gas (GHG) emissions by up to 90% compared to conventional diesel, dependent on the exact feedstock and fuel pathway. Particulate matter emissions are also reduced dramatically, potentially by up to half.

The approval applies to the QSK19, K19, QSK23, QST30, QSK38, K38, QSK45, QSK50, K50, QSK60, QSK78 and QSK95 across all industrial segments, such as mining, marine, rail, defence and oil & gas.

These engines can be fuelled with 100% renewable diesel, or any blend of renewable and traditional diesel, with no engine modifications required. Any renewable diesel used must meet the EN15940 standard, as defined by the European Committee for Standardization (CEN).

“As we work alongside our customers toward a carbon neutral future, bridge solutions like alternative fuels are critical in decarbonising existing equipment,” said Gary Johansen, Vice President, Power Systems Engineering.

Technical evaluations of all high-horsepower engines utilising renewable diesel as well as field testing showed that, when compared to conventional diesel, the use of renewable diesel can:

- Reduce well-to-work greenhouse gas (GHG) emissions by up to 90%
- Reduce tailpipe emissions of particulate matter and smoke up to 50%
- Experience only 1-2% power loss
- Provide no impact to service/maintenance intervals
- Be stored up to 10 times longer than standard diesel

Renewable diesel, also known as paraffinic fuel, is a low-carbon biofuel produced from processing waste lipids, such as vegetable oils, tallow or used cooking oils. HVO is the most popular and readily available paraffinic fuel. However, the exact feedstock used affects the associated GHG emissions. For example, research suggests using corn oil emits less than canola oil. It is important to consider where the HVO comes from. Provided the supplier complies with EN15940, then the HVO can be used in Cummins products. However, some suppliers offer more robust sustainable credentials than others, such as only using 100% verified waste products and never using palm oil.

Rio Tinto's renewable move

Rio Tinto has announced it will replace its entire fossil diesel consumption with renewable diesel at its Kennecott copper operation in Utah from 2024.

“...bridge solutions like alternative fuels are critical in decarbonising existing equipment.”

Kennecott's fleet of 90 haul trucks and all heavy machinery will begin to transition to renewable diesel in the first quarter of 2024, along with consumption from the concentrator, smelter and refinery.

The decision to convert to renewable diesel comes after a successful seven-month trial at Kennecott's Bingham Canyon mine. This trial was conducted in collaboration with Cummins to test renewable diesel in different operational environments and in different equipment.

The transition will reduce Kennecott's Scope 1 carbon emissions by around 495,000 tons of CO2 equivalent per annum, comparable to eliminating the annual emissions of more than 107,000 passenger cars.

Rio Tinto is targeting reductions in Scope 1 and 2 carbon emissions of 50% by 2030 and net zero by 2050.

Brian Smith Timber Transport is aiming to haul over 350,000 tonnes of softwood and hardwood in 2024 with its fleet of Cummins-powered Kenworths and Western Stars.



WINNING IN THE WOODWORK

When Brian Smith bought his first logging truck in 1986 – a White 4000 with Cummins NTC335 power – it was a modest beginning to what has become one of the largest log transport businesses in NSW.

Based in Walcha in the New England Tablelands region, Brian Smith employs 50 staff in a timber industry worth millions of dollars to the region each year. In fact, he's the largest private employer in the Walcha region, and proud of the fact he can contribute to the small community in this way.

Brian Smith Timber Transport today operates 26 of its own trucks – mainly eight-axle B-doubles – with a further four provided by subcontractors Greensill Bros and Hoffman Haulage. The company has three new trucks on order, two T909 Kenworths and a Western Star 48X, which are additions to the fleet.

As well as the log truck fleet, the Smith operation includes three B-double tipper combinations, two of which were on their way to Adelaide with grain at the time of writing.

Cummins power is firmly entrenched in the operation, with Cummins Tamworth providing service that Brian Smith acknowledges is "outstanding".

He was one of the first operators to commit to the then new generation 15-litre Cummins in the late 1990s with the Signature 600 ruling in his fleet, its performance and engine braking setting a new standard in the bush.

Big tonnages

"We're currently hauling around 230,000 tonnes of plantation softwood a year and are looking to ramp this up to over 300,000 tonnes in 2024," Smith reveals, pointing out that the Walcha region has some of the highest structural grade softwood in Australia, most of it used for housing.

"Our current contract with Forestry Corporation for plantation softwood is 33,000 tonnes/kilometre but we're actually doing 44,000 tonnes/kilometre."

The softwood plantation timber is radiata pine and is a completely renewable industry. "I've been working in forestry for 48 years and have harvested some areas three times," he says. In the last three years alone, Forestry Corporation has replanted some 3,500 hectares of radiata pine.

Brian Smith began a new three-year contract with Forestry Corporation in 2023, during which time his fleet will deliver 270,000 tonnes of softwood logs to Werris Creek to be railed to Wagga Wagga and then trucked to Tumut and Tumbarumba for milling. The timber was initially set for export, however the impact of the Black Summer bushfires of 2019-2020 meant Australian mills have been given priority



Cummins support is rated highly by Brian Smith. From left are Cummins branch manager Cambell Carmichael; Beau, Katie and Brian Smith; and Cummins on-highway business manager David Paddison.

“The support from Cummins Tamworth is outstanding.”



Cummins power has long dominated in the Smith fleet.

to provide feedstock to keep up with the ongoing demand for housing in Australia.

While the Smith softwood operation is a loading and transporting contract, the hardwood side of the business involves harvesting, loading and transporting, with 60,000 tonnes hauled annually and a fleet of harvesters and skidders doing the job in the bush.

Brian Smith grew up in the Wauchope region of NSW and inherited a strong work ethic. His grandfather Alf started in logging back in the days when bullock trains were used, and his father worked in the bush until his death in 1981.

Brian pulled stumps in 1981 and moved to Walcha, around 90 km north-east of Tamworth.

"I came to Walcha with nothing," he reflects. "I drove a truck for Lyall Flanagan and then in 1986 I bought my first truck, the White 4000 with a Cummins NTC 335."

Still actively involved in the business today at the age of 63, whether it's driving a truck or manipulating the controls of a harvester, Brian Smith shies away from the subject of retirement. In fact, when asked about how much longer he will keep working, wife Katie jumps in with the comment, "till his last breath!"

The business is obviously a future for the family, with son Beau working in the harvesting operation and daughter Bonnie running the tippers – a future that is obviously in good hands.



'Young' Brian Smith with his first Western Star back in 1988.

“I came to Walcha with nothing...”



Cummins' 'right first time' metric ensures rebuild centres operate to the highest standard.



The rebuild process is a 600-step procedure the MRCs have down to an art.



Early generation QSK78 (left) at the Brisbane MRC for upgrade to MCRS fuel system technology, and the finished product (right).



