MITSUBISHI MOTORS
Drive your Ambition

New (MY19)

Mitsubishi Outlander PHEV

ELECTRIC & MORE

Summer 2018

About MITSUBISHI MOTORS

Mitsubishi Motors Corporation is a global automobile company based in Tokyo, Japan, which has a competitive edge in SUVs and pickup trucks, electric and plug-in hybrid electric vehicles.

Since the Mitsubishi group produced its first car more than a century ago, we have demonstrated an ambitious and often disruptive approach, developing new vehicle genres and pioneering cutting-edge technologies.

Deeply rooted in Mitsubishi Motors' DNA, our brand strategy will appeal to ambitious drivers, willing to challenge conventional wisdom and ready to embrace change. Consistent with this mindset, Mitsubishi Motors introduced its new brand strategy in 2017, expressed in its "Drive your Ambition" tagline – a combination of personal drive and forward attitude, and a reflection of the constant dialogue between the brand and its customers.

Today Mitsubishi Motors is committed to continuous investment in innovative new technologies, attractive design and product development, bringing exciting and authentic new vehicles to customers around the world.

All data subject to final EU homologation – Equipment & features may vary per model / market

SUMMARY

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*See separate file in annex

NEW (MY19) OUTLANDER PHEV at a GLANCE

- Outlander PHEV Timeline:

- October 2009: First preview through Concept-PX MiEV @ Tokyo Motor Show
- November 2011: Second preview through Concept-PX MiEV II @ Tokyo Motor Show
- September 2012: World premiere @ Paris Motor Show
- January 2013 Japanese market intro
- October 2013: European market intro
- November 2013: "RJC Technology of the Year 2014" - Automotive Researchers' and Journalists' Conference of Japan (RJC).
- November 2013: Innovation Award - Car of the Year Japan 2013-2014
- September 2015: Major update & facelift @ Frankfurt Motor Show
- October 2015: Entry @ Baja Portalegre 500 cross-country race (Portugal)
- December 2017: North American market intro
- MonJanuary 2018: 100,000th Outlander PHEV sold in Europe
- March 2018: 150,000th Outlander PHEV sold globally
- March 2018: New (MY19) Outlander PHEV @ Geneva Motor Show

- Outlander PHEV Market:

- Europe's best-selling plug-in hybrid vehicle (all segments) in 2015, 2016 and 2017**
- World's best selling plug-in hybrid SUV in 2017**
- Global sales (MMC FY data):

	2012※1	2013	2014	2015	2016	2017	TOTAL
TOTAL	4,302	19,662	35,180	42,353	23,836	28.296	**153,629**
Japan	4,302	8,968	8,627	11,833	3,616	5,105	**42,451**
Europe		10,624	25,354	29,551	19,825	20,459	**105,813**
N.A.※2						1,874	**1,874**
Australia ※3		69	1,144	802	199	692	**2,906**
Other ※4		1	55	167	196	166	**585**

*1…Sales started in January 2013. 2…U.S., Canada. 3…Australia, New Zealand. 4…Taiwan, Hong Kong, South America
**JATO Dynamics

- Top Five EU Outlander PHEV markets (MME FY data – cumulated sales):

	~~2012~~	2013	2014	2015	2016	2017	TOTAL
The UK		12	10,037	11,015	7,569	7,694	**36,327**
The Netherlands		9,393	7,441	7,026	1,440	189	**25,489**
Norway		442	1,403	3,717	4,695	3,939	**14,196**
Sweden		344	2,471	3,001	2,245	2,423	**10,484**
Germany		4	1,430	2,032	1,777	1,784	**7,111**

- Market ranking (Local registration data – CY17 Top Five EU Outlander PHEV markets):

Outlander PHEV	**The UK**	**Norway**	**Sweden**	**Germany**	**Spain**
CY17 volume	7,500	4,067	2,451	2,234	719
CY17 local PHEV ranking	# 1	# 1	# 2	# 3	# 1

- MY19 updates:

- New "PHEV 2.0" Powertrain:
  - New 2.4 Atkinson cycle petrol engine
  - Generator output increased by 10%
  - Rear motor output is increased by 10% to 70 kW (95 ps)
  - Drive battery capacity is increased by 15% to 13.8kWh
  - Drive battery output is increased by 10%
  - Upgraded PHEV Operating System

