

Reference Manual



G30 PHEV LCI COMPLETE VEHICLE



Technical Training

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Technical training.
Product information.

G30 PHEV LCI Complete Vehicle.



BMW Service

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General information

Symbols used

The following symbol is used in this document to facilitate better comprehension or to draw attention to very important information:



Contains important safety information and information that needs to be observed strictly in order to guarantee the smooth operation of the system.

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BMW Group vehicles meet the requirements of the highest safety and quality standards. Changes in requirements for environmental protection, customer benefits and design render necessary continuous development of systems and components. Consequently, there may be discrepancies between the contents of this document and the vehicles available in the training course.

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This training manual or any attached publication is not intended to be a complete and all inclusive source for repair and maintenance data. It is only part of a training information system designed to assure that uniform procedures and information are presented to all participants.

For changes/additions to the technical data, repair procedures, please refer to the current information issued by BMW of North America, LLC, Technical Service Department.

This information is available by accessing TIS at www.bmwcenternet.com.

Additional sources of information

Further information on the individual topics can be found in the following:

- Owner's Manual
- Integrated Service Technical Application
- Aftersales Information Research (AIR)

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G30 PHEV LCI Complete Vehicle.

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G30 PHEV LCI Complete Vehicle.

1. Introduction.

1.1. Further information

With the new BMW 530e Sedan, sDrive/xDrive, BMW is adding further variants of The Ultimate Driving Machine. With its plug-in hybrid drive, the latest BMW 5 Series variant combines brand-typical driving dynamics with the option of driving electrically and emissions-free during shorter local journeys, while at the same time offering maximum efficiency over long distances.

This reference manual only covers the alterations to the new BMW 530e (G30 PHEV LCI) when compared to its predecessor, the BMW 530e (G30 PHEV). Here, knowledge of the predecessor model (G30 PHEV) and the high-voltage technology of Hybrid Generation 4.0 is a requirement.

Further information can be found in the listed documents:

Further information

- ST1700 G30 PHEV Complete Vehicle reference manual
- ST1928 G30 PHEV GEN. 3.0 UPDATE reference manual
- ST1927 SP41 High-voltage Battery reference manual



High-voltage component warning sign



Only Service employees who satisfy all the prerequisites are permitted to work on the designated high-voltage components: suitable qualifications, compliance with the safety rules, procedure following the exact repair instructions.

Work on live high-voltage components is expressly prohibited. Prior to every operation which involves a high-voltage component, it is essential to disconnect the high-voltage system from the voltage supply and to secure it against unauthorized return to service.

- 1 Charging plug is not connected to the vehicle.
 - 2 Enter the PARK vehicle condition (e.g. by holding down the volume control button).
 - 3 Wait until the vehicle enters the "rest state" (the inscription in the Start/Stop button does not light up).
 - 4 Open high-voltage safety connector.
 - 5 Secure the high-voltage system against restarting at the high-voltage service disconnect.
 - 6 Activate PAD mode (e.g. by operating the start/stop button three times within 0.8 s).
 - 7 Wait until the Check Control message "High-voltage system deactivated" is displayed in the instrument cluster.
-

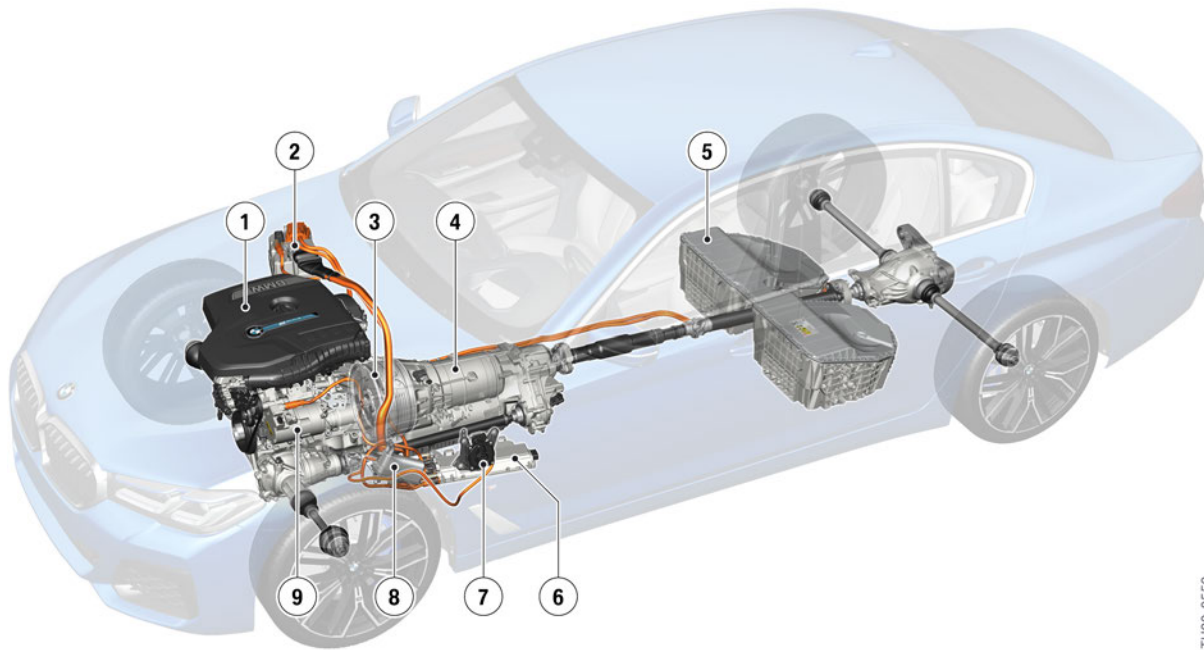
G30 PHEV LCI Complete Vehicle.

1. Introduction.

1.2. Positioning

The BMW 530e, sDrive/xDrive, with development code G30 PHEV LCI, is based on the previous G30 PHEV. It is a vehicle of the new **Hybrid-Generation 4.0**.

The abbreviation PHEV in the development code stands for **Plug-in Hybrid Electric Vehicle**.



G30 LCI PHEV hybrid drive (example with xDrive)

TH20-0552

Index	Explanation
1	Combustion engine B48B20M1
2	Electric motor electronics (EME)
3	Electric motor
4	Automatic transmission GA8P75HZ
5	SP41 High-voltage Battery
6	Convenience charging electronics (KLE)
7	Charging socket
8	Electrical heating (EH)
9	Electric A/C compressor (EKK)

The drive system of the 530e consists of the familiar **4-cylinder engine**, an 8-speed automatic transmission and an electric machine.