▲ Scan here or click here for more info.

The mindset at Cummins' two Master Rebuild Centres in Australia is firmly on...

RIGHT FIRST TIME



'Not another acronym' may be the typical reaction to RFT, but for Cummins' two Master Rebuild Centres (MRCs) in Australia, it's a key metric in proving the quality of their remanufactured high horsepower engines.

RFT stands for 'Right First Time', and according to this metric the MRCs in Brisbane and Perth set the quality standard for Cummins rebuild centres globally.

"Last year, we remanufactured close to 350 engines at our MRCs in Brisbane and Perth and 100 percent of those engines completed the dynamometer test without any issues," says David Wheatley, manufacturing leader for Cummins Asia Pacific.

"That was a massive achievement and a tribute to our operators who take a lot of pride in their work."

Both MRCs surpassed 2,500 total rebuilds in 2023 after starting operations in 2008-2009, and this year they are again ramping up production to meet increasing demand from mining customers.

"Reducing unscheduled downtime events for our high horsepower engine customers is the driving force behind everything we do," says Wheatley.

Quality engineers

"Both our MRCs have quality engineers who coordinate quality inspections at every phase of production, checking bolt tensioning, routing of wiring harnesses and so on, to ensure the RFT metric is front of mind.

"Any issue that's detected, however minor, is investigated and corrective action taken before the engine moves on to the next production phase."

The rebuild process is actually a 600-step procedure, from teardown to assembly, that adheres to the global Cummins Manufacturing Execution System (CMES) which provides specific electronic work instructions.

Wheatley states without hesitation that the Australian MRCs achieve quality equal to, or better than, Cummins' factory-built engines.

"Our remanufactured engines incorporate the latest and greatest product updates, so our customers are assured of receiving the best technology product available," he says.

"We also offer our high horsepower engine customers a much shorter lead time if they're acquiring a remanufactured engine versus a new engine."

He points out that a strategic support bank of remanufactured engines also allows Cummins to respond quickly to any unscheduled event requiring replacement of a customer's engine. The engines range from Tier 1 to the latest Tier 4 emissions spec.

Major upgrade project

A major project currently underway at the Brisbane MRC – and the first time it has been performed outside North America – is the upgrading of a fleet of 3,500 hp QSK78 engines with Cummins' latest fuel system technology.

The innovative upgrade sees Cummins' early generation high-pressure unit injection (HPI) system on the 78-litre, V18 powerhouse replaced with the high-pressure modular common rail system (MCRS) to achieve significantly reduced greenhouse gas emissions and diesel particulate emissions.

The same fuel system upgrade has been carried out at both MRCs on the industry's biggest selling mining engine, the QSK60, since 2015.

Capable of remanufacturing over 300 engines annually, the Brisbane MRC was upgraded in 2023 to incorporate four electric rollover stands (up from the previous two), multiple production lines, numerous overhead cranes, and specialised lifting equipment.

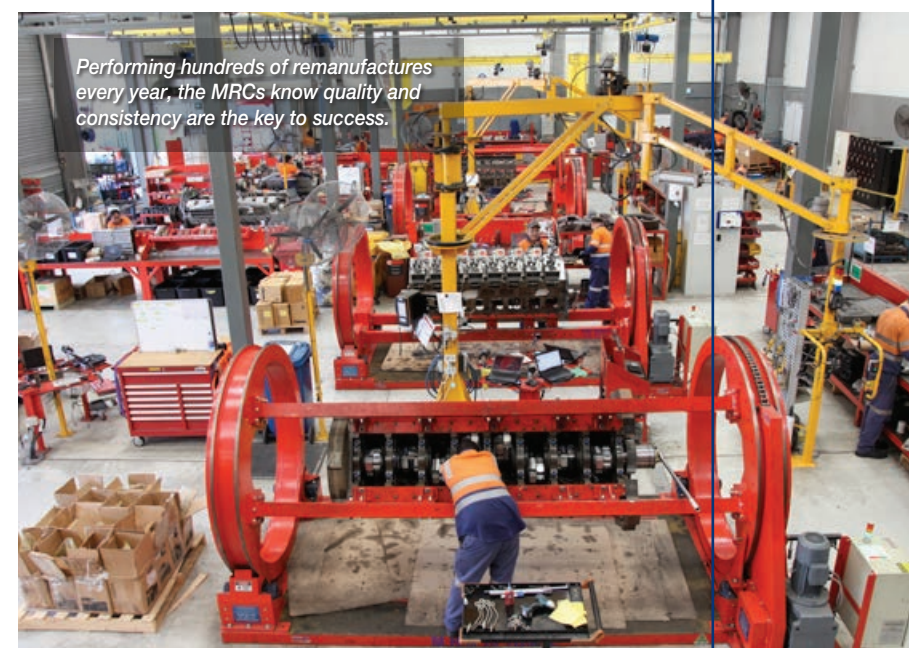
Improved ergonomics for safety and worker ease-of-operation were an important part of the upgrades while two new 4,500 hp dynamometers were also installed.

The same major upgrade program is now being undertaken at the Perth MRC.



Dynamometer testing: Two new 4,500 hp dynos have been installed at Brisbane MRC.

“ Our MRCs have quality engineers who coordinate quality inspections at every phase of production to ensure the RFT metric is front of mind. ”



Performing hundreds of remanufactures every year, the MRCs know quality and consistency are the key to success.

Dripping with TECHNOLOGY

Cummins generator sets are playing a key role in a cutting-edge drip irrigation system at a horticultural property in South Australia.

Although the land had been previously farmed, the property lacked the necessary infrastructure for a proper horticulture development, so the irrigation system – often the most costly and critical component of such a development – had to be designed from scratch.

“The need for high quality, reliable infrastructure and the ability to design redundancy into the system are important to avoid operational issues in the future,” says Greg Hocking of Ardal Water Solutions, whose company provides project and technical management to the agricultural industry.

Access to mains power is limited at the site, so for the project to proceed a decision was made to use diesel gensets to power the irrigation system.

“In the case of this particular property, the design process involved reaching out to the market to review supplier options, with the resultant selection of Cummins as the preferred genset supplier,” says Greg Hocking.

“Reliability of the gensets was a critical consideration,” he asserts.

Cummins quality

“There’s a lot of product out there cheaper than Cummins but if a high technology, high efficiency irrigation system goes down in the middle of a heatwave, the cost of not having quality equipment can be high.”

Cummins’ reputation for technical and service support also figured strongly in the choice of the genset brand, with Jon Ashcroft from Cummins leading the project with support from Craig Lawson (engineering) and Bob Naicker (service).

The irrigation system is an example of how drip irrigation has advanced to the point where it is now almost a science in itself.

