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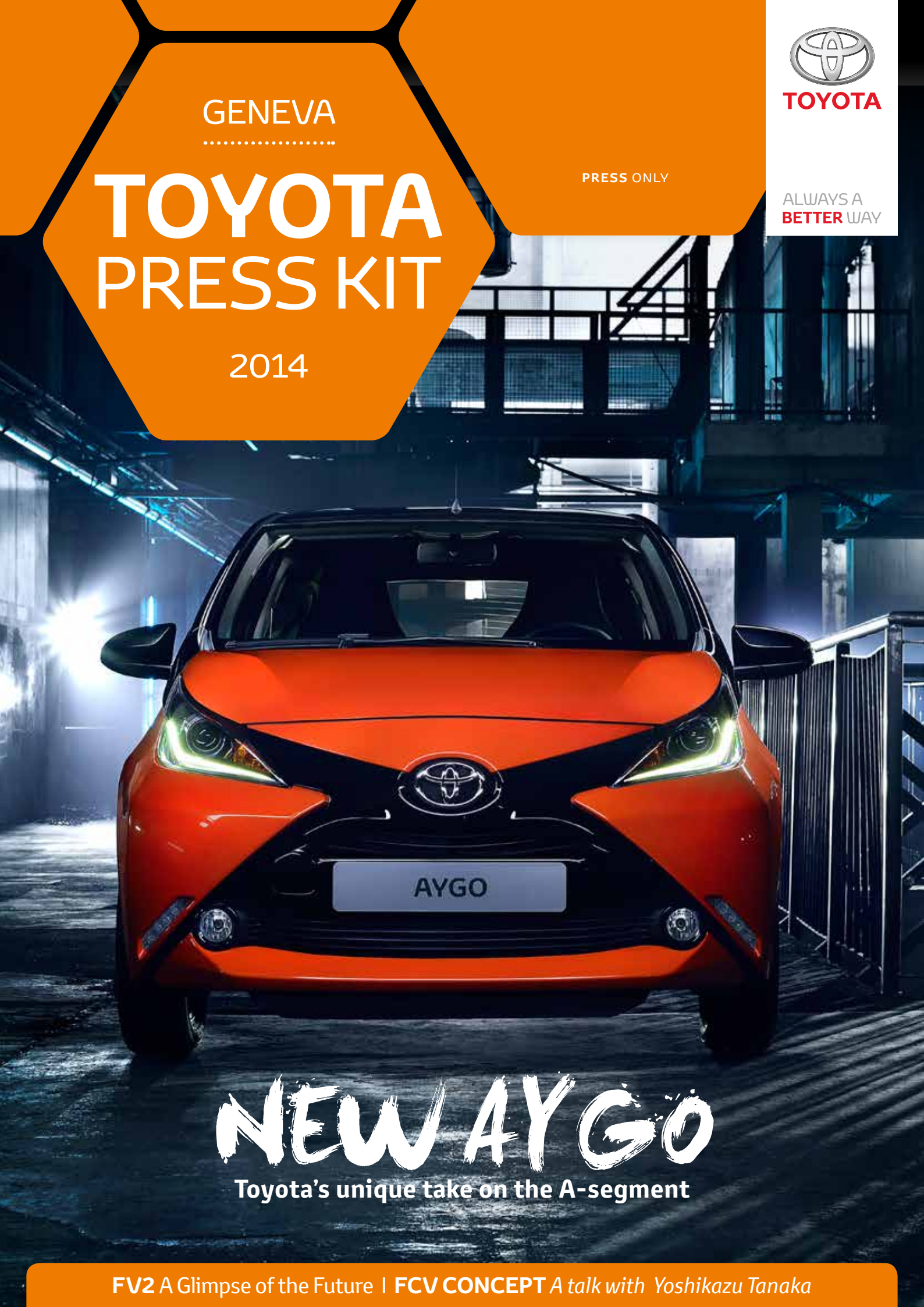
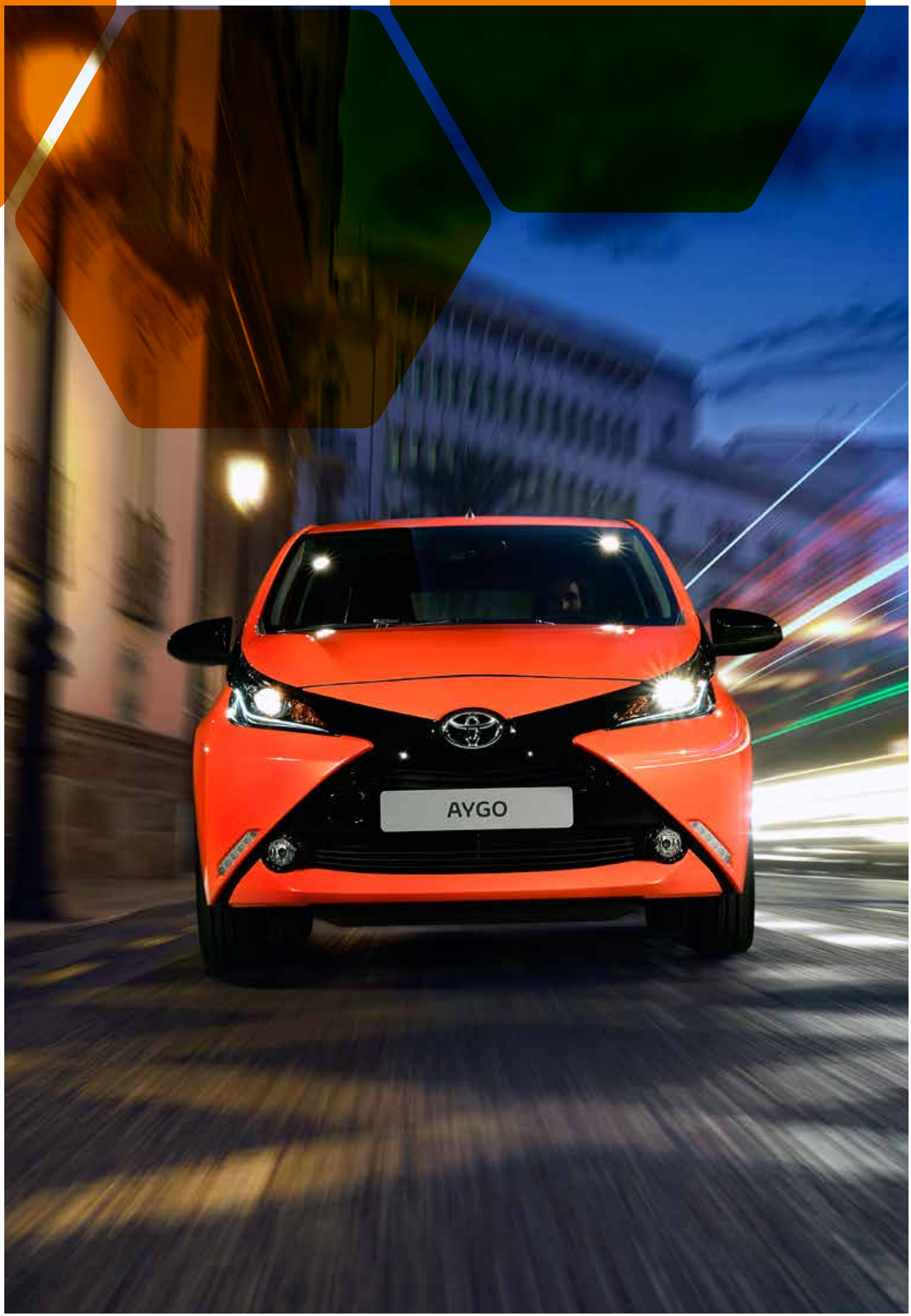


NEW AYGO

Toyota's unique take on the A-segment

FV2 A Glimpse of the Future I **FCV CONCEPT** *A talk with Yoshikazu Tanaka*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NEW AYGO

Toyota's unique take on the A-segment

New AYGO is driven by Akio Toyoda's determination to make ever better cars that are even more fun to drive. It builds on the current AYGO's strengths of a frequently refreshed model line-up, engaging design and driving enjoyment with a new, more playful dimension. New AYGO's design theme was dubbed 'J-Playful'; a link to contemporary Japanese youth-culture, which favours strong and outspoken shapes and forms.
From an iconic new frontal 'X' design to its range of customisation options, all styling and engineering decisions for new AYGO were purposefully made with fun in mind.

A DESIGN THAT FORCES PEOPLE TO TAKE SIDES

"My main driver was to create a car that people would fall in love with" says David Terai, Chief Engineer of new AYGO. "Traditionally, the appeal of A-segment cars has come from their practicality and compactness, and from their price-tag. But, all too often, they lack in desirability. The elements that make you truly want a car, that make you grab that brochure again and again while you are deciding on your purchase, are compromised. Design is treated as secondary, and there isn't much equipment to select from."