The electric drive of the G30 PHEV LCI enables all-electric driving and thus emission-free driving at speeds up to 87 mph. The maximum electric range is approximately 38 miles (approximately 34 miles with xDrive).

G30 PHEV LCI Complete Vehicle.

1. Introduction.

The driving and drive system modes have been merged and simplified. The new assignment of the Driving Experience Control in the G30 PHEV LCI means that the **SPORT**, **HYBRID** and **ELECTRIC** drive modes can be selected. Each of the last two driving modes can be individualized with regard to efficiency or dynamics. The drive system modes are no longer used in the familiar form. With the ELECTRIC drive system mode, the G30 PHEV LCI runs with all-electric driving at up to 87 mph.

1.3. Identifying features

1.3.1. Exterior trim

As with the G30 PHEV vehicles, the external identifying features are evident in the model designation or the charging socket flap.



G30 PHEV LCI Exterior identifying features

Index	Explanation
1	Charging socket cover
2	Model designation "530e" on tailgate, right

G30 PHEV LCI Complete Vehicle.

1. Introduction.

Another identifying feature can be found on the acoustic cover of the combustion engine. The blue inscription eDrive is another indication of a hybrid vehicle.



G30 PHEV LCI Exterior identifying features

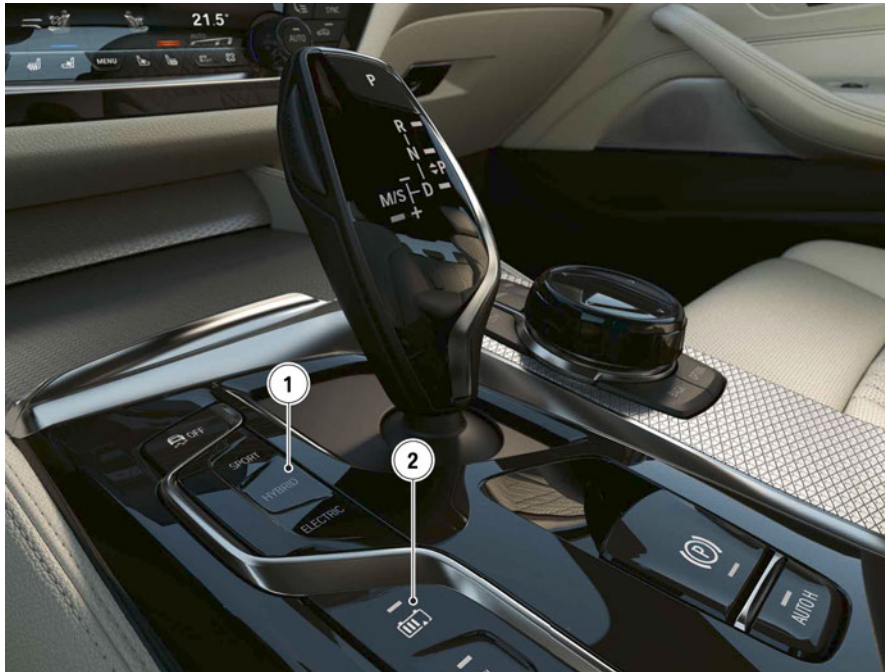
Index	Explanation
a	B48B20M1 from 07/2020 in the 530e

G30 PHEV LCI Complete Vehicle.

1. Introduction.

1.3.2. Interior equipment

The most conspicuous new feature of the interior equipment is the new Driving Experience Control with the new driving modes. The eDRIVE button is no longer installed. The Battery Control button now occupies this position.



Inner identifying features of G30 PHEV LCI

Index	Explanation
1	Driving Experience Control with the SPORT, HYBRID and ELECTRIC drive modes
2	Battery Control button

G30 PHEV LCI Complete Vehicle.

1. Introduction.

The installation location of the refueling button is in the front, bottom part of the door trim panel on the driver's side.



Inner identifying features of G30 PHEV LCI

Index	Explanation
a	Refueling button

1.4. Overview of changes

The following table provides an overview of the changes to the G30 PHEV LCI when compared to the G30 PHEV.

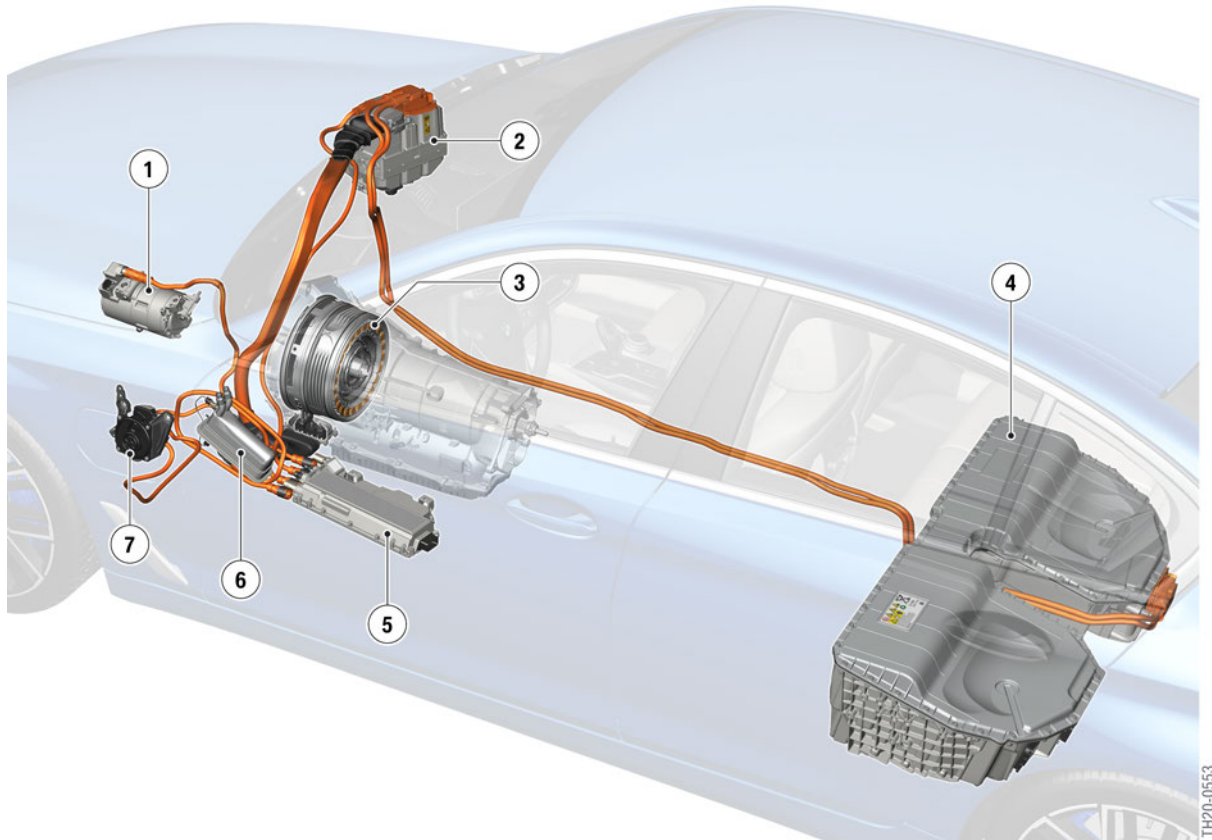
Component / system	G30 PHEV	G30 PHEV LCI
Combustion engine	B48B20M0 (180 HP, 255 lb-ft)	B48B20M1 (180 HP, 255 lb-ft)
Driving and drive system modes	4 driving modes (ECO PRO, COMFORT, SPORT, ADAPTIVE) 3 drive system modes (AUTO eDrive, MAX eDrive, BATTERY CONTROL), all can be combined	4 driving modes and BATTERY CONTROL, can be partially individualized