The full development can be irrigated in a single shift, utilising low-flow rate emitters,

while still maintaining the ability to vary application, as required, to meet plant demand.

Soil and plant sensors continually monitor the system’s operation and performance with the information being transmitted via radio to the central operations area, allowing for full control of the system by the irrigation team.

The Cummins gensets include 500 kVA and 1000 kVA units; the 500 kVA units run in parallel and feature Cummins’ Masterless Load Demand (MLD). This technology allows the gensets to stop/start automatically based on load demand.



1000 kVA gensets are installed in 6-metre enclosures with bundled base fuel tank.



500 kVA gensets powered by Cummins X15 engine.



▲ Scan here or click here for more info.

“Cummins’ reputation for technical and service support figured strongly in the choice of the genset brand.”

Cummins’ DIESEL-HYBRID HAUL TRUCK solution begins field testing

Cummins Inc. has commissioned its diesel-battery solution in partnership with one of China’s leading mine truck manufacturers, North Hauler Joint Stock Co., Ltd. (NHL), demonstrating progress in decarbonisation for industrial customers.

The (diesel-battery) hybrid NHL NTH260, a 220-tonne payload mining truck, rolled off the production line in January and has begun field testing at Baiyun Iron Mine of Baogang Group, China.

Cummins’ optimised hybrid system allows the truck engine to be downsized from the previous 2500 hp QSK60 to the current 2000 hp two-stage QSK50.

“We’re excited to share this significant milestone in our journey to advance bridge technologies and provide our mining customers with innovative, practical decarbonisation solutions,” said Jenny Bush, President of Cummins Power Systems, who joined key leaders from Cummins Power Systems China for the commissioning ceremony in the NHL industrial park in Bautou, China.

The truck is expected to provide a leading total cost of ownership based on initial cost advantages, fuel efficiency and extended service life of the engine.

Improved fuel efficiency directly correlates to emissions and GHG reduction. Advanced hybrids have the potential to improve fuel efficiency up to 30% dependent on the mine profile and advanced battery technology and controls integration.

“Our partnership with Cummins spans 40 years and advancing the hybridisation of our equipment is another demonstration of what we can accomplish together for the benefit of miners globally,” said Haiquan Guo, General Manager, NHL.

NHL produces trucks with a payload range from 35 to 360 tonnes, with Cummins as the standard engine.

“We are intent on enabling multiple pathways to carbon neutrality for industrial markets, including both first-fit and retrofit solutions,” said Molly Puga, Cummins Power Systems Executive Director of Strategy, Digital and Product Planning. “It’s partnerships with our customers like NHL and Baiyun Iron Mine that will accelerate product availability in the market and make both near- and long-term carbon reduction goals attainable.”

“Advanced hybrids have the potential to improve fuel efficiency up to 30%...”



▲ Scan here or click here for more info.

The switch back to Cummins power has been beneficial for New Zealand company Uhlenberg Haulage. It's all about whole-of-life costs.



POWER, PRIDE & PASSION

Uhlenberg Haulage is closing in on 60 years in business, having been founded in 1966 by Mike and Carol Uhlenberg.

Based in Eltham, Taranaki, in New Zealand's North Island, the operation is today owned and operated by their sons Chris, Daryl and Tony Uhlenberg.

Describing the Uhlenbergs as "old school family truckies", Daryl talks about the company's time-honoured journey with a definite tone of pride, especially the work of his parents in laying the foundations for what is today an iconic fleet in its own right.

“The whole-of-life picture is the key thing for us and we've got that nailed with the support we get from Cummins...”

The Uhlenberg ancestry in New Zealand actually dates back four generations to the late 1800s when the family, from Poland, settled in the small town of Midhirst in Taranaki and became farmers.

The early days of Uhlenberg Haulage, with Mike and Carol at the helm, saw the family name stamped on Commers which carted metal for Ministry of Works road projects and other commodities needed by the rural community.

Kenworth made its first appearance in the business in 1971 when the Uhlenbergs bought a second-hand K923 for logging. This truck also marked the introduction of Cummins power to the Uhlenberg operation, the K923 having an NH250 engine. A second Kenworth, a W924 with a Cummins NTC335, followed soon after.

It's a gas

LPG was first hauled by the Uhlenbergs in 1972 and is still a substantial part of their business. Daryl talks about the early days when his pioneering father had to obtain weekly permits to carry out the LPG work as the railways were protected with trucks not allowed to run

more than 30 miles in competition with any railway line. The W924 Kenworth was also double-shifted to meet demand.

Today, the company also moves export beef and lamb in refrigerated containers and trailers to processing facilities and ports. Container haulage, both local and linehaul, is another activity requiring specialised equipment.

Local cartage includes metal, fertiliser, palm kernel, general freight as well as heavy machine shifts such as bulldozers and diggers.

A strong Uhlenberg belief is that loyalty received is deserving of loyalty in return. "Because we're a family business, loyalty to our suppliers is very important. We don't duck and dive," says Daryl.

The Uhlenberg operation today comprises 40 prime movers and a variety of trailing gear to cater for the myriad of jobs the fleet is involved in.

Continued overleaf...



Company founder Mike Uhlenberg (second from left) with sons, from left, Chris, Tony and Daryl.



First brand new Kenworth, a W924 bought in 1974 with Cummins NTC335, double-shifted on LPG haulage from Kapuni gas field to Auckland.



First Uhlenberg Kenworth, a second-hand K923 with Cummins NH250, hauled logs and LPG from Kapuni gas field to Auckland.



10-axle, 60-tonne B-train running export beef from processing plant to port.



Uhlenberg 48-tonne quad-axle LPG tanker that operates throughout the North Island.



“I can see where a 500 hp natural gas or hydrogen engine would work for us in short haul applications.”



“We’re the only private transport company in New Zealand that owns LPG tankers,” he points out. “We have 15 tankers hauling product from the gas fields off the Taranaki coast for distribution throughout the North Island.”

For many years the Uhlenbergs have been well-known for operating the Peterbilt brand. However, Kenworth is now the brand of choice with six new units to be delivered over the next 12 months to cater for business growth.

Cummins’ Euro 5 X15 rated at 550 or 600 hp is the preferred power specification, with 18 red engines currently in the fleet.

Whole-of-life support

“Our linehaul fleet was mainly Cat until they pulled out of the heavy truck business in 2010 but the switch to Cummins has been a very good experience for us. We have nothing but praise for the Cummins organisation,” says Daryl.

“The whole-of-life picture is the key thing for us and we’ve got that nailed with the support we get from Cummins – parts availability, scheduled maintenance, life expectancy and in-frame rebuilds.

“So the red engines turn up, we run them to life, which is 900,000 to 1.2 million kilometres, and then Cummins does an in-frame overhaul in a timely manner. If there’s an issue, parts and support are close by.