"There seems to be an implicit agreement amongst vehicle planners, stylists and engineers that drivers of small cars don't spend much time behind the wheel anyway, and that therefore they won't mind having to compromise. I simply cannot believe that this is true. I am convinced that these drivers -just like any other- want a car that they can be proud of, and I took it as my task to create such a car."

This approach explains why new AYGO builds on the legacy of the first generation, which already went some way towards rejecting the conventional and basic A-segment stereotype. Despite its compact dimensions, it has a striking appearance, with dramatic and sophisticated yet playful

lines. It's a design that forces people to take sides; that will not appeal to everyone. And David Terai maintains that this was exactly his intention.

"If you aim for an emotional link between customer and design, you have to accept that tastes differ" he says. "And in a crowded market place, it is better to have a design that half the people absolutely love, rather than one that nobody objects to. That is why new AYGO wants to stand out."

And it does. Both the interior and the exterior have been conceived in such a way as to allow a wide variety of different executions. So now, new AYGO's not only fun to drive, but also fun to customise to your own bespoke style. And each of the resulting personalities has the ability to appeal to a specific taste.

What's more, about 10 parts around the vehicle can be easily replaced by alternative colours and executions, allowing customers to create their very own AYGO. Clever construction and a carefully considered installation strategy keep this personalisation affordable and straightforward, ensuring that both price and delivery time remain fitting for the A-segment.

Life on board is now even better, thanks to increased cabin space and an array of innovative equipment designed to fit the lifestyle of the younger customer base that is likely to embrace new AYGO. The most eye-catching example is the x-touch multimedia system. Its 7" full-colour touch screen controls numerous on-board systems, and MirrorLink smartphone connectivity allows the car to be seamlessly integrated into the busy online lives that most of us lead these days.

New AYGO is equipped with an improved version of Toyota's award-winning 3-cylinder, 1.0 litre VVT-i petrol engine. Still one of the lightest engines in its class, this remarkable unit incorporates numerous revisions that enhance performance and help deliver class-leading fuel efficiency and CO_2 emissions.

With new AYGO now ready for its first customers, Chief Engineer Terai is a happy man: "I wanted to avoid the traditional compromises of the A-segment, by creating something that I could be truly proud of. When I look at the car now, it makes me smile and fall in love, so I feel I have succeeded." It's Toyota's hope that the smiles don't just end there, and that new AYGO can bring a sense of irreverent fun to drivers and passengers alike.

J-PLAYFUL DESIGN

New AYGO was designed to seduce. The design theme was dubbed 'J-Playful'. It takes its inspiration from contemporary Japanese youth-culture, which favours strong and outspoken shapes and forms.

"Pride of ownership comes first and foremost from the design" says Chief Designer Nobuo Nakamura. "Every time you look at your new car parked out in front, you want to feel a reconfirmation of the choice you've made. That is why we didn't accept any compromise on styling."

Compact packaging was fundamental to the demands of new AYGO's largely urban-based customers. The overall length has increased by just 25 mm to 3,455 mm, maintaining new AYGO's class leading com-

pactness. Despite a 7 mm increase in front headroom, vehicle height was reduced by 5 mm for aerodynamic efficiency. And the track was widened by 8 mm at both the front and rear to improve vehicle stance.

Though compact and playful, the exterior exudes robustness. This is no accident, as Nakamura goes on to explain. "Designing a compact car such as this one is not easy. You want it to be loveable, but at the same time it also needs to have proper street credibility. Therefore, it should look solid and strong, fully occupying its space and having real road presence."

This solidity comes from a strong monoform which provides the overall volume of the design. In order to add a playful character, the concept was based on the expansion of a soft object within this rigid structure. As it bursts through the hard shell, it creates break lines and forms the AYGO's bold frontal 'X' graphic. This spreads outwards across the surface of the bodywork, and contains all the vehicle's key components, including upper and lower grilles, headlamps, foglamps, and even mirrors and side glazing.

"To protect the integrity of this design, we had to make some tough choices" says Nakamura. "For example, for the headlights to be narrow enough to be located within the 'X' graphic, they had to incorporate projector technology. This is exceptional in the A-segment, which tends to favour the cheaper but larger reflector type, and a good example of how often we rejected compromise in order to end up with a better car."

This powerful 'X' graphic also forms the basis for the exterior customisation, which is integral to the design of new AYGO.

In profile, the roof has been lowered and the front header moved forwards. As a result, the cabin's centre of gravity also shifts to the front, creating a more balanced and forward leaning posture. This is further emphasized by a sloping beltline which terminates in the forward leaning rear light clusters. The roof itself features a new, double bubble-style profile and an integral rear spoiler to aid aerodynamics.

The shape of the side-glazing differs between the 3- and 5-door models, the latter extending its window graphic into the rear light clusters, giving a feeling of length appropriate to a 5-door vehicle.

The rear of new AYGO mirrors the frontal design statement. In this case, the tailgate and lower bumper form the break lines splitting the solid surface of the vehicle. The lamp clusters are set within a hexagonal tailgate, and the upper bumper section widens into strongly protruding wheel arches which give the vehicle a broad and stable stance.

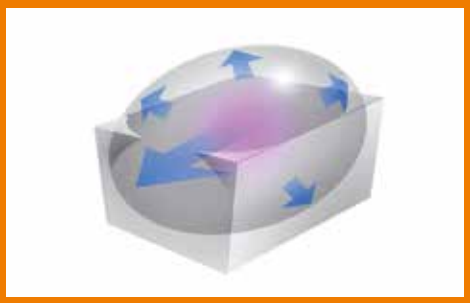
KEEP IT SAFE

The new Toyota AYGO is equipped with a wide range of active and passive safety features.
It offers, fitted as standard, ABS (Anti-lock Braking System), EBD (Electronic Brakeforce Distribution), VSC (Vehicle Stability Control), curtain airbags, Isofix child seat attachment, a tyre pressure monitoring system, an adjustable speed limiter and, newly adopted, Hill-start Assist Control (HAC) and emergency brake signalling.
New AYGO's high rigidity bodyshell is designed to not only minimise cabin deformation during front, side and rear collisions, but also absorb pedestrian collision impact forces.

COMFORT WITHIN

The main theme for the interior design is provided by the trapezoidal centre console, the design of which is mirrored throughout the cabin in such elements as air vents, door trim and the gear lever surround.

A soft object dwells inside a rigid structure



The soft object expands and bursts through the hard shell

It creates break lines and forms the AYGO's bold frontal 'X' graphic

The console supports a wide dashboard with a matt anti-glare finish, framed by sleek A-pillars designed to increase driver visibility. The instrumentation features a concentric ring meter design. Permanently lit, it incorporates a central multi-information display with a large font for optimum legibility.

As with the exterior, numerous interior elements can be customized.

"We worked a lot on ergonomics," says Chief Engineer Terai. "Mindful of the younger type of customer we see in the segment, we reduced the steering wheel angle from 28 to 26.6 degrees, we reduced the front seat hip point by 10 mm, and we equipped the driver's seat with height adjustment. So finding your preferred seating position should be easy."

Despite an unchanged wheelbase of 2,340 mm, the length of the passenger compartment has been increased by 9 mm, with 20 mm wider armrests further contributing to front seat comfort.

Finally, the luggage capacity was increased by 29 litres to 168 litres, and access has been improved thanks to a 75 mm wider load space opening between the tailgate sill and the rear seat back.

THE LIGHTS THAT LEAD THE WAY

Standard on all new AYGO models, the headlamp clusters incorporate Poly-Ellipsoid System (PES)-type halogen headlamps for a longer reach and broader illumination under both low and high beam conditions, and integral LED clearance lamps which give the AYGO a unique light signature, making it recognisable from afar.

NEW AYGO

CREATING YOUR VERY OWN: CLEVER CUSTOMISATION

With a comprehensive range of simple, affordable and readily available customisation choices, new AYGO customers can tailor their car to their personal taste.

"This was particularly important to me," says Chief Engineer Terai. "Firstly, because customers have become used to a wide variety of choice in colour and execution for most of their purchases, and it's time for the automotive industry to catch up. And, secondly, because the ability to have very much your own AYGO is key to achieving the desirability that I wanted. Knowing that your car is somehow unique will make it all the more special to you."

Interchangeable parts on the exterior (the X-shaped front grille, rear bumper insert, front fender garnish and alloy wheels) and the interior (the instrument panel, centre console, air vents, shift know and gear lever surround) can easily be changed within a limited amount of time, even after several years of ownership.