G30 PHEV LCI Complete Vehicle.

1. Introduction.

1.5. Hybrid generation 4.0

The G30 PHEV LCI belongs to the Hybrid Generation 4.0.



G30 PHEV LCI High-voltage system

Index	Explanation
1	Electric A/C compressor (EKK)
2	Electric motor electronics (EME)
3	Electric motor
4	SP41 High-voltage Battery
5	Convenience charging electronics (KLE)
6	Electrical heating (EH)
7	Charging socket

G30 PHEV LCI Complete Vehicle.

1. Introduction.

1.5.1. Training

The qualification to work on the high-voltage system of the G30 PHEV LCI can be acquired via the respective **web-based training** if the service employee meets the following **requirements**:

Performing work on high-voltage components

- Valid certification in "high-voltage components" for the hybrid generation **3.0**
- AND
- Valid certification in "high-voltage components" for the hybrid generation **4.0**



Separate training/certification is required to be able to work on the SP41 high-voltage battery.

G30 PHEV LCI Complete Vehicle.

2. Drive.

2.1. Model variant

Model	Combustion engine	sDrive	xDrive
530e	B48B20M1	X	X

The combustion engine is adapted to the operating conditions for the PHEV mode.

2.2. High-voltage components



High-voltage component warning sign



Only Service employees who satisfy all the prerequisites are permitted to work on the designated high-voltage components: suitable qualifications, compliance with the safety rules, procedure following the exact repair instructions.

2.2.1. Electric machine



G30 PHEV LCI electrical machine

The electric machine is a carry-over part from the previous G30 PHEV. The permanently excited synchronous machine is activated via currents from the electrical machine electronics (EME) so that a maximum torque of **195 lb-ft** is available.

G30 PHEV LCI Complete Vehicle.

2. Drive.

2.2.2. Electrical heating



TH20-0606

G30 PHEV LCI electric heater

The electric heater (EH) is a carry-over part from the previous G30 PHEV.

Due to its hybrid concept, the combustion engine of the G30 PHEV LCI generates significantly less heat loss in many driving situations and is not able to heat the coolant circuit to the necessary temperature. This is why the G30 PHEV LCI is equipped with an electric heater. In principle, this functions similar to an instantaneous water heater. The electrical heating control unit is located in the housing of the electrical heating and is connected via the LIN bus to the integrated automatic heating and air-conditioning (IHKA).

G30 PHEV LCI Complete Vehicle.

2. Drive.

2.2.3. Electric A/C compressor

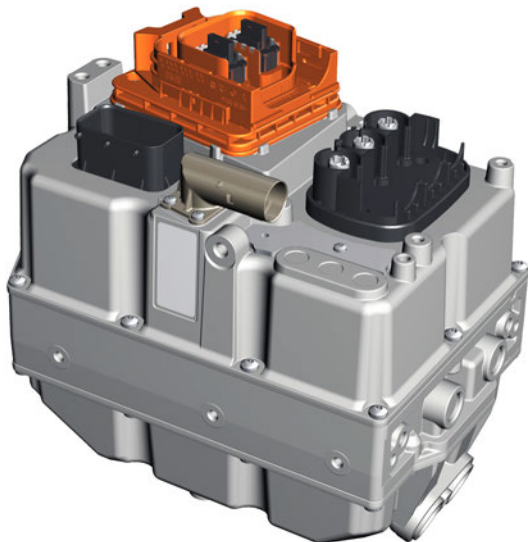


G30 PHEV LCI EKK

The EKK is a carry-over part from the previous G30 PHEV vehicles.

An electrically-operated air conditioning compressor is used in the G30 PHEV LCI. To be able to provide the necessary power, the electric air conditioning compressor EKK is operated at high voltage. The EKK enables air conditioning operation in all driving situations. In addition to cooling the vehicle interior, the refrigerant circuit cools the high-voltage battery unit. The EKK control unit is located in the housing of the air conditioning compressor; it is connected to the integrated automatic heating/air conditioning system via the LIN bus.

2.2.4. Electrical machine electronics



G30 PHEV LCI electrical machine electronics

The electrical machine electronics is a carry-over part from the previous G30 PHEV vehicles.

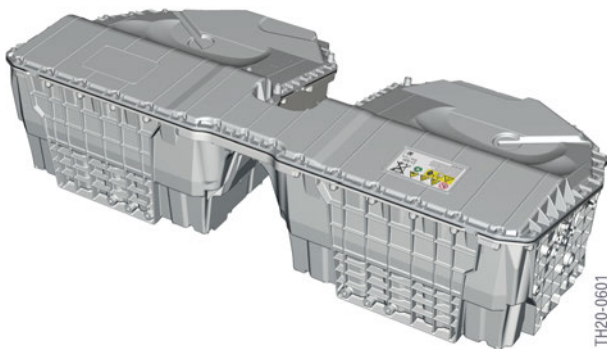
G30 PHEV LCI Complete Vehicle.

2. Drive.

The function of the electrical machine electronics (EME) is to activate and regulate the permanently excited synchronous machine in the high-voltage vehicle electrical system. This necessitates the use of a bidirectional DC/AC converter which converts the high-voltage direct current voltage of the high-voltage battery unit into a three-phase AC voltage for the electrical machine. When the electrical machine is operating in generator mode, the high-voltage battery unit is recharged via the inverter.