“The support we get from Cummins Palmerston North is fantastic, second to none.”

He points out the company isn’t into extended oil drain intervals. “We still do 20,000 km intervals because it’s a proven formula for us in terms of engine life.

“We have our own workshop with three technicians and do around 90 percent of own maintenance.”

Daryl recently looked under a Kenworth that was in the workshop for a service and was surprised to see no oil leaking from the one-million-kilometre X15. “I remember when I was a fitter we had to wear a raincoat when working under a truck,” he jokes.

Fuel agnostic

Acknowledging that the push to decarbonise is now “very real”, Daryl likes the idea of Cummins’ fuel agnostic concept where one base internal combustion engine, optimised to run on diesel, can also be customised to run on ultra-low and zero-carbon fuels like renewable natural gas and hydrogen.

“My father was a pioneer of linehaul trucking in New Zealand and he always embraced new technology. He was never scared of it,” he says.

“I tend to be a little more cautious but I can see where a 500 hp natural gas or hydrogen engine would work for us in short haul applications,” he admits. “We’re certainly willing to look closely at these alternative fuel technologies when suitable infrastructure is in place.”

While the natural gas X15N and hydrogen X15H are gaining global attention, Cummins’ next generation 15-litre diesel engine, the X15D is also on the Uhlenbergs’ radar.

“We’ve always liked the higher horsepower for our linehaul work as it has proven to be beneficial in terms of whole-of-life costs,” says Daryl.



Bhagwan hybrid lives up to hype

It was big news back in 2014 when a 57-metre vessel with four Cummins generator sets at the heart of its hybrid diesel-electric propulsion system was put into service by Bhagwan Marine, a major Australian service provider to the offshore oil and gas industries.

Bhagwan reported remarkable fuel savings for the highly advanced Dryden, a catamaran that was using around 65% less fuel a day in a like-for-like comparison with the company’s conventional diesel vessels.

The advanced power management system was said to be the secret, making optimal use of the four Cummins generator sets and a battery bank to ensure each power source was used in the most effective way.

Eight years later, Bhagwan’s initial hopes for long engine life — two of the generators are powered by Cummins’ QSK19 engine rated at 400 kW while the other two are powered by the Cummins QSK38 rated at 950 kW — were fulfilled.

In-vessel rebuilds of the four engines was completed in a major project in Dampier.

Reputation for long life

All engines reached 30,000 hours with no major issues, underpinning the reputation of Cummins’ high horsepower QSK powerplants for long life-to-overhaul.

There was fierce competition to win the rebuild work from external marine engine repairers, but Cummins was the preferred option with its high level of technical capability and the fact genuine and recon parts were offered.



▲ Scan here or click here for more info.

These major works were completed in Dampier with collaborative effort from the Cummins teams in Karratha, Bunbury, Perth and Newman to meet the labour, tooling and parts requirements.

Bhagwan Marine, established by the Kannikoski family in Geraldton (WA) in 2000, has since morphed into one of the largest and most diverse fleets servicing Australia’s oil and gas industry and port development sector.

The Dryden was designed from the keel up to work in shallow waters and perform six key roles: dive support, geophysical survey, geotechnical survey, cargo transport, hyperbaric rescue and safety standby.

The Cummins generators can be powered up in stages to minimise fuel burn while a battery bank stores enough power to propel the ship for short periods. Among the vessel’s features is its dynamic positioning system achieved through multi-directional stern drives and bow thrusters.

“The critical requirement was reliability and we were confident our generators would provide this.”

Generator reliability

“The Dryden was a special vessel from the outset,” said Cummins Perth’s Peter Brookes, who was instrumental in the specification of the generator sets for the vessel. “The critical requirement was reliability and we were confident our generators would provide this.

“We sourced a lot of information from our mining team on various aspects of the QSK engine product in high load factor operations, including projected life-to-overhaul.

“Injector life was one example. Our expectations were that with Fleetguard Nanonet filtration and the use of low sulphur fuel, the injectors would last the life of the engines which has been the case.”

Bhagwan embraced Cummins’ latest high horsepower diesel engine technology for the Dryden, with both the 19-litre QSK19 and 38-litre QSK38 featuring the high-pressure modular common rail fuel system (MCRS) that has proven benefits.

Since it was introduced on Cummins’ high horsepower engines, MCRS technology has highlighted improvements in fuel consumption, reliability and extended life to rebuild. Other key benefits are significantly reduced noise and vibration.



Bhagwan Dryden features advanced power management system, incorporating four Cummins gensets.



Cummins' power generation team in the Philippines, from left: Manolito Dagnalan, powergen manager – field service; Sonia Cueno – senior project manager; Marietta Ross – power generation leader Philippines; Dennis Almario – senior sales engineer; Jerome Sayas – field service technician.

“Cummins’ ability to provide total systems integration, project management and delivery, engineering, technical and aftermarket service support are key strengths that enable a data center provider like ePLDT to promote its facilities as meeting best practice and rigorous global standards.”

Nathan Howell
Sales Director – Power Generation
Cummins South Pacific, South East Asia

Cummins has forged a strong relationship with leading Philippines data centre operator ePLDT.



Cummins QSK60 genset installation at ePLDT Vitro data centre.



▲ Scan here
or click here
for more info.

Cummins provides CRITICAL PROTECTION POWER for ePLDT data centres

Cummins has a time-honoured relationship with ePLDT, dating back more than 20 years during which time Cummins generator sets have been a key component in meeting the stringent data centre requirements of uptime, reliability and security.

Cummins Sales & Service Philippines was established in 2001, shortly after ePLDT opened its first data centre in the Philippines, and the two companies have since worked together closely as ePLDT has established the largest data centre footprint in the country with 10 facilities in strategic locations.

Boasting a 99.99% uptime service level agreement with its Vitro network of data centres requires expert attention to system architecture and unfaltering system redundancy, and ePLDT relies on Cummins to help achieve this with critical protection power at its world-class facilities.

Without the effective running of these facilities, cloud computing would grind to a halt – and so would every major organisation.

When businesses select a data center partner, security and trust are two of the most important factors to consider. Any security risks have the potential to cause immense damage.

“Our approach is to work with ePLDT right at the front end to identify solutions for existing and upcoming ePLDT facilities,” says Marietta Ross, power generation sales leader for Cummins Sales & Service Philippines.

“We engage across ePLDT’s engineering, facilities management and procurement teams to come up with the best solution for their data centre facilities.

“Overall, our aim is to be easy-to-deal with, available and highly knowledgeable about our products and services and we have the people and structures in place to achieve that.”

Strategic partnerships

The partnership built with Cummins is an example of the power of collaborative supplier relationships.