- New Chassis:
  - Augmented Lancer Evolution-derived "Super-All Wheel Control" (S-AWC) system, with two new driving modes: "SPORT" and "SNOW"
  - Higher body rigidity through the use of structural adhesive welding
  - Re-calibrated suspension
  - Quicker steering
  - 17"front ventilated disc brakes (18" wheel only)

- New Design:
  - New front grille, bumper, lighting system,…
  - New rear spoiler, bumper extension,…
  - New 18" multi-spoke alloy wheels
  - New contoured front seats
  - New high quality quilted leather upholstery (available with additional new upper trim line)
  - New accent material

- New features:
    - Improved NVH
    - Revised switchgear (incl. new toggle-style driving mode switch)
    - New meter cluster
    - Rear A/C outlets
    - Wider market availability for the 1,500W (230 V) outdoor power supply sockets
    - Etc,...

- **MY18 vs. MY19:**

(EU specs)	**MY18 Outlander PHEV** (NEDC protocol)	**New (MY19) Outlander PHEV** (WLTP protocol)
Engine output (kW/ps)	89/121 @ 4,500 rpm	99/135 @ 4,500 rpm
Engine torque (Nm)	190 @ 4,500 rpm	211 @ 4,500 rpm
Rear motor output (kW/ps) **Rear motor torque (Nm)**	60/82 195	70 (95) 195
Drive battery capacity (kWh)	12.0	13.8
Maximum speed*	170 km/h	170 km/h
0 – 100 km/h*	10"8	10"5
Passing acceleration* **(40 to 60 km/h)** **(80 to 100 km/h)**	 2"8 4"3	 2"5 3"7
Maximum speed* – EV Mode	125 km/h	135 km/h
Maximum range – EV Mode	54km	45 km
Fuel economy (combined cycle)	1.7 l / 100km	2.0 l / 100 km
CO_2 emissions (g/km) (combined cycle)	41	46

Total power output (i.e. engine + front motor + rear motor + generator) can only be considered as nominal since such configuration/combination never occurs in real-life driving, the PHEV system always considering the most balanced combination of powertrain and drive modes, with emphasis on electric abilities - driving & charging - and low emissions)

*Where legal

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CORPORATE

Techno-Flagship

Over the last years, the global auto industry has started to embrace electro-mobility as a contribution to combat climate change, developing showcase products and forging alliances to support the vast developments this effort requires whether in the area of batteries, drivetrain components or electronics.

"EV + SUV": a core MMC strategy

For Mitsubishi Motors Corporation (MMC) though, electro-mobility has long been considered a strategic direction, with electro-mobility R&D initiated as early as October 1966.

In parallel, the current (and foreseeable) popularity of SUVs has seen nearly all OEMs jumping this SUV bandwagon over the last years while Mitsubishi has very much driven that bandwagon for a very long time - a very serious 4WD player since 1936 with the seminal; PX33 4WD torpedo, branching out to more life-style orientated (but still very capable) all-terrain vehicles with the first generation Pajero/Montero/Shogun in 1982.

Converging market trends, today's New (MY19) Outlander PHEV is the latest in a long line of Mitsubishi electric vehicles and 4WD SUVs.

Market leader

World premiered at the 2012 Paris Motor Show, Outlander PHEV was initially launched in a few selected European markets (The Netherlands, Scandinavia,...) in October 2013.

Pioneering an all-new genre, it quickly made its mark, bringing a new dimension to the European SUV segment, passing the 50,000th sales milestone in November 2015 and then the 100,000th mark in January 2018. Capitalizing on this success, it also became the best selling plug-in hybrid vehicle (all Brands, all segments) in Europe in 2015, 2016 and 2017*, fueled by a constant evolution of the model.

Despite increased pressure from an ever growing number of competitors, Outlander PHEV has kept its pace, retaining the Number One spot in The United Kingdom, Norway or Spain during FY2017* while faring well in markets with strong competition from domestic players, such as Sweden or Germany.

*Source: JATO Dynamics

Overall, for the Jan. – Dec. 2017 period, Outlander PHEV contributed to a 13 % combined EV/PHEV share and a 77% combined SUV share within the Mitsubishi Motors model mix in the region.

Global expansion

Amid heated debates in Europe about the future of Diesel and more generally the place of the automobile in society, Outlander PHEV's 100,000th European milestone In January 2018 has vindicated Mitsubishi Motors' ambition to offer new frontier propositions for those who want to embrace change ahead of the game.