The EME also incorporates the DC/DC converter which is responsible for the power supply to the low-voltage electrical system. The EME is connected to the K-CAN5.

2.2.5. SP41 high-voltage battery



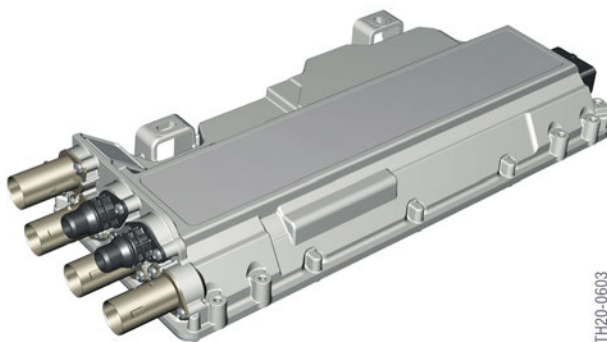
G30 PHEV LCI high-voltage battery SP41

The SP41 high-voltage battery in the G30 PHEV LCI is a carry-over part from the previous G30 PHEV.

The familiar lithium-ion battery of Generation 4.0 is used. The high-voltage battery unit can also be found in the G12 PHEV LCI vehicles and is already used in the G30 PHEV.

For more information on the SP41 high-voltage battery , refer to the “ST1927 SP41 High-voltage Battery” reference manual.

2.2.6. Convenience charging electronics



G30 PHEV LCI convenience charging electronics

The convenience charging electronics is a carry-over part from the previous G30 PHEV vehicles.

G30 PHEV LCI Complete Vehicle.

2. Drive.

The convenience charging electronics (KLE) enable communication between the vehicle and charging station of the AC voltage supply in order to charge the high-voltage battery unit. The convenience charging electronics converts the AC voltage into a direct current (DC) voltage which is used to charge the high-voltage battery unit in the vehicle. The vehicle is charged in the parked position, normally overnight in the garage. Here the charging procedure must be adapted to the available grid power.

In addition, the convenience charging electronics is equipped with high-voltage connections for the EKK and the electric heater. This permits preheating/precooling of the vehicle as long as the charging cable is connected to the AC supply without energy being taken from the high-voltage battery unit. The convenience charging electronics also controls locking of the charging plug and charging socket cover. Actuation of the charge status indicator is also controlled by the convenience charging electronics.

2.3. Brake system

No changes have been made to the brake system. This means that a DSCi control unit, as found for example in the G12 PHEV LCI or the G05 PHEV, is not installed here.

G30 PHEV LCI Complete Vehicle.

3. Charging.

The following charging options are available in the G30 PHEV LCI:

- 1.2 kW via standard charging cable
- 3.7 kW via Wallbox or public charging station.



G30 PHEV LCI charging options

3.1. Charging cable

3.1.1. Standard charging cable

The Occasional Use Charger (OUC) of the 2.0 Generation is intended for mobile use and enables charging with alternating current from a household supply network. The standard charging cable is stowed away in the luggage compartment.



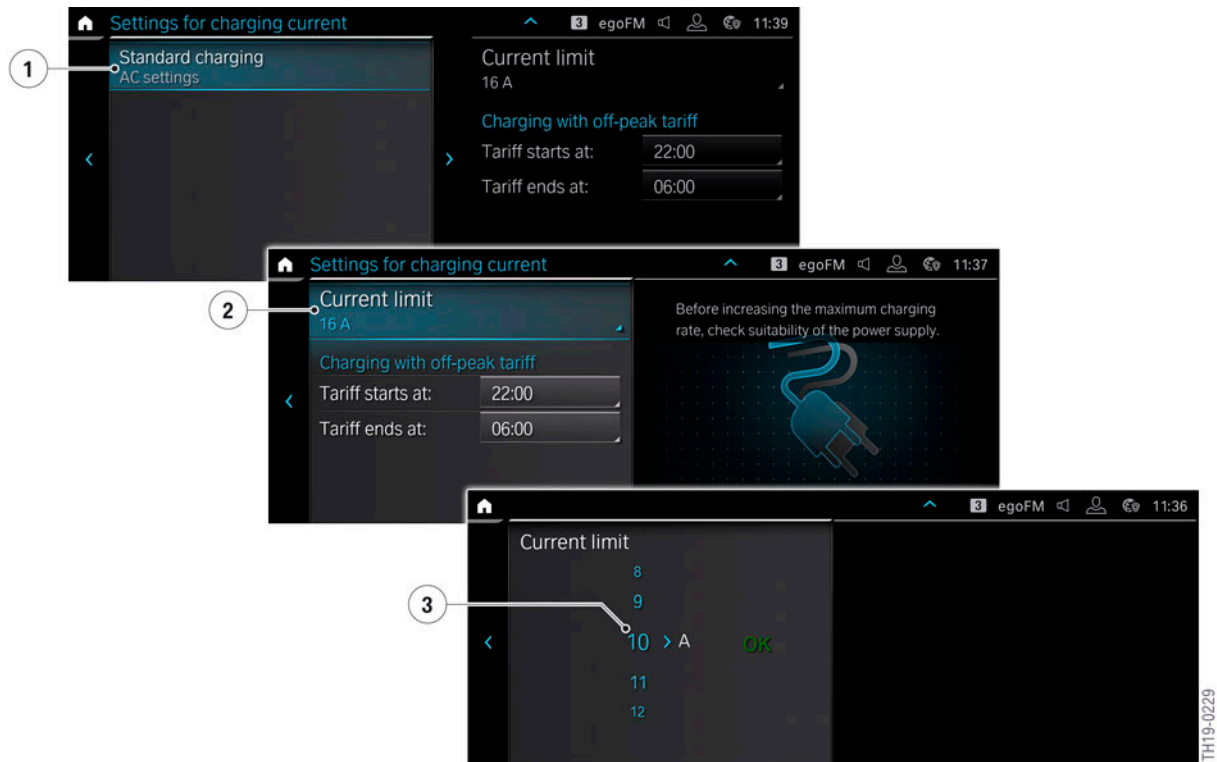
OUC of the 2nd generation

3.2. Adjusting the charge current level

The maximum current level during charging with the standard charging cable at the power socket in amperes can be precisely adjusted via the menu "Car settings/charging, climate planning/charge current setting" (adjustment range 6 to 16 A). It is generally recommended to set the maximum permissible charge current level to the lowest value for charging at an unknown power socket. Only a Maximum of 10 A is available for the Occasional Use Charger (OUC).

G30 PHEV LCI Complete Vehicle.