“We’re able to exchange a lot of ideas and information that further enriches both sides,” said Gary F Ignacio, Chief Data Center Officer at ePLDT, in an interview in

CEO magazine. “You really see a spirit of collaboration happening.”

Globally, Cummins is immersed in the data centre industry, having long-standing and strategic partnerships with the key players in what is one of the fastest-growing industries in the history of business.

Data centre providers want consistency and a seamless process of supply, installation and commissioning followed by top-level aftersales service, and Cummins is geared up with its support structures to provide exactly that, giving customers the confidence when partnering with the company.

“Cummins’ ability to provide total systems integration, project management and delivery, engineering and technical support and aftermarket service support are key strengths that enable data centre providers to promote their facilities as meeting best practice and rigorous global standards,” says Nathan Howell, Sales Director - Power Generation for Cummins South Pacific and South East Asia.

“ePLDT chose Cummins on the back of these strengths which provide total peace of mind around reliability and dependability in its data centres.”

Peace of mind

A data centre’s massed racks of servers draw significant power and also generate a lot of heat, placing considerable demand on power supply and air conditioning systems. Emergency back-up power is thus essential to ensure integrity and functionality of the hosted computer environment and Cummins backup diesel gensets have a proven track record in this mission critical area.

Product reliability and durability is a key strength, with a number of Cummins gensets at ePLDT facilities having been in service for 20 years. Importantly, Cummins has preventative maintenance agreements in place with ePLDT which include routine inspection and servicing of the generator system.

With continuous ratings up to 3750 kVA and standby ratings up to 4375 kVA, the gensets are part of Cummins’ total power system solution for data centre applications that includes automatic transfer switches, digital control technology, and remote monitoring and control in the form of PowerCommand.

In fact, all major components of the Cummins genset – engine, alternator and control systems – are designed and manufactured by Cummins.

Improving energy efficiency

As the new age of clean and sustainable power takes shape, Cummins is committed to partnering with data centers to improve their energy efficiency. An increased focus on air quality through reduced carbon and nitrogen oxide (NOx) emissions is an important part of this commitment.

With its Destination Zero strategy, Cummins is improving the company’s core products today to reduce carbon while bringing to market the zero-carbon technologies that will power tomorrow.

Cummins continues to invest in further advancement of the internal combustion engine to reduce atmospheric pollutants to near-zero levels. Use of low carbon fuels such as renewable diesel – hydrotreated vegetable oil (HVO), for example – are another focus. In fact, Cummins was first to market in late 2021 with the approval of 100% renewable diesel use in standby generator sets used in data centres.

Technological innovation, brand reputation and credibility are core to Cummins’ history, and they ensure that the 104-year-old company is committed more than ever to supporting its customers with the best solutions for their needs.



Cavanagh's Stockmaster owner
Rob Cavanagh has been around long enough
to know what works and what doesn't.

'NEWCOMER' NOT SO NEW

Rob Cavanagh declares he's a "relative newcomer" in the livestock transport business, despite the fact he's been involved in it for close to 40 years.

"When you look at the Martins, the Frasers, the Curleys, they're respected names who've been around for a long time," he says.

Cavanagh, in his own right, is a well-known and respected figure in livestock transport and he's not afraid to voice his opinion on industry issues.

Originally from Casino in far north NSW, he grew up on a mixed beef and dairy farm, a background that gave him the experience in dealing with saleyards and abattoirs.

He started driving for Jim and Helen Savage in 1985 and then set up his own business, Cavanagh's Transport, with one truck in 1988, sub-contracting to the Savage operation, later to become Stockmaster based in Tamworth, NSW.

While his livestock work went slight awry in the 1990s – "I actually carted bananas for a while for Les Blennerhassett of Blenners Transport" – he was soon back into livestock with steady growth.

In 2010, he bought Stockmaster from the Savage family and operated that company as well as Cavanagh's Transport, which was then based in Inverell, NSW. In 2021, however, he merged the two brands for the company to become known as Cavanagh's Stockmaster Transport, based in Tamworth.

Today, Cavanagh's Stockmaster has 22 of its own trucks which can be assembled as B-doubles, B-triples or roadtrains;

10 full-time sub-contractors are also on the books. Cummins-powered K200 Kenworths dominate in the fleet, with the X15 engines set at 600 hp and 1850 lb ft of peak torque.

Fleet expansion

"I'm looking to expand the business and know the company I want to acquire," he states with conviction. "Our focus is on working for exporters, so any expansion will be to this part of the business."

Communicating with customers is vital, he continues. "Having gear ready when they need it, solving small issues for them, making life simple for them is what it's all about.

"I've been very fortunate to have had loyal customers right from the start of my business," he adds. "I've got the customers I want, I only lose the ones I don't want."

A feature of Cavanagh's Stockmaster's operations is its ability to provide a 'cattle warehousing service' for customers by virtue of its own large set of cattle yards in Tamworth. This enables customers to assemble small lots acquired from different properties or saleyards until a full load is ready for delivery.

With a capacity for 400 head, the on-site cattle yard also has feeding facilities for customers wishing to yard, wean or feed their stock.

Working with the TWU

Commenting on the national shortage of truck drivers – it's estimated there are around 20,000 unfilled truck driving positions in Australia – Cavanagh believes the Transport Workers' Union needs to be part of the solution.

"The labour market is crippling businesses," he says. "We're going

to have to work collectively, develop relationships, to find a solution. I believe that should include working with the Transport Workers' Union."

He says that looking after drivers is critical to the success of his operation. "Our drivers get five weeks annual leave and we contribute \$1000 to their accommodation when they go on holiday. It's the drivers that have made this place, no doubt about it."

Loyalty to suppliers is another important aspect of his business. "You can't over-estimate the importance of loyalty," he says. "If you expect a supplier to be loyal to you, you should be loyal to the supplier. Good suppliers are critical to having a successful business."

He has learned from sometimes painful experience that in an industry as fiercely demanding as livestock haulage, service support is critical. "No one comes close to Cummins' support. It's all about people," he adds. "And Cummins has reinvested back into Tamworth with its new branch facility. We couldn't seriously consider anyone else."

'Drives me nuts'

Rob Cavanagh is an avid supporter of associations, having held executive positions with the NSW Livestock, Bulk & Rural Carriers Association and Australian Livestock & Rural Transporters Association.

"People not wanting to join associations drives me nuts," he declares. "The associations do some invaluable work. Look what they've helped achieve – Advanced Fatigue Management, roadtrain access to locations such as Tamworth – and so the list goes on.

"All transport operators should actively be involved in an association, it's hardly rocket science!"



“ All transport operators should actively be involved in an association, it's hardly rocket science! ”

Rob Cavanagh (centre) with Cummins on-highway business manager David Paddison (left) and Cummins branch manager Cambell Carmichael.