CONCEPT

The challenge was to ensure that customer choice remained as clear and simply structured as possible. To accomplish this, customisation was built on 4 pillars: Diversity, Simplicity, Affordability and Availability.

Thanks to a straightforward range of 3 grades, 3 special edition vehicles (which will be renewed on a regular basis), and 2 exterior and interior packs, customers will have a clear understanding of the many possibilities this simple customisation structure gives them to create the car of their choice.

Via this structured approach, delivery of new AYGO can be ensured within a short lead time, regardless of the customer's personal, exterior and interior customisation preferences.

GRADES

Standard equipment on new AYGO is generous. All cars feature an AM/FM audio system with USB and AUX connections, LED Daytime Running Lights (DRL), Vehicle Stability Control (VSC) and Hill Start Assist, fitted as standard.

'x-play' lies at the heart of the new AYGO grade strategy. This version is the basis for all customisation, and also forms the foundation for the special editions 'x-cite', 'x-clusiv' and 'x-pure'. Standard exterior finishes feature a piano black x-shaped front grille and a set of 15 inch steel wheels. On board, standard equipment includes audio system control switches mounted on the leather steering wheel, a height adjustable driver's seat and a speed limiter.

Equipped with a large canvas top and 15 inch silver alloys, the stylish 'x-wave' sits at the top of the new AYGO grade ladder. The

interior features body-coloured inserts and partial leather seats. The standard AYGO audio-system is upgraded to the x-touch multimedia system, with a touch-screen, rear view camera and MirrorLink smartphone connectivity.

The grade offer is completed with the 'x' entry grade. With a matt black front grille treatment, it features all the standard new AYGO equipment, and rides on 14 inch steel wheels.

PACKS

Customers wanting to give their new AYGO that extra touch without resorting to piece-by-piece personalisation can opt for one of the Exterior and Interior Packs.

One pack allows customers to change the colour of the x-shaped front grille and the rear bumper insert. The other consists of stickers to highlight the lower portion of the car, at the front, rear and sides.

With the interior packs it's possible to change the colour of the air vents and gear lever surround or alter the finish of the instrument panel, centre console and gear lever surround.

A COMPELLING PACKAGE

Whether through its design, equipment, potential for personalisation or efficient powertrain, new AYGO has the power once again to make its mark on the A-segment. When sales commence in the summer of 2014, it will add an interesting new perspective for customers looking for clever packaging, style and, above all, fun.

SPECIAL EDITIONS

With its Pop Orange body colour, piano black details and 15 inch bi-spoke glossy black alloys, 'x-cite' is the enfant-terrible of the new AYGO range. The most extrovert variant, it adds a sporty touch to the range.

'x-clusiv' brings an additional level of sophistication to new AYGO through the combination of a Midnight Black body colour and Super Chrome detailing.

'x-pure' comes in Cool White with Super Chrome exterior detailing, for a stylish and minimalist execution.

ENDLESS SKIES

New AYGO 'x-wave' is fitted with a large, power-operated canvas top with a generous 785mm x 730mm opening; just one example of the additional equipment designed to suit a more demanding A-segment customer.

ALL INTERCHANGEABLE PARTS CAN EASILY BE CHANGED, EVEN AFTER SEVERAL YEARS OF OWNERSHIP

X-TOUCH – THE WORLD AT YOUR FINGERTIPS

Taking affordable multimedia systems into the next decade, Toyota x-touch offers new AYGO owners an unprecedented combination of on-board multimedia and smartphone connectivity.

x-touch uses a 7" full-colour touch screen fully integrated within the instrument panel. It is the first system in the segment to have a rear view camera fitted as standard.

The Toyota x-touch main menu has a simple, 5 icon structure, offering at-a-glance identification of all functions for an intuitive user experience.

The 'Audio Source' menu groups together AM/FM radio, optional DAB reception, music streaming via Bluetooth, and audio via AUX and USB, with the facility to display album cover art.

When Audio is turned off, a large digital clock featuring retro, 'flip-over' numerals is displayed, adding a playful touch to the system design.

Via the 'Phone' function, the driver can access contacts, make phone calls and use an on-screen send/receive function for text messages.

A new MirrorLink function can be activated through the 'Connect' menu. Once a compatible smartphone is connected, MirrorLink will replicate the phone's screen and compatible apps on the x-touch display. Smartphone functions can then be easily accessed via the system touch-screen itself.

'Car Information' groups together all on-board vehicle information, with trip computer displays including remaining fuel range, instant and average fuel consumption, elapsed journey time and past journey records.

Finally, a wide selection of compatible apps allows the driver to access navigation and social media channels.

NEW AYGO
SPECIFICATIONS

ENGINE	New AYGO	New AYGO (with x-shift)	New AYGO (Eco version)
Type	1.0 VVT-i	1.0 VVT-i	1.0 VVT-i
Fuel Type	Petrol	Petrol	Petrol
Valve mechanism	4-valve DOHC	4-valve DOHC	4-valve DOHC
Displacement (cm^3)	998	998	998
Bore x Stroke (mm)	71 x 84	71 x 84	71 x 84
Compression ratio (:1)	11.5	11.5	11.5
Max. power (DIN hp) kW/rpm	(69) 51 / 6,000	(69) 51 / 6,000	(69) 51 / 6,000
Max. torque (Nm/rpm)	95 / 4,300	95 / 4,300	95 / 4,300
BRAKES			
Front	Disc – 247mm x 20 mm	Disc – 247mm x 20 mm	Disc – 247mm x 20 mm
Rear	Drum – 200 mm (inner diameter)	Drum – 200 mm (inner diameter)	Drum – 200 mm (inner diameter)
SUSPENSION			
Front	MacPherson strut	MacPherson strut	MacPherson strut
Rear	Torsion beam	Torsion beam	Torsion beam
TRANSMISSION			
Type	M/T	MMT	M/T
PERFORMANCE			
Max. speed (km/h)	160	160	160
0-100 km/h (sec)	14.2	15.5	14.3
FUEL CONSUMPTION (subject to final homologation)			
Combined (l/100 km)	4.1	4.2	Below 3.9
Fuel tank capacity (l)	35	35	35

CO_2 EMISSIONS (subject to final homologation)	New AYGO	New AYGO (with x-shift)	New AYGO (Eco version)
Combined (g/km)	95	97	88
VEHICLE WEIGHT			
Curb weight (kg)	840 - 890	855 - 910	860 – 905
Gross vehicle weight (kg)	1,240	1,240	1,240
EXTERIOR DIMENSIONS			
Length (mm)	3,455	3,455	3,455
Width (mm)	1,615	1,615	1,615
Height (mm)	1,460	1,460	1,460
Front overhang (mm)	675	675	675
Rear overhang (mm)	440	440	440
Wheelbase (mm)	2,340	2,340	2,340
Drag coefficient (Cd)	0.29	0.29	0.28
Wheel size (inch)	14" or 15"	14" or 15"	14" or 15"
Tyre size	165/65R14 or 165/60R15	165/65R14 or 165/60R15	165/65R14 or 165/60R15
INTERIOR DIMENSIONS			
Interior length*	1,630*	1,630*	1,630*
Interior width	1,250 (3 door) 1,300 (5 door)	1,250 (3 door) 1,300 (5 door)	1,250 (3 door) 1,300 (5 door)
Interior height	1,205 (normal) 1,155 (canvas top)	1,205 (normal) 1,155 (canvas top)	1,205 (normal) 1,155 (canvas top)
Couple distance	806	806	806
Luggage space (liter)	168	168	168

* from accelerator pedal to the rear seat hip point

WHAT WAS ALREADY ONE OF THE LIGHTEST ENGINES OF ITS TYPE WAS MADE EVEN LIGHTER

A CLEVER AND CHARACTERFUL ENGINE

No other group of motorists is as loyal to the petrol engine as the A-segment, where it is chosen by 85% of customers. With its comprehensively revised version of Toyota's award-winning 3-cylinder engine, new AYGO provides the ideal balance of response and efficiency that they're looking for.

"We wanted to improve performance, as well as economy," explains Chief Engineer Terai. "In the A-segment, running costs are paramount -customers don't want to spend a fortune on fuel bills. But at the same time, we didn't want to resort to costly technology to reduce consumption, as this would have driven the vehicle price up too much. So our challenge was to come up with relatively simple yet clever ways to achieve our targets."

That explains why the list of improvements to the 998 cc unit is a long one.

First, the combustion character of the engine was improved. The compression ratio has been increased from 11.0:1 to 11.5:1. The combustion chamber now benefits from better cooling, and a high tumble intake port ensures an optimal air/fuel mix in the cylinder. The Variable Valve Timing programme has also been optimised.

Next, friction losses were reduced through the adoption of a low friction timing chain with an auto-tensioner. Diamond-like Carbon (DLC) valve lifters and a twin-tank oil pan further contribute to reduced internal resistance.