However, whilst Europe has absorbed the bulk of the model's volume, the Outlander PHEV story goes far beyond this region…

… Expanding the reach of MMC's "EV + SUV" product strategy, Outlander PHEV has been launched in North America (Canada and The USA) in December 2017.

… Leapfrogging current market trends, Mitsubishi Motors also intends to accompany emerging nations in their growing quest for individual mobility while limiting the environmental impact of such development – hence pilot projects initiated in countries such as Indonesia, Vietnam or Costa Rica.

Alliance asset

Outlander PHEV is not only the latest chapter of a triple Mitsubishi saga that started in 1936 (4WD), continued in 1966 (EV R&D) and then on in 1982 (first gen. Pajero SUV), it also represents one of the strongest assets MMC brings to the Renault-Nissan-Mitsubishi Alliance, next to its strong ASEAN market presence, renown 4WD technology and a further layer of pick-up truck expertise.

Since its joining on October 20th, 2016, through PHEV Mitsubishi Motors has strengthened the Alliance, which was already the world's largest electric vehicle manufacturer. With Mitsubishi Motors, the Alliance is today the undisputed leader in EV and PHEV technology.

Over the next years, the company plans to introduce new EVs by leveraging the Renault-Nissan-Mitsubishi Alliance.

The other way around, the Alliance will be able to tap on Mitsubishi Motors' technology leadership & expertise in the area of plug-in hybrid electric (PHEV) powertrains.

Global green

Through the provision of ultra-low emission vehicles, such as Outlander PHEV, Mitsubishi Motors plays a constructive role in delivering the low carbon future to which policy-makers across the world have committed through initiatives such as the Paris Climate Accords.

Echoing the corresponding global shift to lower emission models (and stricter environmental regulations), Mitsubishi has announced that it plans to provide electrified solutions across its core model range.

As such, Outlander PHEV is the fore-runner of Mitsubishi Motors' consistent "EV + SUV" core product strategy blending SUV architecture with EV powertrain, whether full electric (for small and compact cars) or MMC's own EV-based plug-in hybrid electric solution (for larger vehicles).

By the end of the current "Drive for Growth' mid-term business plan in FY2019, the company expects its five best-selling global models consisting of SUV, 4WD, and plug-in hybrid electric vehicles (PHEV) to account for 70% of total sales volume. Reflecting the shift to lower emission models, MMC also announced that it plans to provide electrified solutions across its core model range including an EV kei car from 2020.

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TECHNOLOGY

Intrinsically **Electric**

Ever since the Mitsubishi group produced its first car more than a century ago (Model-A in August 2017), its motors business has demonstrated an ambitious and often disruptive approach, developing new vehicle genres and pioneering cutting-edge technologies.

This adventurous & progressive attitude continued after Mitsubishi Motors Corporation was officially established in 1970, and is best exemplified today by the Corporation's techno-flagship: Outlander PHEV:

- The world's first plug-in hybrid electric twin-motor SUV offered by a mainstream manufacturer, when announced in 2012
- Still the only plug-in hybrid vehicle based on an electric car architecture (as opposed to the generic electrified ICE found elsewhere).

Since early-adopters in 2013, Outlander PHEV has met its public in Europe, fulfilling the requirements of a growing number of (more) mainstream customers vs. more established competitors.

Core to the product benefits – and the positive response from the market – is its unique architecture.

Unique route

As opposed to the approach chosen across the Industry, Mitsubishi Motors has decided to eschew the generic electrification of ICE vehicles to develop its own plug-in hybrid vehicles.

Instead, building upon their long 50 years of electro-mobility R&D, MMC engineers have taken the opposite route, that of an electric vehicle mainly powered by two electric motors (one at the front and one at the rear) supplemented by a large petrol engine and a powerful generator, both able to kick in automatically when driving conditions and/or the charging status so requires.

Taking advantage of the inherent simplicity of electric vehicles (no gearbox, all drive-by-wire,...) and supported by a highly sophisticated PHEV Operating System developed in-house, this novel architecture brings notable benefits, whether in terms of packaging (little compromise vs. the ICE variant), weight saving (up to 275 kg less than competition) or efficiency.

Taking this peculiar electric route leads to some interesting developments:

- The concept of "maximum power" is only nominal since petrol engine + front motor + rear motor + generator never run together at maximum speed - such configuration /combination never occurs in real-life driving, the PHEV system always balancing between the most appropriate combination of powertrain and drive modes, with emphasis on electric abilities - driving & charging - and low emissions.

