Nissan Navara EnGuard Concept: in detail

Nissan has unveiled an all-new vehicle at the 2016 Hannover Motor Show. The Nissan Navara EnGuard Concept is a durable and tough all-terrain pick-up, designed to operate as a life-saving rescue platform in some of the world's most harsh and extreme environments.

Based on a Double Cab Tekna version of the Nissan Navara – the current holder of the International Pick-up Award – the Navara EnGuard Concept features many bespoke design elements and performance upgrades. It is also packed with vital equipment suitable for emergency and disaster recovery work, including new prototype portable battery packs.

Like every Nissan Navara, the Navara EnGuard Concept has been engineered to be tough and smart, with outstanding dynamic capability and a range of in-control technologies fitted as standard. These include Nissan's pioneering Around View Monitor 360 degree camera system.

Nissan: a global leader in LCVs

Nissan is a global leader in LCVs with a broad product range that includes pick-ups, trucks and a versatile line-up of vans to suit every type of business. It includes the all-new NV300 – also unveiled at the Hannover Motor Show – and the pioneering e-NV200 all-electric compact van. It's a portfolio which is backed up by top level service, including Nissan's Customer Promise and unique five-year / 160,000 km LCV manufacturer's warranty*.

Nissan's LCV expertise comes from a rich heritage stretching back more than 80 years, and is demonstrated by the brand's continued success in international awards. The Navara is the current holder of the International Pick-up Award.

The LCV business is playing a key role supporting Nissan's Intelligent Mobility vision, targeting zero emissions and zero fatalities with advanced in-control safety technologies fitted to its current models. These are the building blocks of Nissan's Autonomous Driving program. The Navara EnGuard Concept further supports Intelligent Mobility with its portable battery packs.

Nissan Navara EnGuard Concept

Violent storms, flash flooding, earthquakes and tsunami – stories of natural disasters are regularly on global news media and seem to be more prevalent than ever. For rescue organisations around the world, having the correct tools for their vital work is key to reaching those in need and saving lives. Getting to the heart of the disaster zone quickly and safely is critical.

The Nissan Navara EnGuard Concept is the perfect tool for the job. It features numerous modifications which have transformed the standard Navara pick-up into a life-saving mobile rescue platform. The overall ride height has been raised by 50mm, creating extra ground clearance and further enhancing the vehicle's 'go anywhere' attitude. The front and rear track have been increased by 80mm and 94mm respectively – making them both 1,620mm – to provide extra stability over rough terrain. The standard 18-inch alloy wheels have been

replaced with new 16-inch rims, with striking 285/75/R16 off-road tyres added for exceptional traction.

The most obvious change from the standard Navara is to the flanks of the vehicle, where bespoke overfenders have been fitted to the front and rear wheel arches. Between them are new moulded side steps, with a rubber strip on the upper surface for improved grip. On the driver's side A-pillar is a snorkel, raising the engine's air intake should the vehicle need to wade through rivers.

Key to any Nissan Navara's daily life is its load bed, and the same is true on the Navara EnGuard Concept. It has been reimagined as a mobile base for rescue workers, and fully equipped to provide life-saving support in remote locations and challenging circumstances.

The tailgate now features a new moulded liner and high-level stop light, which has been relocated from the passenger compartment. The tailgate lowers to reveal a load bed packed with rescue equipment, stored in two pull-out trays for ease-of-use by emergency workers. Each tray is made from durable twin-skin fibreglass and extends 800mm.

The shallow upper tray is the full width of the load bed and contains lightweight items such as two-way radios, powerful torches, fire extinguisher, ropes and climbing gear, a shovel and an axe. The lower tray is deeper and narrower, occupying only the central third of the Navara EnGuard Concept's load bed. It is used to store larger items such as the oxygen tank and resuscitation kit, life jackets and buoyancy aids.

Portable battery packs: remote power expands Nissan Intelligent Mobility vision

Flanking the tray, occupying the left and right sections of the load bed, are the two prototype portable battery packs. The Hannover Motor Show marks the debut of this experimental technology, which showcases an alternative use for Nissan's EV battery technology. With more than 250,000 Nissan EVs sold worldwide, the brand is at the forefront of this fast-developing sector and ideally placed to apply its expertise to explore new vehicle sectors and consumer opportunities in the future.

When docked in place the battery packs are constantly in 'charge' mode, using power generated by the vehicle's diesel engine to ensure they're ready for emergency use when required. Each is a 2kW unit and utilises seven Nissan EV battery modules inside a weather-proof machined aluminium housing.

In a rescue environment they could be used to operate specialist cutting or heavy-lifting equipment, and have been specifically designed to provide an efficient alternative to a petrol generator. There are numerous benefits; whereas a generator is noisy, the silent and vibration-free portable battery packs can aid communication between rescue workers and improve the ability to hear calls from survivors. With zero emissions and no flammable fuel, portable battery packs can also be used in enclosed spaces such as a building or a cave.

Two input (charge) sockets are included – a 220v AC socket and a connector for solar panels. The five output (discharge) sockets are two 220v AC sockets and three USB ports. Each portable battery pack has recessed ends to allow it to be carried easily.

As part of its Intelligent Mobility vision, Nissan is working to explore how its pioneering EV battery technology can be integrated further into society. These prototype battery packs provide a real-world example of how it could be applied to new sectors, to provide cleaner, more sustainable power solutions.

Announced earlier in 2016, Nissan's Intelligent Mobility strategy was created to guide the Nissan product evolution and will anchor critical company decisions around how cars are powered, driven and integrated into society, all while remaining focused on creating more enjoyable driving experiences.