And finally, what was already one of the lightest engines of its type was made even lighter by fitting a cylinder head with a built-in exhaust manifold.

The engine now develops greater power and torque – 51kW (69 DIN hp) at 6,000 rpm and 95 Nm at 4,300 rpm. 85 Nm of torque is available from as little as 2,000 rpm.

New AYGO comes in both standard and Eco-versions. The latter benefits from a longer 4th and 5th gear, low Rolling Resistance Coefficient.

The standard version achieves a drop in fuel consumption from 4.4 to 4.1 l/100km , which translates into a 7 g/km* drop in CO_2 emissions to just 95g/km*. The Eco unit does even better, with fuel economy of below 3.9 l/100 km* and CO_2 emissions of less than 88 g/km*.

Through all of these improvements, close attention was paid to maintaining the engine's sprightly character. It will still rev happily to high speeds and, though sound insulation has been improved, its sporty sound-signature is still there when pushed hard.

Finally, extensive work was done on the aerodynamics of the car, to further enhance efficiency. This includes the optimisation of airflow around the bodywork to reduce air resistance, the use of front and rear spoilers, floor undercovers and rear spats to control the underfloor airflow, and the adoption of a four-way duct to optimise airflow to the engine bay.

As a result, the drag coefficient of new AYGO has been reduced from Cd 0.30 to Cd 0.29, with a further reduction to Cd 0.28 for the Eco variant.

X-SHIFT

The x-shift transmission is available as an option on new AYGO. This vastly improved automated manual transmission has a fully automatic shift mode and no clutch pedal, using computer control to synchronize engine, clutch and transaxle for quick and precise shifting.

The transmission's gear ratios have been revised for a better balance of driving pleasure and fuel economy.

Selecting E (Easy Mode), M (Manual) or R (Reverse) allows the car to 'creep' like a conventional automatic. In E mode, the system selects a suitable gear according to the accelerator pedal, vehicle speed and driving conditions. New AYGO's x-shift is equipped with the kick-down function standard to automatic transmissions. Moreover, it is possible to override the system temporarily by using the steering wheel-mounted paddles.

Selecting M mode allows the driver to manually change gear via either the shift lever itself or with the paddle switches.

When equipped with x-shift, new AYGO returns fuel consumption of 4.2 l/100 km* and generates CO_2 emissions of only 97 g/km*.

* Subject to final homologation.

TOYOTA FV2

A GLIMPSE OF THE FUTURE

Embodying Toyota's 'Fun to Drive' philosophy in a future world in which vehicle technology has progressed significantly, the FV2 ⟨Fun Vehicle 2⟩ concept car makes its European debut at the 2014 Geneva motor show.

The vehicle enhances the driving experience by connecting both physically and emotionally with the driver, the increasing strength of the bond making it more fun to drive the more it is used.

Rather than via a conventional steering wheel, the Toyota FV2 is operated by the driver shifting his or her body to intuitively move the vehicle forwards or backwards, and left and right.

Moreover, by using intelligent transport system technology to connect with other vehicles in the area and the local traffic infrastructure, the FV2 provides a wide variety of safety information, including advanced warnings about other vehicles in blind spots at intersections, promoting safer driving.

Toyota envisions the FV2 and its owner developing an ever-deepening driver-vehicle relationship similar to the trust and understanding that a rider might develop with a horse.

By incorporating technology under development in the Toyota Heart Project, both the driver and the FV2 can grow together. The vehicle uses both voice and image recognition to determine the driver's mood, accumulated driving history to suggest destinations, and driving technique information to assist the user in developing driving skills.

In addition to an Augmented Reality (AR) display in the windshield, the vehicle body colour and exterior display can be changed at will, creating a more intimate relationship between driver and vehicle.

THE TOYOTA HEART PROJECT

The Toyota Heart Project is a new communication research project developed under the theme 'Inspiring the Heart, Inspiring You'.
Basing its research on a unique, 'open innovation' method, the project envisages a future in which, in addition to simply talking and listening, humans and artificial intelligence will be able to engage in emotional communication which includes the use of expressions and gestures, and the recollection of past events.
Toyota's Kirobo and Mirata humanoid communication robots, which incorporate technologies for communication and artificial intelligence, are part of this research project.

GOOD TO KNOW

- The FV2's Augmented Reality windshield display supplements computer-generated data with sensory information received from the user's environment.
- The Toyota Heart Project's 'open innovation' method is a research and development technique that transcends organisational frameworks to gather diverse knowledge and technology.

FV2

DIMENSIONS (MM)	
Length	3,000
Width	1,600
Height	990 (sleep mode)
	1,780 (driving mode)
Wheelbase	2,360

TOYOTA FCV CONCEPT

A TALK WITH YOSHIKAZU TANAKA

Planning and development leader for fuel cell vehicles

Heralding the fuel cell vehicle Toyota plans to launch in 2015 as a pioneer in the development of hydrogen-powered vehicles, the Toyota FCV Concept makes its European debut at the 2014 Geneva Motor Show. In charge of planning and development for fuel fell vehicles, Yoshikazu Tanaka discusses the numerous advantages of this promising technology.

Yoshikazu Tanaka is Product General Manager of the Product Planning Group. Awarded a master's degree in engineering at Kyoto University, he joined Toyota in 1987. He was assigned to the development of automatic transmissions such as the 4-speed AT for the first-generation Yaris.

From March 2006 he was engaged in Plug-in Hybrid vehicle planning and development, and, in 2007, became planning and development leader for the Prius Plug-in project. Since January 2012, he has been in charge of planning and development for fuel cell vehicles.

Tanaka-san, let's start by discussing fuel cell technology in general. Why does Toyota consider fuel cell to be the best solution for future mobility?

'We regard fuel cell vehicles as promising environmentally friendly vehicles of the future, with high total energy (Well-to-Wheel) efficiency. Hydrogen is an important energy resource for the future because it can be manufactured from solar, wind, and other natural energy sources. It has a higher energy density than electricity stored in a battery, and is easy to store.

The specific merits of fuel cell vehicles include energy diversification, zero emissions, and the same usability as current gasoline vehicles. Fuel cell vehicles have the potential to become the ultimate environmentally friendly vehicle of the future, with the capability of achieving sustainable mobility.'

Can you describe the Toyota vision/philosophy of future mobility?

'Toyota believes that environmentally friendly vehicles can only truly have a positive impact if they are widely used. From the perspective of mobility zones based on travel distance, hybrid and plug-in hybrid vehicles can match the everyday usability of a current gasoline car, and become mainstream environmentally friendly vehicles. An electric vehicle is suitable for short-distance commuting, because of its short cruising distance and long charging time.

On the other hand, fuel cell vehicles are extremely versatile, with a long cruising range and a short fuelling time. However, the hydrogen infrastructure needs to be developed. At the moment, each environmentally friendly vehicle has its own shortcomings, and it is up to our customers to decide which vehicle is best for them.

In order to give these customers what they want within an appropriate timescale, we are committed to developing a broad range of technologies -including plug-in hybrid, electric vehicle and FCV, corresponding to the simultaneous diversification of energy sources.'

Toyota began work on fuel cell technology in 1992, and will put its first FCV on the market in 2015. Can you tell us what the main issues you have had to tackle were, as well as the biggest evolutionary steps?

'For a full-scale market launch of an FCV, the most important issue is the reduction of the fuel cell system cost and, hence, the retail price. We've worked on making FC systems more competitive; higher-powered, smaller, lighter and cheaper.

Our current FC system has a world-class output power density (3.0kW/ℓ), which is twice as high as that of our previous FCV, the Toyota FCHV-adv. Also its output power is more than 100kW, despite significant unit downsizing.

We designed a new fuel cell stack that allows water to recirculate within, from cathode to anode, humidifying internally and maintaining the proper moisture balance. Eliminating the need for a humidifier allowed us to simplify the structure of the fuel cell system, making it lighter, smaller and more cost-effective.

For a full-scale market launch in 2015, the cost of the fuel cell system will be 95% lower than that of the Toyota FCHV-adv.'

What is the link today between the Toyota's expertise in hybrid technology and the FCV? Did the hybrid expertise help you in the FCV development?

'We regard our hybrid systems as the core component technology necessary to develop eco-cars such as the plug-in hybrid, electric vehicle and FCV. We've been able to readily and rapidly apply the technical know-how we've acquired through the development of hybrid technology to other eco-cars.

In the case of the Toyota FCV Concept, we have used the current hybrid system's electric motor, power control unit and other parts and components. By using existing parts, we are aiming to both improve reliability and minimize cost.'

Do you think that a fuel cell vehicle can already match the everyday usability of a current gasoline car?