3. Charging.



G30 PHEV LCI Menu for the setting the charge current level

Index	Explanation
1	Menu item for selecting the charging setting
2	Menu item for adjusting the charge current level
3	Selection of the charge current level in ampere

When doing so, bear in mind that the OUC limits the maximum current level. This is 10 A when using the Generation 2.0 OUC.

It is generally recommended to set the maximum permissible charge current level to the lowest value for charging at an unknown power socket.

If the current level set by the customer has been changed during a workshop visit, it is imperative to ensure that it is reset again before handing over the vehicle to the customer. Otherwise there is a risk that the private household supply network of the customer is overloaded, and the activation of the household fuses could then be interpreted as a fault by the customer.

The customer could also complain about long charging times if the charge current setting is lower than the setting actually used by the customer.

If the BMW Wallbox is used to charge the vehicle in connection with a 240 V dedicated infrastructure, higher current levels than max. 16 A (for example) are possible.

G30 PHEV LCI Complete Vehicle.

3. Charging.



If the charge current setting used by the customer is changed during the visit to the workshop, the customer's setting must **always** be restored before handing over the vehicle.

G30 PHEV LCI Complete Vehicle.

4. Low-voltage Vehicle Electrical System.

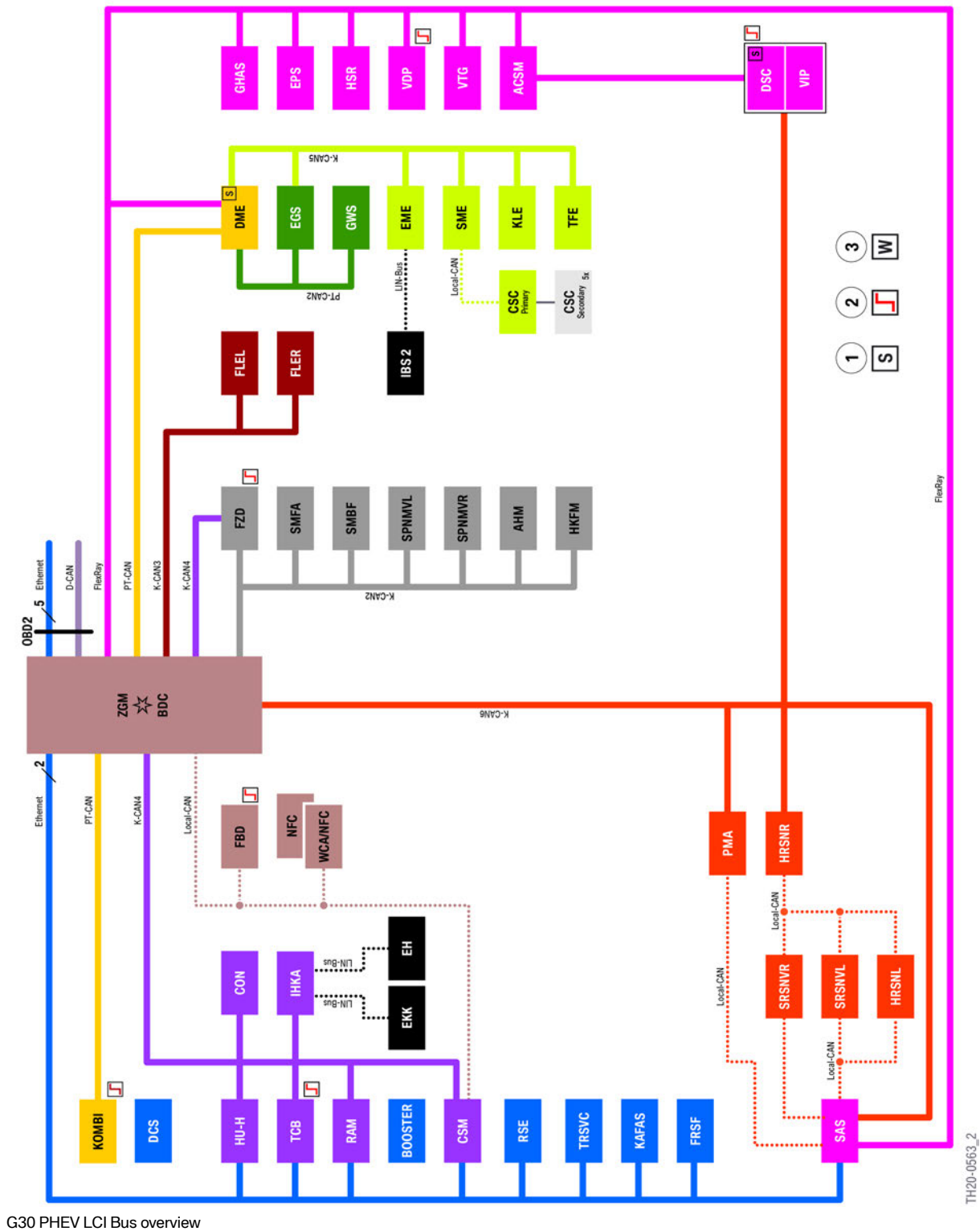
4.1. Bus overview

The bus systems of the G30 PHEV LCI are based on the bus systems of the previous G30 PHEV. Compared to the bus systems of the G30 PHEV, a number of new control units have been added, modified or are not installed. The resulting bus overview of the G30 PHEV LCI is shown below.

The representation of the individual bus systems and their designations have been adapted to the representation and the designation of the ISTA workshop information system.

G30 PHEV LCI Complete Vehicle.

4. Low-voltage Vehicle Electrical System.



G30 PHEV LCI Bus overview

G30 PHEV LCI Complete Vehicle.

4. Low-voltage Vehicle Electrical System.

Index	Explanation
ACSM	Advanced Crash Safety Module
BDC	Body Domain Controller
Booster	Booster
CON	Controller
CSC primary	Primary cell supervision circuit
CSC secondary	Secondary cell supervision circuit
CSM	Car Sharing Module
DCS	Driver Camera System
DME	Digital Motor Electronics
DSC	Dynamic Stability Control
EGS	Electronic transmission control
EH	Electrical heating
EKK	Electric A/C compressor (EKK)
EME	Electrical machine electronics
EPS	Electromechanical Power Steering
FBD	Remote control receiver
FLEL	Frontal Light Electronics Left
FLER	Frontal Light Electronics Right
FRSF	Front radar sensor long range
FZD	Roof function center
GHAS	Regulated rear axle differential lock
GWS	Gear selector switch
HU-H	Head Unit High
HKFM	Tailgate function module
HRSNL	Rear radar sensor short range left
HRSNR	Rear radar sensor short range right
HSR	Rear axle slip angle control
IBS 2	Intelligent battery sensor 2
IHKA	Integrated automatic heating / air conditioning
KAFAS	Camera-based driver assistance systems
KLE	Convenience charging electronics
KOMBI	Instrument cluster
NFC	Near Field Communication
PMA	Parking Maneuver Assistant
RAM	Receiver Audio Module

G30 PHEV LCI Complete Vehicle.