Cummins' support is highly rated by Rob Cavanagh.

“ No one comes close to Cummins' support. It's all about people. ”



“Non-genuine parts are usually reverse-engineered with poor quality materials and loose specifications.”

Non-genuine parts NOT WORTH THE RISK, warns Cummins

It has been happening forever and it definitely won't be changing anytime soon: Consumers tend to take a price-conscious approach when purchasing items.

It happens in the trucking industry where genuine parts can be expensive, seemingly overpriced compared with non-genuine parts.

So, is there a difference between genuine and non-genuine parts? Is it really worth shelling out the extra dollars purely for genuine parts?

Powering more types of equipment in more markets than any other engine company, Cummins warns there is a difference and that non-genuine parts can have potentially serious consequences in terms of an engine's lifespan, resulting in a blow-out of whole-of-life costs.

“When you look at the R&D put into the design and manufacture of Genuine Cummins Parts, the non-genuine suppliers don't do that, so the risks are obvious,” says Travis Lloyd, aftermarket director for Cummins Asia Pacific.

Destructive testing

He points out that Cummins engineers conducted lab analysis and destructive testing on over 300 non-genuine overhaul kit components for ISX and N14 engines, including pistons, piston rings, piston pins, cylinder liners, main bearings, connecting rod bearings, head gaskets and injectors.

Of the over 300 non-genuine parts tested, none met all Cummins Design Specifications.

“Non-genuine parts are usually reverse-engineered with poor quality materials and loose specifications,” says Lloyd. “They are not designed or tested to Cummins' exacting engineering and quality standards and this can lead to rapid wear, poor reliability, high fuel and oil consumption, excessive emissions and even engine failure.

“Non-genuine parts can also pose a safety risk if they are poorly produced or made of substandard materials. For example, fire risk or electrical failure may result from faulty components.”

He points out that while manufacturers of non-genuine parts may claim their products will work in a Cummins engine, the fact is they are not fit for purpose. Only genuine components are built to meet the original factory specifications while using the latest materials, component designs and manufacturing techniques.

“With Genuine Cummins Parts, customers know where and how they have been manufactured, so they can be confident in the quality, durability and reliability of the parts. In the event of failure, Cummins takes responsibility in providing warranty.”

Learned from mistake

Joe Ribera owns Melbourne Diesel Repairs, a business well-known for its focus on quality.

“Genuine Cummins Parts are important to the success of our business,” he says. “The parts are more expensive than non-genuine parts but if you want quality you have to pay for it.”

He points out that the parts warranty and extensive service support coverage provided by Cummins also “strongly favour” the use of genuine parts.

He confides he once used non-genuine parts when rebuilding a Cummins engine and it failed due to this. “The parts supplier didn't want to know about it, they didn't want to support us,” says Joe. “When something goes wrong like that it's hard work for all involved – the owner of the truck or engine, the mechanical repair business. There ends up being a lot of unpaid labour.

“I learned from that mistake. When you buy non-genuine parts you risk having problems.”

Cummins PACKS A PUNCH at premier maritime show

Asia Pacific Maritime (APM) is the premier marine exhibition and conference in Asia, showcasing a complete overview of the vessel sector services and solutions, technology, vessel equipment, supplies and much more.

Held bi-annually, the 2024 event was staged in Singapore in March at Marina Bay Sands, with Singapore capitalising on its role on the global stage as a leading maritime nation with trade linkages to the Asian markets.

Cummins exhibited at this year's APM for the first time in six years, showcasing the new B4.5 marine engine and 4BTA3.9 and QSB4.5 marine gensets.

The light but power dense B4.5 is designed for both recreational and commercial marine applications. It may be

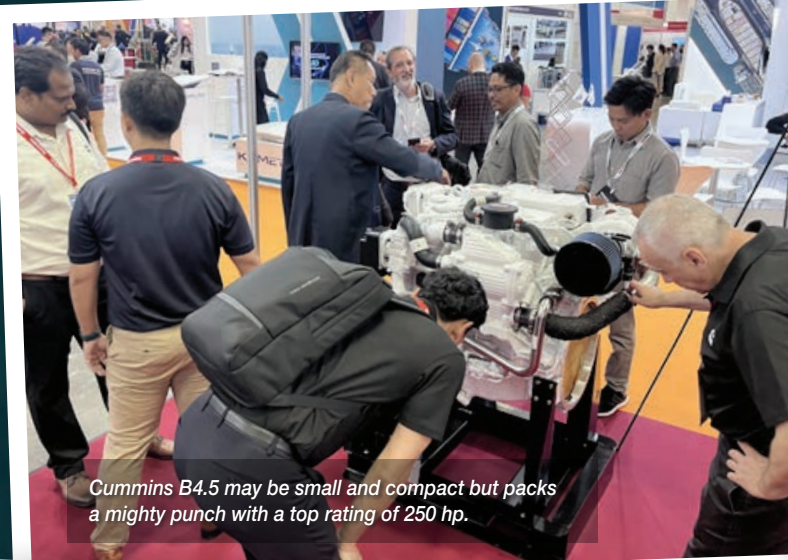
small and compact but it packs a mighty punch, offering a power range of 150-250 hp in propulsion format and 76-112 kWm (50 Hz) prime power in auxiliary format.

Cummins' participation at APM was a huge success, with over 300 leads generated from visitors to the Cummins booth and many new connections made.

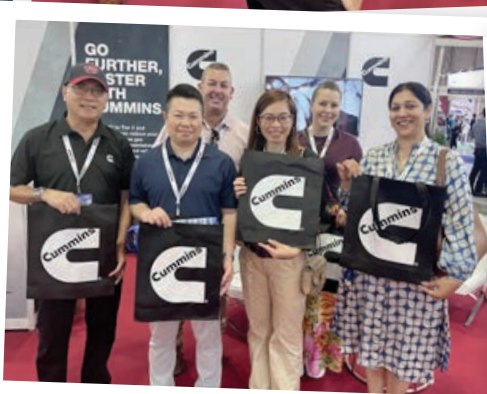
Cummins representatives and customers also had the pleasure of meeting Cummins distributors from across SE Asia, as well as Cummins international visitors Gbile Adewunmi, Shannon Kiely Heider and

Okechi Igwebuike from the Cummins Power Systems industrial engines and aftermarket leadership team.

Cummins Asia Pacific marketing and communications manager and event organiser Brooke Butler said: “Cummins' engagement at APM 2024 exceeded expectations with many customers keen to speak with us about how we can help them go further and faster with Cummins. We eagerly anticipate analysing the value from our participation and hopefully return for the 2026 event.”



Cummins B4.5 may be small and compact but packs a mighty punch with a top rating of 250 hp.