'An FCV has the same cruising range – more than 500 km - as a petrol car and needs an equally short fuelling time -approximately 3 minutes, making it every bit as convenient for day-to-day use as a current gasoline car. Also, its long cruising range makes it possible to apply FCV technology to larger vehicles such as buses and heavy trucks.'

How do you expect FC technology to evolve between 2015 and 2020?
'In preparation for a period of full-scale FCV popularization after 2020, we have placed a high priority on the research and development of fuel cell vehicles to enable sales of several tens of thousands of vehicles per year. We will accelerate our efforts to increase the commercial appeal of fuel cell vehicles by lowering the vehicle price through reducing the costs of the FC system, by improving durability, and so on...'

Are there other fuel cell-related initiatives within the Toyota group?
'Toyota Group companies will be conducting research and development into fuel-cell buses (Hino Motors, Ltd.), stationary fuel cell cogeneration systems for residential use (Aisin Seiki Co., Ltd.), and fuel-cell forklifts and other industrial vehicles (Toyota Industries Corporation).

A new FC bus jointly developed by Toyota and Hino Motors will be launched in 2016. Toyota Group companies utilise jointly the technology and know-how which each individual company has cultivated. We will continue these close relationships, and accelerate development of the FCV.'

How do you see hydrogen production evolving in the next years?
'Hydrogen can be manufactured from a variety of natural energy sources. We should choose the most cost-effective and least CO2 emission-heavy way to manufacture it, based on the specific circumstances of each region.'

How do you see the evolution of the fuelling infrastructure?
'Moves to introduce a hydrogen fuelling infrastructure in the United States are advancing in California. Progress is also being made in Europe, particularly in Germany and Scandinavia. Development of a hydrogen infrastructure will be essential for the widespread adoption of fuel cell vehicles, and we expect that infrastructure development to advance through the efforts of infrastructure-related industries with the support of the government.

Toyota will continue to develop fuel cell vehicles that can achieve high levels of consumer satisfaction, and will introduce vehicles primarily in areas where hydrogen infrastructure development is advancing. If consumer support for fuel cell vehicles can be obtained, this will provide impetus for the further development of the necessary infrastructure.

The lack of an adequate charging network is currently handicapping Electric Vehicle development? Do you think that the FCV will have to face a similar issue?
'Because the FCV has the same cruising range and refuelling time as a conventional petrol car, the situation is different to that in which the EV currently finds itself. In terms of FCV infrastructure development, locations of refuelling sites is far more important the number of sites. Hydrogen stations should be strategically placed in order to provide maximum coverage without needing too many stations to be constructed. So, we can state that, in Europe today, only 77* stations and over

** Source: H2stations.org (TÜV SÜD)*

GOOD TO KNOW

More than 500 km
Cruising range

GOOD TO KNOW

More than 100 kW
FC output power

"WE CONDUCTED A VARIETY OF STRICT TESTS, INCLUDING CRASH TESTS, AND THE SAFETY OF THE HYDROGEN FUEL SYSTEM IS CONFIRMED THROUGH THEM."

100* next year will allow a large European territory coverage, connecting for instance Norway to Switzerland via Sweden, Denmark and Germany. Even if it is not as convenient as today's petrol station, some 200-300 km between each station is a reasonable starting point.

Toyota will continue to work together with governments, related companies and research institutes, and to develop fuel cell vehicles that can achieve high levels of consumer satisfaction, which would provide impetus for the development of infrastructure.'

Are there any safety issues regarding the use of hydrogen in a car?
'The risk of a hydrogen explosion is relatively low unless the gas accumulates in a confined space. So Toyota's basic safety concept for the hydrogen in an FCV is primarily to prevent leakage by design and material selection. In the event of hydrogen leakage, the gas is detected and the hydrogen tank main shutoff valves are closed immediately to prevent a large leak. Our design does not allow leaking hydrogen to accumulate, or come into the cabin.

We have conducted a variety of strict tests, including crash tests, and the safety of this system has been confirmed through them.'

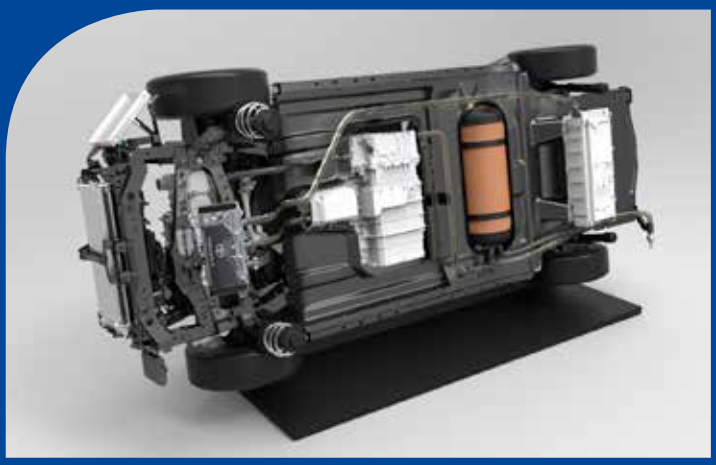
Are there any specific recycling issues?
'Regarding parts we utilize from the existing hybrid system, we will recycle them in the same way as before. We will also aim for the same levels of recycling for any fuel cell-specific components.'

Now, about the FCV Concept itself, what are the merits of the FCV?
A fuel cell Vehicle has four merits: firstly, usability –a long, more than 500 km cruising range and a short, 3 minute fuelling time; secondly, driving pleasure –strong, smooth acceleration and silent operation; thirdly, zero emissions; and, finally, energy diversification.'

What are the main design features of the Toyota FCV Concept?
'To create a vehicle that expressed a sense of values never before available, our aim was to come up with a design that let people recognize at a glance that this car offered the practically of a sedan, the joy of driving, the experience of high environmental performance and the new values of an FCV.

With the theme "giving shape to the wisdom of fuel cells", we sought a new genre of design. For the front, we expressed an image of "breathing in air and emitting water" and use a design that emphasizes two grilles, one on the left and one on the right.'

Does the FCV Concept body shape reflect any particular technical needs of the fuel cell stack, for example, the size of the air intake?
'With Toyota's proprietary, small, light-weight FC Stack and two 70 MPa high-pressure hydrogen tanks placed beneath the specially designed body, the Toyota FCV Concept can accommodate up to four occupants. The bold front view features pronounced air intakes, evoking a fuel cell stack.'



GOOD TO KNOW

3.0 kW/l
FC output power density

GOOD TO KNOW

More than 170 km/h
Maximum speed

"IN THE CASE OF THE TOYOTA FCV CONCEPT, WE HAVE USED THE CURRENT HYBRID SYSTEM'S ELECTRIC MOTOR, POWER CONTROL UNIT AND OTHER PARTS AND COMPONENTS."

What is the status of development of the fuel cell sedan scheduled for launch in 2015?
'We are in the final stages of development, conducting all kinds of tests, on ordinary roads and in cold climates and extremely hot climates, for example. While continuing these road tests and other testing, we will persist with development until we achieve a standard that will both satisfy consumers and further improve the vehicle's reliability.

Will the exterior or chassis of the Toyota FCV Concept be used for the fuel cell vehicle scheduled to launch in 2015?
'We are thinking of using the Toyota FCV Concept packaging. The Concept exterior design does take a commercial launch into consideration, however, there are design elements that are show model-specific only. As such, the FCV will not be launched just as it appears in Geneva.'

DESIGN LANGUAGE

The Toyota FCV Concept's exterior design evokes two key characteristics of a fuel cell vehicle: the transformation of air into water as the system produces electricity, and the powerful acceleration enabled by the electric drive motor. The bold front view features pronounced air intakes, while the sleek side view conveys the air-to-water transformation with its flowing-liquid door profile and wave-motif fuel cap. The theme carries to the rear view, which suggests a catamaran's stern and the flow of water behind.

GOOD TO KNOW

-30 °C
Cold start capability

"FOR A FULL-SCALE MARKET LAUNCH IN 2015, THE COST OF THE FUEL CELL SYSTEM WILL BE 95% LOWER THAN THAT OF THE TOYOTA FCHV-ADV."

HYBRID

THE TOYOTA SPEARHEAD IN EUROPE

Since the first Prius arrived in Europe in 2000, Toyota sold more than 650,000 hybrid vehicles to customers that are each year more numerous.

In 2013 Toyota Motor Europe sales reached 847,540 vehicles, an increase of 9,569 units from 2012, equalling a 0.2 percentage point share gain to 4.7%. This progress is mainly due to the excellent sales performance of hybrid models.

European Toyota and Lexus sales of hybrid vehicles reached an all-time high in 2013 totalling 156,863 units, up 43% year-on-year. Hybrid models now make up close to a fifth of total TME sales including several countries out of EU. In Western Europe, 28% of all Toyota and Lexus sold are hybrid models.