- Whilst the EV Mode is the default mode upon starting, the announced 45 km (WLTP) of electric driving range is never sequential (i.e., 45 km and then nothing...). Instead, the PHEV system will constantly switch between driving and charging, esp. when driving in SAVE mode.

- Mitsubishi Motors' PHEV system is so intrinsically electric that the Operating System's mapping allows for 89 days of electric-only driving (the 45 km - WLTP - range being sufficient for most European's daily commute). On the 90th day, a warning light will lit up in the instrument panel while the petrol engine will be automatically started by the PHEV OS, to protect the fuel injection system.

- The PHEV system is fully automatic, hassle free - and totally reliable. The only choice the driver can have is between:
    - Selecting the EV Mode wherever/whenever required
    - Activating the SAVE mode – the preferred solution to protect the battery charge while instilling a dose of electric driving to lower fuel consumption and emissions while also topping off the charge.
    - Pressing the CHARGE mode switch to force the charging when no power source is available. This system will be crucial for new regulations in some cities which will only allow zero-emission vehicles in some areas. The Outlander PHEV driver will be able to drive from the suburbs using the hybrid modes and then switch to pure electric once inside the city.
    - Using the paddles behind the steering wheel to modulate engine braking & power regeneration – all without the strange brake pedal feel experienced with most cars fitted with a regenerative braking system.

- Multiple charging options are available – as standard equipment:
    - Regular charging: 4.0 hours - AC 230V 16A
    - Quick charging (CHAdeMO standard – 25 mn for 80% charging*)
    - CHARGE mode
    - Regenerative braking (5 incremental steps)
    - Automatic "flash charging" while driving in SAVE Mode

*80% only in order to be able to also stock energy from regenerative braking within the remaining 20%

Three Drive modes

As a reminder, Outlander PHEV offers three Drive Modes, all automatically activated by the PHEV Operating System and all offering permanent electric 4WD:

- « Pure EV Mode » (up to 135 km/h - where legal)
    - Car powered by the Front & Rear Motors
    - Energy sourced from the Battery

- « Series Hybrid Mode »
    - Car still powered by the Front & Rear Motors
    - Engine engaged to run the Generator, to charge the Battery while driving
    - Mode automatically activated - for 3-10 mn max – for sudden accelerations or driving uphill. Also when the state of charge of the battery is too low.
    - System bias to switch back to Pure EV Mode as often/soon as possible
    - Engine also punctually & automatically activated to keep the catalytic converter in optimum condition + after 89 days of electric-only driving to protect the fuel injection system.

- « Parallel Hybrid Mode »
    - Engine powers the front wheels (via the Multi-Mode front transaxle)
    - Front Motor assists the Engine + Rear motor keeps driving the rear wheels
    - Mode automatically activated at high-speed (where legal)
    - System bias to switch back to Series hybrid Mode (or Pure EV Mode below 135 km/h) as often/soon as possible
    - Engine also engaged to charge through the Generator, using surplus torque

Beyond driving

Outlander PHEV's EV-based architecture bring a few significant additional benefit related to energy management:

- Two 1,500W electric sockets are fitted (one behind the center console, available to the rear passengers and another one in the trunk) to plug any 230V outdoor equipment, where there is no mains electricity grid.

- The car's energy capacity is sufficient to power a regular household for a maximum of 10 days, providing the battery is fully charged and the fuel tank is full – a singular asset whose value has been (unfortunately) demonstrated by stranded dwellers during natural disasters in Japan.

- One of the attractions of MMC's PHEV technology is that it allows drivers to use their batteries to supply DC electricity to their home, their community and the power grid. This capability opens the door to a new era of more efficient energy management.

  De facto unique in its segment, Outlander PHEV is already smart grid compatible and Mitsubishi Motors anticipates the gradual introduction of vehicle to home (V2H) schemes over the coming years and are already involved in demonstrator programs in various countries.