4. Low-voltage Vehicle Electrical System.

Index	Explanation
RSE	Rear Seat Entertainment
SAS	Optional equipment system
SME	Battery management electronics
SMBF	Front passenger seat module
SMFA	Driver's seat module
SPNMVL	Seat pneumatics module front left
SPNMVR	Seat pneumatics module front right
SRSNVL	Side radar sensor short range front left
SRSNVR	Side radar sensor short range front right
TCB	Telematic Communication Box
TFE	Hybrid pressure refueling electronic control unit
TRSVC	Top rear side view camera
VDP	Vertical Dynamic Platform
VIP	Virtual Integration Platform
VTG	Transfer box
WCA/NFC	Wireless charging station with control electronics for Near Field Communication
ZGM	Central gateway module
1	Start-up node control units for starting and synchronizing the FlexRay bus system
2	Control units authorized to perform wake-up function
3	Control units also connected at terminal 15WUP

G30 PHEV LCI Complete Vehicle.

4. Low-voltage Vehicle Electrical System.

4.2. Vehicle Sound Generator

The Vehicle Sound Generator (VSG) in the G30 PHEV LCI is a carry-over part from the previous G30 PHEV.

The VSG control unit has been integrated into the RAM, which is therefore also responsible for actuation of the VSG loudspeakers (only one actuator now).

Up to approximately 12 mph, the RAM generates artificial engine noise via the VSG loudspeaker(s); this becomes increasingly quieter with increasing speed (up to approximately 31 mph). The engine noise is the same when driving forwards and reversing. For US versions, more stringent legal requirements mean that an additional VSG loudspeaker is used in the rear of the vehicle.

Owing to legal requirements, the VSG is added to every vehicle that has a purely electric drive. Deactivation of the function via the iDrive menu is not possible.

Only the RAM in the mid or high variants has the VSG. The VSG loudspeaker is actuated via the main plug connector.

For more information on the VSG, refer to the “ST1928 G30 PHEV GEN. 3.0 UPDATE” reference manual.

G30 PHEV LCI Complete Vehicle.

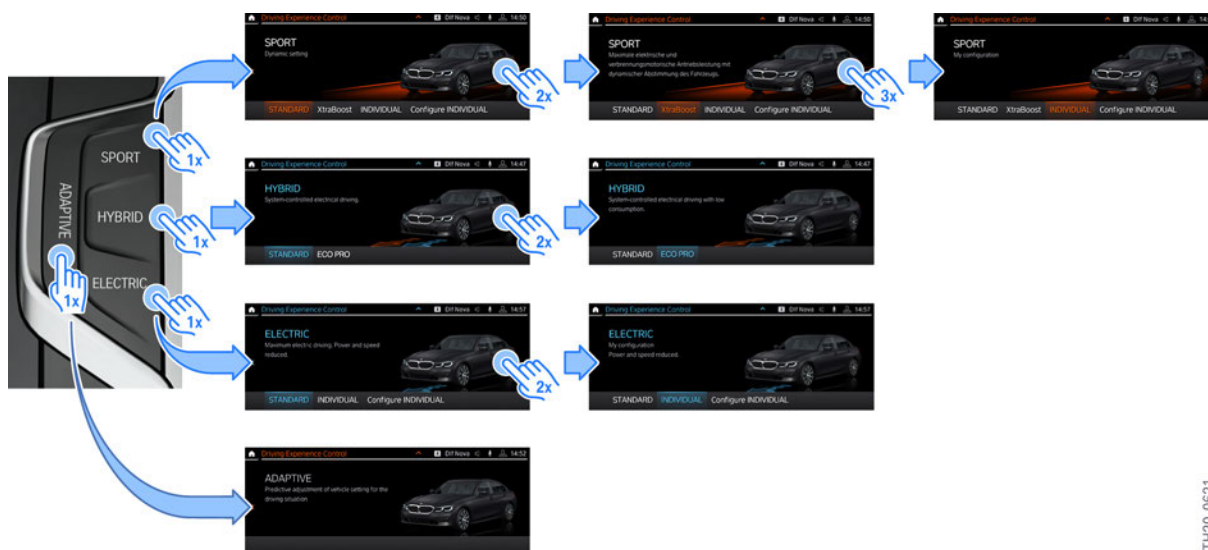
5. Displays and Controls.

5.1. Driving modes

5.1.1. Overview

The driving and drive system modes have been merged and can be activated using the new Driving Experience Control. The separate eDrive button which can be used to shift through the drive system modes is no longer deployed. Its place is taken by the Battery Control button.

The driving modes can be activated using the individual buttons and some driving modes can be configured via the controller. The "ADAPTIVE" button is installed depending on the equipment.



G30 PHEV LCI Overview of driving modes

The HYBRID driving mode is divided into 2 specified variants and/or attributes. It is possible to shift through these variants by repeatedly pressing the corresponding button on the Driving Experience Control. Alongside the standard variant, the SPORT and ELECTRIC driving modes have an individual variant which the driver can also shift through by repeatedly pressing the Driving Experience Control. In addition, these two driving modes can be configured using the controller.

The SPORT driving mode for the first time features the XtraBoost variant, in which the vehicle has maximum system output.

The familiar ECO PRO functions known from other BMW models can be activated in HYBRID and ELECTRIC driving modes in a subfunction.

A shift of the gear selector switch to the Sport/Manual position is possible in the D (drive) position. Here the combustion engine is turned on and the drive adopts a sporty style (shift characteristic, accelerator pedal, etc.). The chassis and suspension settings are not changed here.

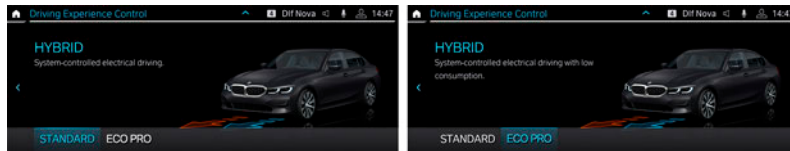
In the ELECTRIC driving mode manual shifting via the shift paddles on the steering wheel leads to a change to the HYBRID driving mode with its last selected variant.

G30 PHEV LCI Complete Vehicle.