But today, Toyota is not only by far the clear leader for hybrid sales in Europe, it is also the first European hybrid manufacturer. Hybrid vehicle production for Toyota in Europe has doubled to reach a record 116,383 units produced at the company's manufacturing facilities in France (Yaris Hybrid) and in the United Kingdom (Auris Hybrid and Auris Hybrid Touring Sports).

In 2013, the Yaris Hybrid ended the year with sales more than doubling year-on-year reaching 49,774 units, an increase of 25,041 units from 2012. But also the Auris Hybrid registered a record year: the Hatchback saw its hybrid sales increase by 66% to 39,438 units, while the newly launched Auris Hybrid Touring Sports achieved a 60% hybrid mix, equalling 15,175 units.

The success of Hybrid is driven by its excellent cost-of-ownership, thanks to lower fuel-bills and better CO_2 ratings. But there is more than that: an increasing number of drivers is discovering the comfort and serenity that a petrol-hybrid powertrain delivers, allowing them to escape the stress of today's traffic. That is why Toyota is firmly committed to continue its development of its hybrid offer, with 15 new products to be launched globally between the beginning of 2014 and the end of 2015.

GOOD TO KNOW

43%
The hybrid sales progress in 2013 vs 2012

HYBRID VEHICLE PRODUCTION FOR TOYOTA IN EUROPE HAS DOUBLED TO REACH A RECORD 116,383 UNITS PRODUCED AT THE COMPANY'S MANUFACTURING FACILITIES IN FRANCE AND IN THE UNITED KINGDOM

YARIS HYBRID
AN ONGOING REVOLUTION IN THE B-SEGMENT

The Yaris Hybrid is still the only full hybrid vehicle on sale in the European B-segment, the biggest in terms of volume. Representing 28% of Yaris total sales in 2013, it brings the benefits of this technology to a wider range of customers.

The hybrid powertrain has been optimised for installation within the vehicle's compact, extremely efficient packaging, without detriment to either system quality and performance, or passenger accommodation and loadspace. The downsized hybrid system combines a 1.5 litre petrol engine with a light, compact electric motor, transaxle, inverter and battery pack.

It delivers an average fuel consumption of just 3.5 l/100 km and segment-best CO_2 emissions of only 79 g/km, whilst allowing customers frequent electric driving mode that emits zero NOx, PM or CO_2 emissions.

With a best in segment 3.1 l/100 km in the urban cycle, the Yaris Hybrid represents the ideal choice for urban mobility.

It combines the tangible benefits of advanced technology, low emissions and unbeatable cost of ownership with a uniquely relaxed and quiet driving style. Its full hybrid system proves that driving pleasure need not be compromised by environmental responsibility and low running costs. With traditionally high residual values, Toyota hybrids also represent a great return on investment after a few years.

With Toyota Motor Manufacturing UK (TMUK) already assembling Auris Hybrid and Auris Hybrid Touring Sports, the Yaris Hybrid production at Toyota Motor Manufacturing France (TMMF) makes Toyota the only manufacturer to have two full hybrid technology production facilities in Europe.

YARIS HYBRID

HYBRID POWERTRAIN	
Engine	4 in line cylinders
Fuel type	95 unleaded petrol or higher
Valve mechanism	DOHC 16-valve with VVT-i
Fuel system	Electronic Fuel Injection
Displacement	1,497 cm^3
Compression ratio	13,4
Motor generator	permanent magnet AC synchronous
Max. output	45 kW
Max. torque	169 Nm
Battery	Ni-Mh
Max. power (system total)	100 DIN hp/74 kW @ 4800 rpm
Max. torque (petrol engine only)	111 Nm from 3600 to 4400 rpm

MAIN DIMENSIONS & CAPACITIES	
Overall length	3,905 mm
Overall width	1,695 mm
Overall height	1,510 mm
Wheelbase	2,510 mm
Cargo capacity	286 dm^3
Fuel tank capacity	36 l
Drag coefficient (Cd)	0,286

PERFORMANCE	
Max. speed	165 km/h
Acc. 0-100 km/h	11,8

FUEL CONSUMPTION	
Urban	3.1 l/100
Extra-urban	3.5 l/100
Combined	3.5 l/100
CO_2 emissions (combined cycle)	79 g/km

GOOD TO KNOW

Almost 1 in 3
Yaris sold is a hybrid

WITH A BEST IN SEGMENT 3.1 L/100 KM IN THE URBAN CYCLE, THE YARIS HYBRID REPRESENTS THE IDEAL CHOICE FOR URBAN MOBILITY

AURIS HYBRID
EUROPEAN TOUCH

Based on a new architecture, with a lower stance, the new Auris reflects the company's willpower to engineer more appealing, dynamically engaging cars whilst building upon the Toyota's long-established reputation for quality, durability and reliability.

Taking this direction, the engineering team focused on weight management, chassis design, packaging optimisation and powertrain enhancement. They also worked closely with the design team to match the vehicle style to the vehicle architecture.

The result is the new Auris – lighter, more dynamic, better equipped and cheaper to run than ever before. It offers bolder, more confident and sleek styling, improved driving dynamics, a higher quality interior design and further enhancements to improve fuel efficiency. This also applies to its flagship, full hybrid model.

Generating class-leading emissions of just 84 g/km, virtually no NOx or Particulate Matter, the Auris Hybrid also delivers significant cost of ownership benefits arising from lower taxation in many European countries and reduced service and maintenance charges.

In 2013 the Hybrid model represented 37% of the Auris Hatchback sales – ranked in the TOP5 of its segment in Europe - demonstrating that full hybrid is a mainstream proposition today, accessible to the largest possible audience.

Designed primarily for Europe, its largest volume market, the new Auris is built at Toyota Motor Manufacturing UK alongside the Avensis, reinforcing the company's commitment to its European operations.

AURIS HYBRID HATCHBACK

HYBRID POWERTRAIN	
Engine	4 in line cylinders
Fuel type	95 unleaded petrol or higher
Valve mechanism	DOHC 16-valve with VVT-i
Fuel system	Electronic Fuel Injection
Displacement	1,798 cm³
Compression ratio	13.0:1
Motor generator	permanent magnet AC synchronous
Max. output	60 kW
Max. torque	207 Nm
Battery	Ni-Mh
Max. power (system total)	136 DIN hp/100 kW @ 5200 rpm
Max. torque (petrol engine only)	142 Nm @ 4000 rpm

MAIN DIMENSIONS & CAPACITIES	
Overall length	4,275 mm
Overall width	1,760 mm
Overall height	1,460 mm
Wheelbase	2,600 mm
Cargo capacity	360 dm³
Fuel tank capacity	50 l
Drag coefficient (Cd)	0,277

PERFORMANCE	
Max. speed	180 km/h
Acc. 0-100 km/h	10.9 s

FUEL CONSUMPTION	
Urban	3.5 l/100
Extra-urban	3.6 l/100
Combined	3.6 l/100
CO_2 emissions (combined cycle)	84 g/km

GOOD TO KNOW

+66%

Increase of Auris Hybrid sales in 2013 vs 2012

IN 2013 THE HYBRID MODEL REPRESENTED 37% OF THE AURIS HATCHBACK SALES – RANKED IN THE TOP5 OF ITS SEGMENT IN EUROPE

AURIS HYBRID TOURING SPORTS

The C-Segment's first wagon with full hybrid powertrain

Combining stylish design with segment-best loadspace and functionality, the new Auris Touring Sports is the segment's first wagon bodystyle available with a full hybrid powertrain in addition to a range of petrol and diesel alternatives. With CO_2 emissions of just 85 g/km, the Auris Hybrid Touring Sports has the most efficient powertrain in the segment. And because its battery is located beneath the rear seats, the installation of Toyota's Hybrid Synergy Drive technology delivers no compromise to either loadspace (up to 2047 mm length) or luggage capacity (up to 1658 litres).

In addition, the new Auris Touring Sports offers customers the combined benefits of Toyota's Easy Flat, one-touch foldable rear seats, a double level loadspace floor, a roller-type luggage net and a two-way tonneau cover.

Wagon body-style variants currently represent 25% of the C-segment market, with 75% of those sales attributed to the fleet market. The new Auris Touring Sports further broadens the appeal of the Auris range, helping to increase the model's segment share to over 5.0% in 2014, its first full year of European sales. Since its launch in July until the end of 2013, the Hybrid version represented 60% of the Auris Touring Sports sales.

Designed for Europe, the new Auris Touring Sports is built at Toyota Motor Manufacturing UK alongside the Avensis, reinforcing the company's commitment to its European operations.