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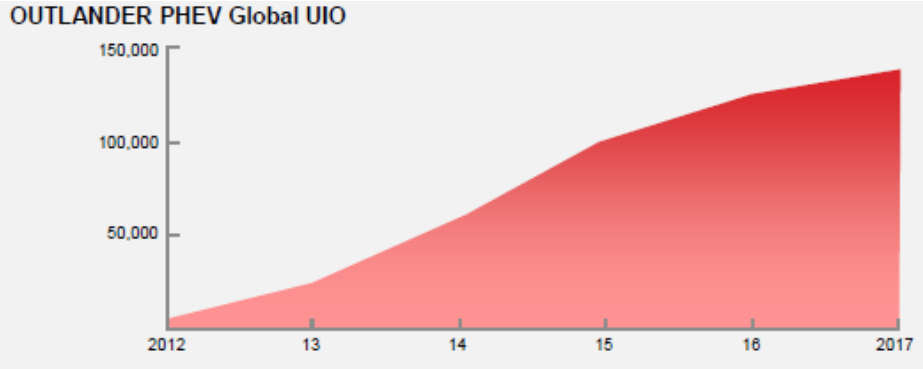
New (MY19) Outlander PHEV

Consolidation

With 150,000 Outlander PHEVs sold globally since 2013, Mitsubishi Motors has certainly built a solid market presence in an all-new segment and strengthened its SUV Brand profile.



Five years after launch and going through the major MY19 iteration, Outlander PHEV is now to be considered as MMC's new Brand flagship – a successful automobile meant to consolidate the model's market leadership while responding to customers' queries and meeting newest environmental regulations.

Customer feedback

Since launch, MMC has also gathered a rich customer base like no other competitors, fueling a dialogue with daily PHEV drivers, whether private or corporate, which in turn has driven the different iterations of the model since launch – including the new MY19 variant – and allowed for the gathering of valuable intelligence aimed at further future developments.

Essential feedback brought by actual European customers can be summed up as follows:

- Smooth seamless driving, incl. the imperceptible (automatic) transition between the driving modes
- Low cost of ownership, incl. a significant decrease in fuel consumption
- Roominess/packaging and safety
- Versatility (permanent 4WD capability, 1,500 kg towing capacity, long-haul ability, cargo volume,…) making suitable for both private and business usage
- Design
-

On the other hand, European Outlander PHEV customers expressed a wish for improvement about:

- Performance, smoothness and quietness of the previous 2.0 liter petrol engine
- Further abilities when driving in (pure electric) EV Mode
- Sharper, yet more comfortable ride
- Even more 4WD versatility

New (MY19) Outlander PHEV was the result of this extensive data mining and dialogue with European customers – with key highlights:

In details:

"PHEV 2.0" powertrain

While retaining its basic layout, the whole PHEV powertrain has gone through a comprehensive "2.0" development to address customers' queries – some of it rather radical:

- **New 2.4 Atkinson cycle petrol engine:**
  - Seldom used in the auto industry – and mostly for hybrid or plug-in hybrid vehicles – the Atkinson principle (expansion stroke longer than the compression stroke) allows essentially for better thermal energy efficiency than traditional Otto cycle internal combustion engines.

  - Increasing the displacement from 2.0L to 2.4L for New (MY19) Outlander PHEV gives the opportunity to place the engine in an overall lower power operating area where the Atkinson cycle with MIVEC can be applied, de facto increasing the engine performance.

- When combined with the higher displacement of MY19's 2.4 petrol engine, the end result is higher torque (esp. at low rpm), lower NVH, better accelerations (esp. at low- and mid-range speeds) and overall better fuel economy/lower CO_2 emissions:

(EU specs)	MY18 Outlander PHEV	New (MY19) Outlander PHEV
Engine output (kW/ps)	89 / 121 @ 4,500 rpm	99 / 135 @ 4,500 rpm
Engine torque (Nm)	190 @ 4,500 rpm	211 @ 4,500 rpm

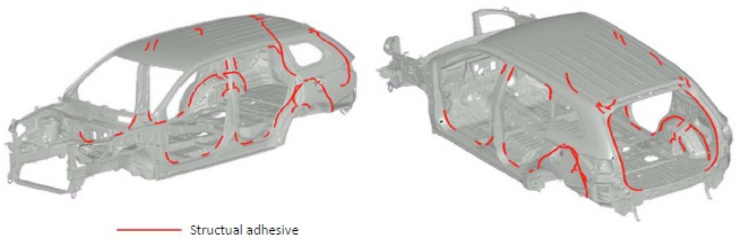
- **Lower NVH:**
  - In parallel to the implementation of the new smoother 2.4 Atkinson engine, efforts have been made to reduce engine noise (double layer manifold catalytic converter, new air cleaner design, additional mass plate on exhaust muffler,…),