Flashback to 2011 when Rob Foo started as field service technician in Esperance, WA, with innovative trailer to enable quick and efficient servicing of trucks.

FAMILY MAN

Rob Foo at home in field service

Life has never been better for Rob Foo, Cummins' field service technician based in Esperance, a town of 13,000 people on the south coast of Western Australia.

"I like the freedom of being in Esperance, it's like running my own business, the work is varied, I've built strong relationships with my customers, and it's a great environment for the family," says Rob, who has two children, Amelia, 12, and Isla, 9, with wife Amy.

Rob, who is of Chinese heritage, was born in Penrith, 55 km west of Sydney, but went on to live "a bit like a gypsy" as his father was a farm worker, moving between towns in far north Queensland and NSW.

Rob moved to Esperance in 2010 after spending three years at Cummins Kalgoorlie in field service.

Prior to that he served his apprenticeship at Kenway & Clark, a farm equipment supplier and Cummins dealer in Moree, NSW, before moving to Bundaberg, QLD, to work for diesel repair business Ken Landt Diesel, also a Cummins dealer.

He didn't know what to expect in the small town of Esperance – 700 km south-east of Perth – whose port is a vital trade hub, connecting industries in regional WA with the rest of the world. Exports include iron ore, lithium, nickel, grain and woodchip.

Quick service

Soon after arriving in town, Rob's capabilities became well-known, especially with the innovative trailer he towed behind his Toyota Land Cruiser to enable quick and efficient service of trucks. The trailer is equipped with 220-litre tanks for oil and coolant, as well as a 500-litre tank for waste oil.

"I can pull up alongside a truck, suck the oil out and pump in new oil, change the filters, grease the driveshaft, adjust the brakes, and I'm done in 20 to 30 minutes," he says. "I guess I've pumped at least 160,000 litres of new oil from the trailer since I've been in Esperance."

While servicing trucks is one of his key tasks – he estimates there are around 70 Cummins-powered trucks in the region, mainly belonging to owner-operators and small fleets hauling grain and livestock – there are other market segments demanding his attention.

Pacific Energy's hybrid power station in Esperance has 11 Cummins HSK78G gas gensets and three Cummins diesel units, while in the mining space there are 15 high

horsepower Cummins engines operating in haul trucks and excavators at First Quantum Minerals' nickel mine at nearby Ravensthorpe.

Cummins-powered equipment at the port includes loaders and a pilot boat, while local BCI buses have Cummins engines.

Rob, who now shares the workload with another Cummins field service technician based in Esperance, Luke Verner, sometimes covers a lot of ground to get to a breakdown. "I've travelled 10 hours to get to a truck on the Eyre Highway with a problem that took only 45 minutes to fix," he recalls. He has other far-flung tasks as a field service technician, such as travelling to Wiluna, 900 km from Esperance, to work on the gas gensets at the gold mine.

While Rob takes a lot of pride in in Cummins' service support capability and the relationships that are built with customers, the environment for his family is just as important and Esperance provides the lifestyle and community spirit that is likely to see the Foo family call the town home for some time to come.



Rob Foo (right) at the control centre for Pacific Energy's new hybrid power station in Esperance which features 11 Cummins HSK78G gas gensets and three Cummins diesel units.



Cummins welcomes Gender Equality Report

The Australian Workplace Gender Equality Agency (WGEA) has published Australian industry median gender pay gap information for all companies with 100 or more employees.

Cummins' Australian operations are included in the Gender Equality Report.

The Workplace Gender Equality Agency is an Australian Government statutory agency charged with promoting and improving gender equality in Australian workplaces with a vision for women and men to be equally represented, valued and rewarded in the workplace.

Cummins welcomes the publication of gender pay gaps as a key measure of progress to inform more effective strategies and actions to advance gender equality in the workplace and our communities.

As part of the public release, companies can voluntarily choose to publish a Gender Equality Report. The Cummins report can be accessed at:

<https://www.cummins.com/company/esg/social/diversity/pay-balance>



Sean McLean leading Cummins' on-highway business

Sean McLean has returned to Cummins to take up the role of Director & General Manager - On-Highway Business, Asia Pacific.

He has over 30 years of commercial and technical experience across industrial and automotive powertrain and equipment markets and holds a Bachelor of Mechanical Engineering and a Master of Business Administration.

Sean began working for Cummins in 1993, supporting on- and off-highway markets in application engineering and business leadership roles before leading the Paccar (Kenworth/DAF) account for the South Pacific region.

As general manager of marketing and on-highway products, he was heavily engaged in the development and release of the SCR-only X15 platform.

Sean Hill appointed Cummins area director

Sean Hill has joined the Cummins Asia Pacific operations leadership team as area director for northern region.

His Cummins career started 28 years ago in Kalgoorlie as a field service technician and after six years of servicing mining, on-highway and power generation customers in the goldfields, he made the move to Freeport operations in Papua, Indonesia, where he continued to grow his experience.

The role at the iconic Freeport copper and gold mine afforded Sean the opportunity to mentor and develop local employees and be immersed in a culturally diverse environment encompassing not only local Papuan and Indonesian employees, but also others from around the globe.

Almost 10 years later, Sean decided to move closer to home and took up the position of Emerald (Qld) branch manager. Five years on, he moved to Brisbane as the regional branch manager overseeing Cummins' operations at Brisbane, Toowoomba and Freeport.

As area director for northern region, Sean is responsible for the operations business comprising 10 branches across Queensland, PNG and Freeport Indonesia.

CUMMINS GENDER EQUALITY REPORT

AUSTRALIA 2023



FOR A WORLD THAT'S ALWAYS ON™



Cummins' impact on communities

Around the world, Cummins employees devote hundreds of thousands of hours to community involvement work each year – an historical commitment that has never wavered, only strengthened through the decades. In the following pages are stories highlighting recent community work carried out by Cummins employees in the Asia Pacific region.



Cummins cleans up on important day

By Monika Gietz

Clean Up Australia Day 2024 brought communities together nationwide in a powerful display of environmental stewardship and collective action. From bustling cities to remote rural areas, individuals of all ages and backgrounds joined forces to tackle litter and waste, underscoring the importance of preserving our natural environment.

One such example of community engagement and corporate responsibility happened at the Cummins Brisbane branch. Our employees rolled up their sleeves and set out to tidy up the neighborhood surrounding the branch. Amidst their efforts, laughter echoed as volunteers stumbled upon unexpected treasures amidst the debris.

The participation of Cummins in Clean Up Australia Day exemplifies Cummins' commitment to making a positive impact on local communities.

As the clean-up efforts concluded, participants reflected on the significance of their actions in preserving the environment for future generations. Clean Up Australia Day serves as a powerful reminder that individual actions, when combined, can lead to profound and lasting change.

Let's continue to unite for a cleaner tomorrow, one clean-up at a time.