AURIS HYBRID TOURING SPORTS

HYBRID POWERTRAIN	
Engine	4 in line cylinders
Fuel type	95 unleaded petrol or higher
Valve mechanism	DOHC 16-valve with VVT-i
Fuel system	Electronic Fuel Injection
Displacement	1,798 cm^3
Compression ratio	13.0:1
Motor generator	permanent magnet AC synchronous
Max. output	60 kW
Max. torque	207 Nm
Battery	Ni-Mh
Max. power (system total)	136 DIN hp/100 kW @ 5200 rpm
Max. torque (petrol engine only)	142 Nm @ 4000 rpm

MAIN DIMENSIONS & CAPACITIES	
Overall length	4,560 mm
Overall width	1,760 mm
Overall height	1,460 mm (1,475 mm with roof rail)
Wheelbase	2,600 mm
Cargo capacity	from 530 dm^3 to 1,658 dm^3
Fuel tank capacity	45 l
Drag coefficient (Cd)	0,29

PERFORMANCE	
Max. speed	175 km/h
Acc. 0-100 km/h	11.2 s

FUEL CONSUMPTION	
Urban	3.6 l/100
Extra-urban	3.6 l/100
Combined	3.7 l/100
CO_2 emissions (combined cycle)	85 g/km

GOOD TO KNOW

6 in 10
Auris Touring Sports are hybrid

BECAUSE ITS BATTERY IS LOCATED BENEATH THE REAR SEATS, THE INSTALLATION OF TOYOTA'S HYBRID SYNERGY DRIVE TECHNOLOGY DELIVERS NO COMPROMISE TO EITHER LOADSPACE OR LUGGAGE CAPACITY

PRIUS
THE HYBRID ICON

In December 1997 in Japan, Toyota launched the "Prius", the world's first mass-produced hybrid passenger vehicle. Since then, Toyota hybrid vehicles have received tremendous support from customers around the world. In December 2013, the cumulative global sales or Toyota and Lexus hybrid sales topped the 6 million unit mark.

Sold at more than 3 million units so far, the Prius remains the most recognizable product to feature Toyota's full hybrid powertrain design. Being since the beginning the front-runner in the field of technological innovation, each of its generation has introduced new, high technology features to the segment ahead of their time.

The third generation Prius, launched in 2009, showcases a Head-up Display, projecting useful information onto the base of the windscreen, including vehicle speed, the Eco Drive Monitor and the status of the optional Pre-Crash Safety and Active Cruise Control systems.

The latest Prius returns 3.9 l/100 km in the combined cycle, and generates CO_2 emissions of only 89 g/km.

The Prius maintains a peerless reputation for reliability, durability and low cost of ownership. In the 2014 TÜV Report on long-term reliability and vehicle quality (published by Germany's leading technical inspection association), the Toyota Prius showed the lowest defect rate of the categories of four-to five-year old vehicles and of six-to seven-year old vehicles. The excellent performance of the Prius again underlines the high reliability of Toyota vehicles and of its hybrid drivetrain.

PRIUS

HYBRID POWERTRAIN	
Engine	4 in line cylinders
Fuel type	95 unleaded petrol or higher
Valve mechanism	DOHC 16-valve with VVT-i
Fuel system	Electronic Fuel Injection
Displacement	1,798 cm^3
Compression ratio	13.0:1
Motor generator	permanent magnet AC synchronous
Max. output	60 kW
Max. torque	207 Nm
Battery	Ni-Mh
Max. power (system total)	136 DIN hp/100 kW @ 5200 rpm
Max. torque (petrol engine only)	142 Nm @ 4000 rpm

MAIN DIMENSIONS & CAPACITIES	
Overall length	4,480 mm
Overall width	1,745 mm
Overall height	1,490 mm
Wheelbase	2,700 mm
Cargo capacity	445 l
Fuel tank capacity	45 l
Drag coefficient (Cd)	0,25

PERFORMANCE	
Max. speed	180 km/h
Acc. 0-100 km/h	10.4 s

FUEL CONSUMPTION	
Urban	3.9 l/100
Extra-urban	3.7 l/100
Combined	3.9 l/100
CO_2 emissions (combined cycle)	89 g/km

GOOD TO KNOW

3.2
Million Prius sold since 1997

IN THE 2014 TÜV REPORT, THE TOYOTA PRIUS SHOWED THE LOWEST DEFECT RATE OF THE CATEGORIES OF FOUR-TO FIVE-YEAR OLD VEHICLES AND OF SIX-TO SEVEN-YEAR OLD VEHICLES

PRIUS PLUG-IN HYBRID
TOWARDS THE ULTIMATE ECO CAR

Building on the core technology of Toyota's renowned full hybrid powertrain, the Prius Plug-in Hybrid addresses the specific needs of urban-based customers with a significantly extended, fully-electric EV driving range of 25 km for shorter, cross-city journeys, while the hybrid powertrain's petrol engine awards the new Toyota PHEV true long range capability of over 1,000 km.

A full hybrid capable of operating in petrol and electric modes alone, as well as a combination of both, the Prius Plug-in Hybrid delivers impressive, seamless acceleration and remarkably quiet operation, while returning unparalleled fuel efficiency (2.1 l/100 km in the European homologation combined cycle) and extremely low emissions (49 g/km).

Moreover, when operating in its extended EV mode, the Prius Plug-in Hybrid generates zero CO_2, NOx and particulate emissions, driving with city-crossing capability for up to 25 kilometres at speeds of up to 85 km/h, dependant on battery charge and driving conditions.

After the EV range has been expended, the full hybrid system still returns fuel consumption of only 3.7 l/100 km, and generates class-leading CO_2 emissions of just 85 g/km. These figures are even lower than that of regular Prius, mainly due to the vehicle's Lithium-ion battery, which can more efficiently recover energy under braking, recharging the battery more quickly and allowing owners to drive more often in EV mode.

Weighing only 80 kg, the battery pack of 4.4 kWh can be fully recharged in 1.5 hours from a standard, 230V household outlet. And thanks to this compact battery pack, the Prius Plug-in Hybrid weighs only 55 kg more than a standard Prius.

PRIUS PLUG-IN HYBRID

HYBRID POWERTRAIN	
Engine	4 in line cylinders
Fuel type	95 unleaded petrol or higher
Valve mechanism	DOHC 16-valve with VVT-i
Fuel system	Electronic Fuel Injection
Displacement	1,798 cm³
Compression ratio	13.0:1
Motor generator	permanent magnet AC synchronous
Max. output	60 kW
Max. torque	207 Nm
Battery	Lithium-ion
Max. power (system total)	136 DIN hp/100 kW @ 5200 rpm
Max. torque (petrol engine only)	142 Nm @ 4000 rpm

MAIN DIMENSIONS & CAPACITIES	
Overall length	4,480 mm
Overall width	1,745 mm
Overall height	1,490 mm
Wheelbase	2,700 mm
Cargo capacity	443 l
Fuel tank capacity	45 l
Drag coefficient (Cd)	0,25

PERFORMANCE	
Max. speed	180 km/h
Acc. 0-100 km/h	11.4 s

FUEL CONSUMPTION	
Combined	2.1 l/100
CO_2 emissions (combined cycle)	49 g/km

AFTER THE EV RANGE HAS BEEN EXPENDED, THE HSD SYSTEM STILL RETURNS FUEL CONSUMPTION OF ONLY 3.7 L/100 KM, AND GENERATES CLASS-LEADING CO_2 EMISSIONS OF JUST 85 G/KM

PRIUS+

THE FIRST FULL HYBRID 7-SEAT MPV

Though still compactly sized to optimise its aerodynamic performance, the Prius+ provides, as its name suggests, a significant increase in space and passenger accommodation. It is 135 mm longer than a standard Prius, 30 mm wider, and 85 mm higher, with a wheelbase extended by 80 mm, making it possible to accommodate 7 people in three rows.

The new Toyota full hybrid's seven-seat format features three, independent, sliding/split/folding second row seats and a 50:50 split/folding third tier. The adoption of third row seating has been made possible by the installation of a highly compact, space-saving lithium-ion battery pack within the vehicle centre console between the front seats.

The Prius+ provides 232 litres of cargo space, even with seven passengers on board. With the third seating row stowed, this figure rises to 784 litres, and with all second and third row seats folded flat, increases to a maximum 1,750 litres.

Its environmental performance enhanced by the Prius+'s class-leading aerodynamic performance and low weight, the full hybrid drive system returns both class-leading fuel economy and CO_2 emissions of 4.1 l/100 km and 95 g/km respectively.