- **Higher performance of electric components & new functions:**
  - Generator: power output increase 10%
  - Rear motor: power output increase to 70 kW (95 ps)
  - Drive battery: power output increased 10% + capacity (new cells) increased to 13.8kWh
  - Battery warming system - to keep the traction battery working if the vehicle is connected to a charging point, even when outside temperature reaches very cold situations. Also operational while driving
  - Cell voltage balancing function - for discharging with the V2H ("Vehicle to Home") device via the quick charge port.
  - Direct powering of A/C, accessories, etc,… from the charge point when charging
  - Logically, re-mapped PHEV Operating System
  - Increased maximum speed in EV mode from 125 km/h to 135 km/h (where legal)
  - Redesigned more intuitive meters (engine power kW, regeneration power „„)

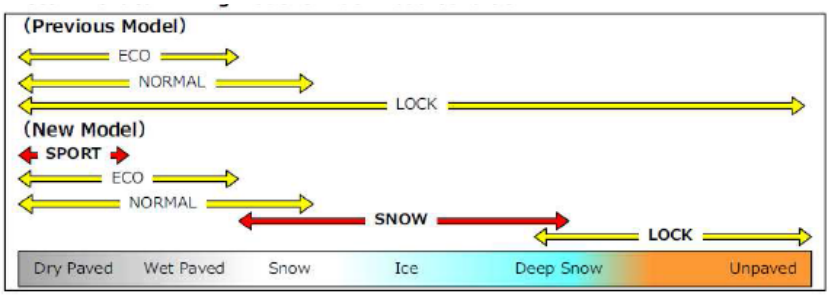
Dynamic edge

In order to further fulfill its "Quality All-Rounder" mission, MMC Engineering have brought further improvements to the Outlander PHEV chassis for MY19:

- **Structural adhesive welding –** to increase body rigidity and therefore dynamics (steering stability,…):



- **Super-All Wheel Control upgrade** - two additional modes: SPORT and SNOW:



  - The WRC-bred, Lancer Evolution-derived Super-All Wheel Control (S-AWC) system sees its performance increased for even more 4WD versatility:
    - New SPORT mode: stronger acceleration feeling and better grip at high G cornering
    - New SNOW mode: better launching from stand-still and cornering abilities on slippery surfaces

- **Chassis tuning:**
  - Steering – to enhance responsiveness & feeling:
    - Stroke ratio* increased and electric power steering ECU re-mapped accordingly
  - Shock absorbers – to match new steering response & to improve ride comfort while retaining overall sharpness:
    - Optimization of damping force of shock absorbers and rear struts

        - Increase of cylinder diameter of rear shock absorbers so that the suitable damping forces can be taken at low speed
    - Traction Control logic – to improve hill-climbing performance by using sufficient rear driving torque without compromising stability

* Rack stroke in Steering Gear per a revolution of Steering Wheel.

    - Brakes – to improve resistance to fading with the new availability of 17" ventilated front disc brakes (16" previously)

Maturing design

Three years after the very successful MY16 face-lift which metamorphosed the personality of the model, New (MY19) Outlander PHEV goes a more subtle route – a powerfully yet understated confirmation of its market presence, of its identity and of its newly-found Brand flagship status:

- **New front end** – redesigned grille, bumper, fog lamp bezels and "technical look" LED high beams
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- **New rear end** – redesigned rear bumper extension, large roof spoiler
- **New wheels** - two tone contrasted 18"multi-spoke alloys
- **New front seats** – contoured shape with enhanced support locations, available in new high quality quilted (black) leather matched by quilted padding on door trim panel (exclusive to new upper trim line).

Finer features

Another echo of Outlander PHEV European customers' feedback can be found in the myriad of smaller features developed for MY19 which can improve their daily life behind the wheel, sharpen the look of the car and add to its "Quality All-Rounder" profile such as:

- Toggle switch for Super-All Wheel control
- Dedicated SPORT mode switch
- Relocated switchgear (EV mode, CHARGE mode, SAVE mode, hazard warning lights,…)
- Better ergonomics of meters & indicators
- More convenient location of USB ports
- New power window operation
- Rear A/C vents
- Wider availability of the 1,500W (230 V) outdoor power supply sockets
- New accent material
- Etc,…

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