PICTURED ABOVE: Cummins Brisbane employees stumbled upon unexpected treasures amidst the debris.

A reason to smile!

Cummins Singapore's Women Empowerment Network in collaboration with the Community Involvement Team partnered with Project Smile to celebrate 2024 International Women's Day.

Project Smile is a Singapore-based charity that provides support to almost 100 women and families in the society such as trainings, financial assistance, emotional support, social integration, referrals and many others. It aims to empower women and help underprivileged women lead a better life.

Twenty-five employees from Cummins Singapore were excited to play a part, taking time out to pack goodie

bags consisting of food and drinks and beautiful handmade bracelets as well as writing personal cards of encouragement to the women in need.

A total of 85 goodie bags were packed within two hours. In addition, a small group of employees helped distribute these goodie bags and engage in fun activities with Project Smile's beneficiaries.

What a heart-warming experience to celebrate IWD by doing a good cause and putting a smile on women's faces!

PICTURED: Cummins Singapore employees pack goodie bags for Project Smile beneficiaries on International Women's Day.



Cummins donates \$42,000 to Duffy Books in Homes

The Cummins Foundation was created in 1954 and serves as the company's charitable giving organisation, providing grants to nonprofit partners.

The Foundation, which has been supporting the work of Duffy Books in Homes in New Zealand for more than a year, has extended the funding by donating \$42,000 towards Duffy's mission of 'ending the cycle of booklessness'. The Foundation initially supported three schools with almost 1,000 students receiving their own brand new books.

Duffy Books in Homes was founded by Alan Duff with a simple vision – to inspire a love of books in children and to break the cycle of booklessness.

Launched officially in 1995 with key partner Mainfreight, the program began with 80 schools. Now managed by Linda Vagana and a passionate team, the program has grown to encompass 570 schools and 269 early childhood centres. Over 90,000 children every year receive six books each provided by partnership between schools, funding partners and Ministry of Education with ongoing supporters and donors.

Duffy Books in Homes has now delivered more than 15 million books into the hands of children across Aotearoa and inspired offshoot programs in Australia and the US.

PICTURED BELOW: Duffy Books program manager Linda Vagana (right of banner) with representatives from Cummins Asia Pacific, Cummins NZ and Duffy Books.



Endangered fish the focus of environmental project

Five Cummins Brisbane employees recently undertook an environmental project, planting aquatic grass as a food source for endangered lung fish in the mid-Brisbane River.

Organised by Steve Micallef, a member of the Somerset & Wivenhoe Fish Stocking Association, the Cummins team worked with Healthy Land & Water on the project. The grass also filters and cleans the water while improving the biomass in the waterway. Black bean tree, lilly pilly and lomandra grass were also planted to assist in stabilising the river bank.

School welcomes Cummins on International Day of the Girl

On International Day of the Girl (IDOTG), Ganado Elementary School opened its door to welcome Cummins Philippines employees.

A regular beneficiary of the Cummins Philippines Community Involvement Team's activities, the school was excited to celebrate IDOTG with Cummins. It was the first time such an event was celebrated on campus.

A key theme was the importance of understanding female hygiene. Cummins employees shared some tips on the subject and gave feminine hygiene items to the students as token for their cooperation and participation in the event. This was followed by discussion surrounding bullying and the rights of girls and children under Philippine Laws.

Activities such as these are impactful to young girls as it re-enforces their aspiration to become successful individuals. Some of them expressed their dreams of becoming professionals in the future, such as architects, veterinarians, teachers and doctors among others.

The girls were asked to reflect on things they were grateful for before placing their reflections on a gratitude tree. It was a relieving moment to have the students let go of their concerns and appreciate the simple things in life. During the task, they also expressed appreciation towards the efforts of their family, especially their parents, as they provide them with the care, love and support in their studies.

PICTURED BELOW: Ganado school welcomed Cummins employees on IDOTG.



Lighting the candle for village children

Cummins Philippines employees took part in a community event with Chosen Children Village Foundation (CCVF).

The CCVF aims to provide a permanent home for abandoned, neglected and surrendered children who are mentally and physically challenged. It also aims to provide a training ground for the growing children under its care, maximise their potential, and help them become productive and self-reliant members of the society.

During the event, Cummins employees taught the children and staff how to make scented candles. The aim was to help them come up with an income generating endeavour that will help sustain CCVF's funds. As a self-sustaining action plan, the proceeds of the activity will be used for operational cost and expenses for the village.

Cummins employees taught the whole process of candle making – cleaning, melting, curing, packaging, marketing and sales. The activity was spearheaded by financial controller Geneveive Ruiz and product and customer service manager Anna Liza Caronan, supported by 23 other volunteers.

PICTURED: Cummins employees taught children and staff of CCVF the process of candle making.



Little Buddies meet Big Buddies

Big Buddies met Little Buddies when Cummins volunteers visited Inala State School (Brisbane) as part of the Numeracy Buddies program by Ardoch.

Established in 1988, Ardoch is an Australian children's education charity focused on improving educational outcomes for children and young people in disadvantaged communities.

The Numeracy Buddies program is designed to help children improve their math skills. It pairs students (Little Buddies) with workplace volunteers (Big Buddies) to work together on maths problems through an online blog.

The meeting was a long time coming with both parties excited to finally see each other in person. Volunteers and students kicked off the morning with a series of team activities such as the marooned game and marshmallow tower challenge.

The games were followed by a tour of the school's facilities to understand the students' learning environment. Participants then engaged in a question-and-answer session where students could learn more about their buddies' jobs and career journey.

The day concluded another successful year of partnership with Ardoch. Employees both old and new are anticipating joining in next year's Big Buddies cohort.

PICTURED: Cummins Brisbane's Terrence Clarke, a Big Buddy in the Ardoch program.



STEM a focus for Cummins partner Tara

Cummins Puchong (Malaysia) works closely with community partner, Tara Foundation, in providing children access to education and career guidance.

Tara Foundation was founded in Malaysia in 2002 with the focus of uplifting the lives of underprivileged children and families. Over the years the non-governmental organisation has grown into a nationwide champion for children's education.

With 21 education centres across the country, Tara offers tutoring and out-of-school activities to children in challenging environments, giving kids the chance to expand their horizons.

Tara has received a Community Development Grant from the Cummins Foundation.

Its partnership with Cummins sees employees volunteering to tutor students and organise site tours to encourage an early interest from the children in STEM (Science, Technology, Engineering & Mathematics) fields.

A tour of the Cummins Puchong facility gave children a glimpse of what it is like to work at Cummins. Along with a reminder of how safety is an utmost priority, Cummins colleagues opened up about their career journey.

PICTURED ABOVE: Cummins employees joined with Tara students at a bowling event.

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