PRIUS+

HYBRID POWERTRAIN	
Engine	4 in line cylinders
Fuel type	95 unleaded petrol or higher
Valve mechanism	DOHC 16-valve with VVT-i
Fuel system	Electronic Fuel Injection
Displacement	1,798 cm³
Compression ratio	13.0:1
Motor generator	permanent magnet AC synchronous
Max. output	60 kW
Max. torque	207 Nm
Battery	Lithium-ion
Max. power (system total)	136 DIN hp/100 kW @ 5200 rpm
Max. torque (petrol engine only)	142 Nm @ 4000 rpm
	**7/5/2 seats up*
MAIN DIMENSIONS & CAPACITIES	
Overall length	4,615 mm
Overall width	1,775 mm
Overall height	1,575 mm
Wheelbase	2,780 mm
Cargo capacity	232/784/1,750 l*
Fuel tank capacity	45 l
Drag coefficient (Cd)	0,28
PERFORMANCE	
Max. speed	165 km/h
Acc. 0-100 km/h	11.3 s
FUEL CONSUMPTION	
Urban	3.8 l/100
Extra-urban	4.2 l/100
Combined	4.1 l/100
CO_2 emissions (combined cycle)	95 g/km

THE FIRST AND SO FAR ONLY 7-SEATER HYBRID IN THE EUROPEAN MARKET

IMAGE BANK





















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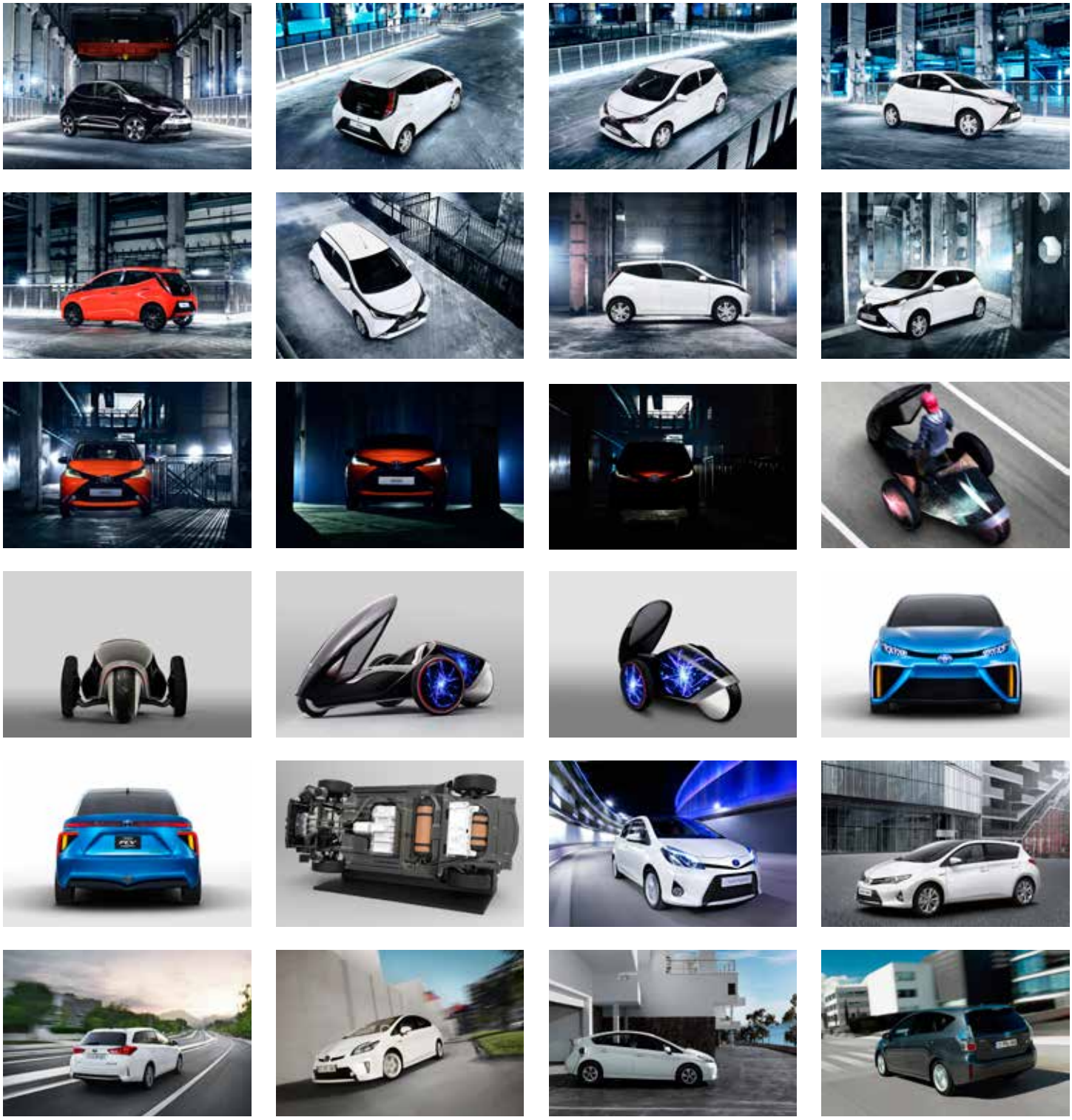

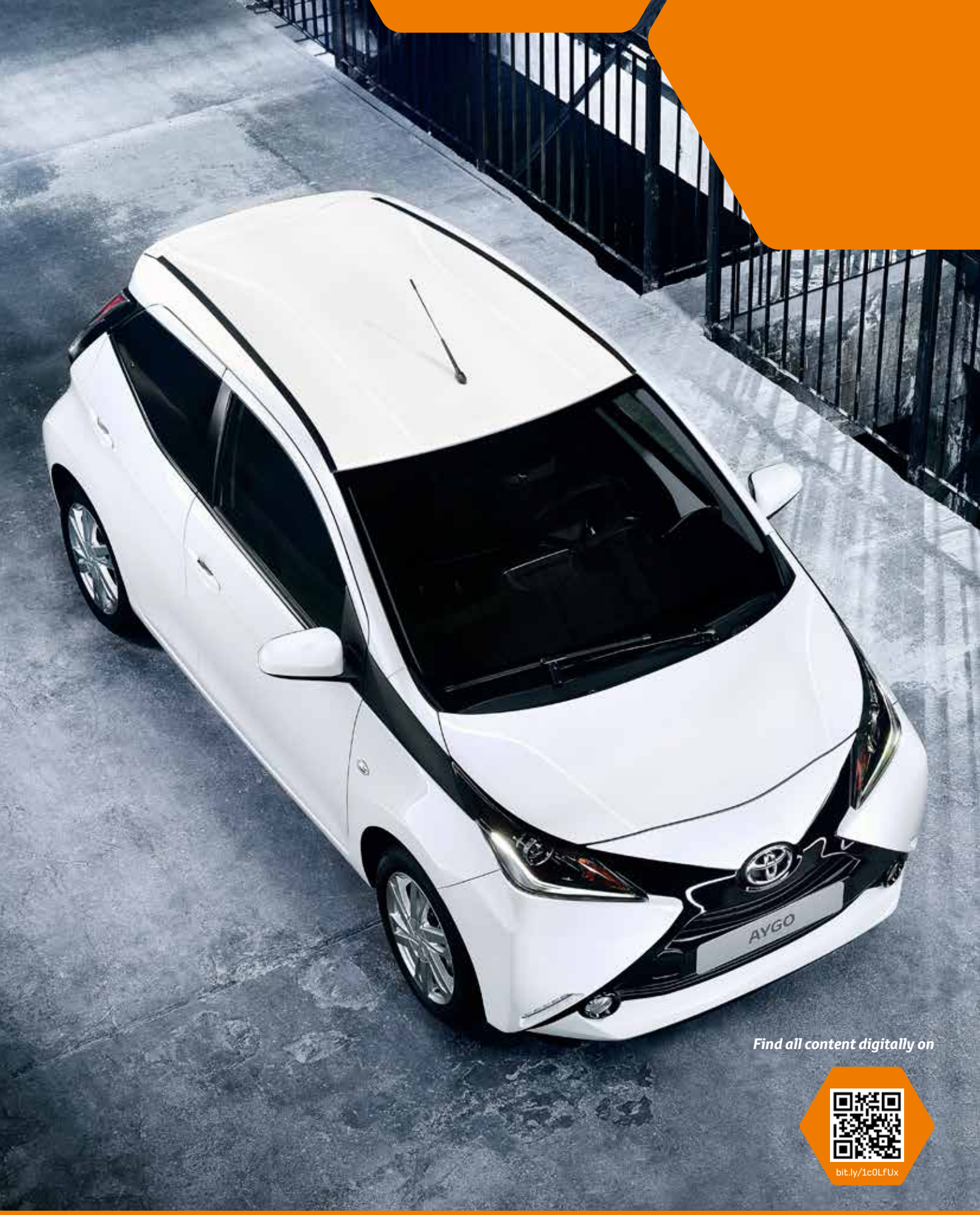

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