High-flying camera drone sends images to the vehicle

The left and right upper edges of the Navara EnGuard Concept's rear deck include motorised pop-up storage solutions. On the driver's side, there is a portable first aid kit to treat simple injuries, plus a portable defibrillator. On the passenger side is a 20.5-inch HD screen, which is designed to display live-streaming video from the drone.

The drone is a DJI Phantom 4, a state-of-the-art unit with an operating ceiling of 6,000 metres. Weighing just 1,380 grammes, it can fly at speeds of up to 20 metres per second for close to 30 minutes. The 12.4 megapixel camera which is located on the underside of the drone has video and stills image capability, and is mounted on a gimbal for three-axis stability. When on board the Navara EnGuard Concept it is stored in the lower rear tray.

Adjacent to the pop-ups are integrated power sockets – four in total, two on each side of the load bed – which are hidden behind individual machined aluminium covers. Each side of the vehicle has an input and output socket, and all are connected to the portable battery packs for their power.

The rear deck is finished with a recessed anodized metal rail at each side, allowing adjustable cleats to be attached so additional cargo can be carried. The rails are identical to the ones used in the load bed of the standard Nissan Navara. Two further storage lockers have been integrated into the Navara EnGuard Concept's new roll-over hoop, behind the C-pillar.

Bespoke exterior lighting and winch support rescue mission

The passenger compartment of the Navara EnGuard Concept features a completely redesigned roof line, which is 136mm higher than on the standard Navara. It incorporates a powerful 360 degree LED lighting rig, with emergency blue strobe lights fitted to the four corners and visible from any angle. The four sides of the rig have white LEDs; the front and rear sides have the option to be switched to high-power mode, providing powerful wide-area illumination for rescue workers.

Matching blue strobes are integrated into the top of all four overfenders, plus in the redesigned front fog lamps and redesigned rear light clusters. All feature a 'secret until lit' design for a discrete appearance.

Other modifications include a powerful winch integrated into the redesigned front bumper, plus a full-sized spare wheel attached underneath the load bed. A towball is also included, providing towing capacity of 3,500kg – the same as the standard Navara.

A light grey gloss exterior finish has been applied to the bodywork, with fluorescent green detailing picking our key features such as the side steps, wheels, power sockets and the winch hook. Decals include reflective emergency chevrons at the base of the four doors, and the identification number 23 in multiple locations, including on the roof. The B-pillar is matt black, while the door handles, door mirror housing and side window mouldings have all been given a premium gloss black finish.

Colour choices defined by emergency role

Choice of colours was given very careful consideration during the vehicle's development, with special focus on its role as a rescue vehicle and how different shades are used in that industry. For example, Nissan research revealed fluorescent green is the most visible colour in daylight, and it's also most easily identifiable by people affected by colour-blindness. Location of colour was also important. For example, the chevrons are at the base of the doors so they are picked out by the headlights of approaching vehicles at the earliest opportunity.

For the interior of the Nissan Navara EnGuard Concept, all the standard vehicle's metallic cabin details have been changed to a premium black colour. Removing this decorative finish creates a more functional appearance, and also allows the occupants' eyes to focus on the controls they will need to carry out their rescue work. The only exception is the interior door handles, which keep their chrome finish so they can be picked out against the darker trim.

Again, how colour is used on real-world rescue vehicles was considered; for example, interior door pockets have been given fluorescent bases so they can be easily located, and vehicle occupants can see if there is something in them.

The redesigned seats are covered in hard-wearing SuperFabric, with a distinctive green 'body armour' design and reflective white piping on the corners so they can be easily seen in the dark.

In-control technologies include Around View Monitor

Being based on the top-spec Tekna trim grade means the Navara EnGuard Concept comes with many standard features which would be useful in a rescue situation. These include the NissanConnect sat-nav system for finding the fastest route, plus dual-zone climate control and heated seats for occupant comfort. Most useful would be Nissan's pioneering Around View Monitor, a 360-degree camera system which displays an unobstructed bird's eye image of the vehicle and its environment on the dashboard screen. It's an ideal tool for rescue workers, allowing them to navigate difficult off-road terrain without causing delays by having to get out of the vehicle.

Mechanically, the vehicle has also been enhanced. Like all Navaras, it's built around a rugged ladderframe chassis, though the Navara EnGuard Concept features a new fully adjustable performance suspension system with uprated nylon bushes to further improve off-road capability.

The brakes are also new, with four-cylinder drilled and vented 300mm disc brakes all round. The engine remains unchanged, using the Navara's flagship 2.3-litre 190PS twin-turbo diesel, mated to a seven-speed automatic transmission with on-demand 4WD. This engine meets the latest Euro 6 standard and includes a Selective Catalytic Reduction system to lower NOx

emissions. CO_2 emissions on the Navara EnGuard Concept are 183g/km, but start as low as 159g/km on the 2WD 160hp manual version of the production Nissan Navara.

The Nissan Navara EnGuard Concept and the Nissan portable battery pack have been developed by Nissan Design Europe (NDE), based in London, UK.

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Notes for editors

* Nissan has announced at Hannover Motor Show 2016 that a new five year / 100,000 km manufacturer warranty will be available from October 2016 on the 100% electric e-NV200.

Overall dimensions

	Nissan Navara EnGuard Concept	Nissan Navara
Length	5,365mm	5,330mm
Width (inc. mirrors)	2,083mm	2,085mm
Height	1,976mm	1,840mm