5. Displays and Controls.

5.1.2. HYBRID

In the HYBRID driving mode, the vehicle chooses the optimum drive combination depending on the state of charge of the high-voltage battery and accelerator pedal position. If the driver's power request exceeds the maximum available electrical power, the combustion engine is activated automatically and comfortably.



G30 LCI PHEV Attributes of HYBRID driving mode

The HYBRID driving mode is available with 2 attributes:

- STANDARD
- ECO PRO

STANDARD

The attribute of the HYBRID STANDARD driving mode corresponds to the combination of COMFORT and Auto eDrive mode from the predecessor model. HYBRID STANDARD is always active after a new vehicle start.

Exception:

- The gear selector switch is in manual/Sport program position.
- The ELECTRIC INDIVIDUAL driving mode has been selected as the standard driving mode and is available.

The HYBRID STANDARD mode can in principle be divided into 2 parts: The charge depleting phase and the charge sustaining phase.

In the charge depleting phase, the G30 LCI PHEV can be driven electrically at up to approximately 68 mph. The combustion engine is activated at speeds above 68 mph or for high power requirements. The combustion engine is switched off if the speed falls below 65 mph into the electric driving range.

In the charge sustaining phase, accelerations up to approximately 25 mph and constant-speed driving up to approximately 37 mph are possible as all-electric driving. During operation at low speeds, driving states in which the combustion engine is off alternate with driving states in which the combustion engine is running.

Outside this efficiency-optimized eDrive range, the combustion engine is automatically started in case of high load and speed demands.

In general, the following applies to the electric drive: If the vehicle is driven after a long immobilization period at very cold ambient temperatures, this may result in a power reduction of the electrical drive or it may not be available at all. The reason for this may be an excessively low cell temperature in the cell modules of the high-voltage battery.

G30 PHEV LCI Complete Vehicle.

5. Displays and Controls.

ECO PRO

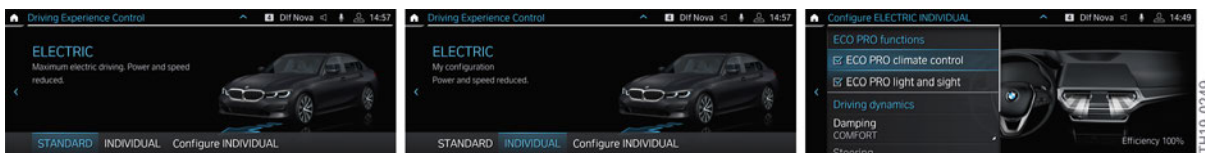
The HYBRID ECO PRO driving mode rigorously supports a driving style that reduces consumption and its attribute corresponds to the combination of ECO PRO and Auto eDrive of the predecessor model. In this driving mode, the G30 PHEV LCI offers its maximum range. Essentially the following measures help to increase the range:

- A modified accelerator pedal characteristic curve and shift program with automatic transmission helps the driver adopt a driving style that optimizes fuel consumption
- No boost function available (except with kickdown)
- Adaptive recuperation during coasting
- The combustion engine is switched off when coasting at up to 99 mph
- Power reduction of the electrical comfort consumer units such as mirror, seat or rear window heating
- Power reduction of the heating and air-conditioning system.

Individualization in the same way as in the predecessor model is no longer possible in the HYBRID ECO PRO mode. The attribute corresponds to specified parameters.

5.1.3. ELECTRIC

The attribute of the ELECTRIC driving mode corresponds to the combination of COMFORT and MAX eDrive mode of the predecessor model. In contrast to the HYBRID driving mode, in ELECTRIC INDIVIDUAL the driver has the possibility to adjust settings with regard to efficiency and driving dynamics.



G30 PHEV LCI Attributes of ELECTRIC driving mode

The ELECTRIC driving mode is available with 2 attributes:

- STANDARD
- INDIVIDUAL.

STANDARD

With a sufficient charge state of the high-voltage battery, all-electric driving of the vehicle with maximum output of the electric drive is possible for up to **37** mph. In this case, the maximum speed of 87 mph is the same as in the predecessor model.

In the STANDARD variant, all ECO PRO settings are switched off and the damping (depending on the equipment) and steering are set to "Comfort" (see ELECTRIC INDIVIDUAL).

The following events can mean that the ELECTRIC driving mode cannot be selected or is disabled:

G30 PHEV LCI Complete Vehicle.

5. Displays and Controls.

- High-voltage battery state of charge too low
- Kickdown (switch to HYBRID STANDARD)
- Speed too high
- Gear selector switch in Manual / Sport program (change to HYBRID with the last selected variant)
- Shift paddles on the steering wheel actuated (change to HYBRID with the last selected variant)
- Cell temperature too high / low
- System fault.

INDIVIDUAL

In the G30 PHEV LCI, the driver can customize the ELECTRIC driving mode and make settings with regard to efficiency and sporting character. ELECTRIC INDIVIDUAL can be selected as the standard driving mode so that this driving mode is active at every engine start. Alongside all other settings, this is saved for the driver profile currently in use.

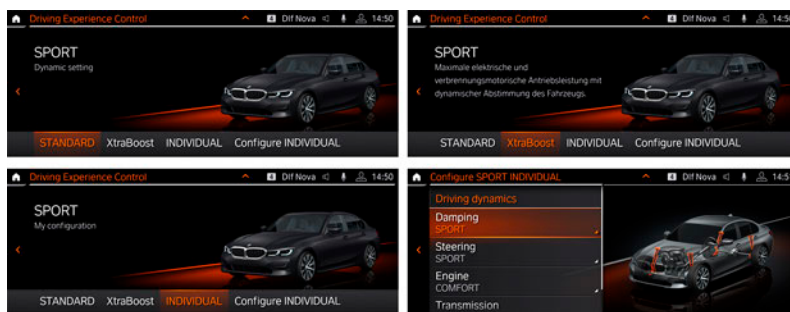
The following settings can be made:

- ECO PRO functions seat heating
- ECO PRO functions climate control
- ECO PRO functions light and sight
- Driving dynamics steering.

There is no longer a display of the ECO PRO potential.

5.1.4. SPORT

In the SPORT driving mode, a sporty engine and suspension setting provides an assured and dynamic driving experience.



G30 PHEV LCI Attributes of SPORT driving mode

The SPORT driving mode is available with 3 attributes:

- STANDARD
- XtraBoost
- INDIVIDUAL.

TH19-0250

G30 PHEV LCI Complete Vehicle.

5. Displays and Controls.

STANDARD

In the SPORT STANDARD driving mode, the combustion engine is always running or running in addition while the vehicle is being driven as soon as the driving mode is activated.

Essentially the following measures contribute to increasing the output and dynamics:

- Alteration of the attributes of the accelerator pedal characteristic curve and the shift program in automatic transmissions for a sporty driving style
- More sporty setting of the driving dynamics systems
- Boost output available
- Combustion engine is not switched off while the vehicle is being driven (only at a standstill)
- No coasting available
- Greater increase in the load point of the combustion engine to ensure sufficiently high battery charge for provision of the boost function.

XtraBoost

The XtraBoost transforms the 530e into its most dynamic form. Here the electrical machine supports the combustion engine in addition to its continuous output with up to 30 kW. Then the electrical machine's output is limited to its continuous output. Further measures are also implemented:

- Faster implementation of the torque request by the accelerator pedal module
- Sportiest setting of the driving dynamics systems
- Sportiest accelerator pedal characteristic curve
- Sportiest shift program in automatic transmissions with faster gearshifts and longer suppression of upshift
- Sportier setting of the drive acoustics in the vehicle interior (Active Sound Design (ASD)).

The energy required for XtraBoost is stored in the high-voltage battery unit and if necessary the state of charge is actively increased by means of load point increase. XtraBoost can thus be used down to minimum states of charge (within the framework of the hybrid drive's system limits). In this driving mode the combustion engine is permanently active.

XtraBoost is fitted as standard and can be distinguished by an inscription of the same name in the instrument cluster from the SPORT STANDARD driving mode.

If the selector lever is set to Manual/Sport, only the additional output of 30 kW is briefly available. The other attributes, such as shift program or Active Sound Design, are not changed as described above.

The XtraBoost function is **only** available in Hybrid vehicles.

G30 PHEV LCI Complete Vehicle.

5. Displays and Controls.

INDIVIDUAL

Just like in the ELECTRIC driving mode, the SPORT driving mode can be customized. The following ranges of adjustment are used.

- Steering
- Engine
- Transmission

5.1.5. ADAPTIVE

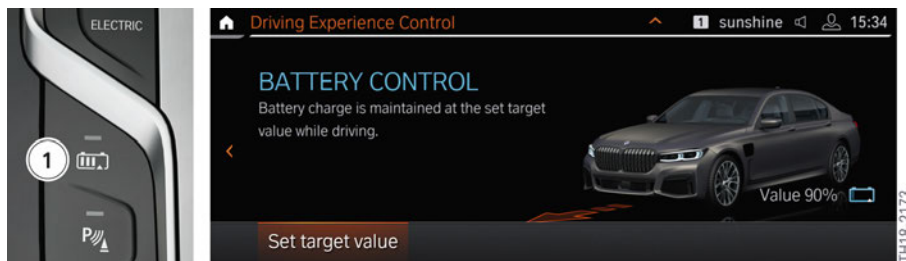
With the ADAPTIVE driving mode, the entire engine and vehicle setting automatically adapts to both the driving situation and the driving style.

5.1.6. Service note

The combustion engine can be started with the vehicle at a standstill, for example for an emission inspection. To achieve this, with activated driving readiness, the brake **and** accelerator must be pressed while drive position P or N is engaged.

5.2. BATTERY CONTROL

The BATTERY CONTROL mode is selected via the separate Battery Control button. Another new feature is the charge target value. This can now be adjusted to a charge state of 30-100%.



G30 PHEV LCI BATTERY CONTROL

Index	Explanation
1	Battery Control button

G30 PHEV LCI Complete Vehicle.

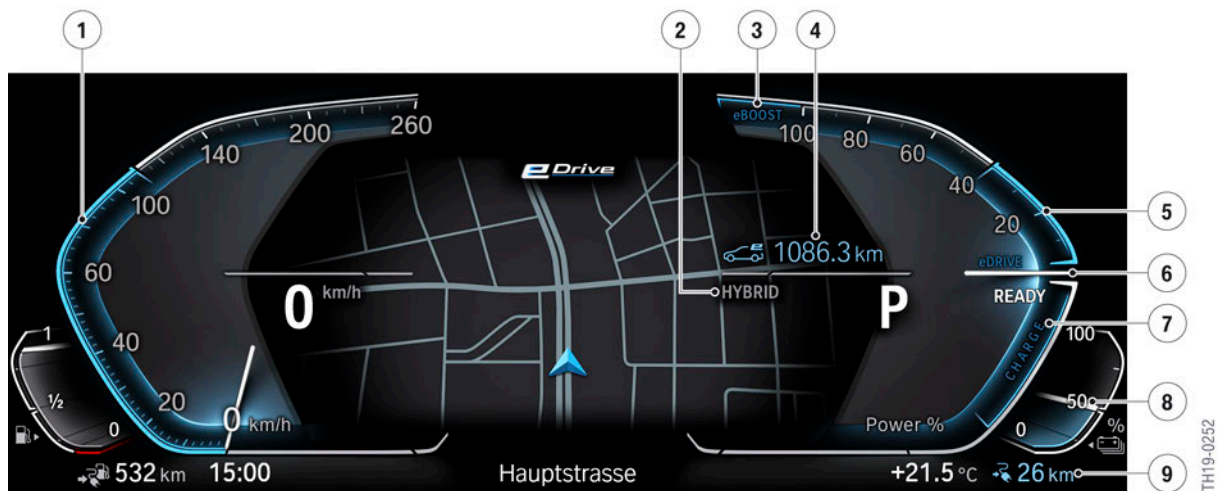
5. Displays and Controls.

5.3. Displays in the instrument cluster

5.3.1. Displays of operating conditions

The hybrid-specific operating states and the state of charge of the high-voltage battery unit are displayed in the instrument cluster and, if desired, in the Central Information Display (CID).

The displays shown below may appear, depending on the driving situation and driving mode.



G30 PHEV LCI hybrid-specific instrument cluster

Index	Explanation
1	All-electric driving is possible within this speed range. In the ELECTRIC driving mode, the range up to 87 mph is highlighted.
2	Display of the driving mode
3	eBoost: the needle is in the eBoost range during powerful acceleration.
4	All-electric driving distance travelled
5	eDRIVE range: All-electric driving is possible within this range.
6	READY: Driving readiness established
7	CHARGE: The needle shows the energy recovery as a function of the deceleration or brake pedal actuation intensity.
8	State of charge of high-voltage battery unit with new battery symbol
9	Remaining electric range

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5. Displays and Controls.

In the instrument cluster, the driver is provided with a visual acknowledgement about the level of requested power.

Depending on the activated driving mode, the following additional information is displayed in the form of widgets in the right-hand area of the instrument cluster (KOMBI).

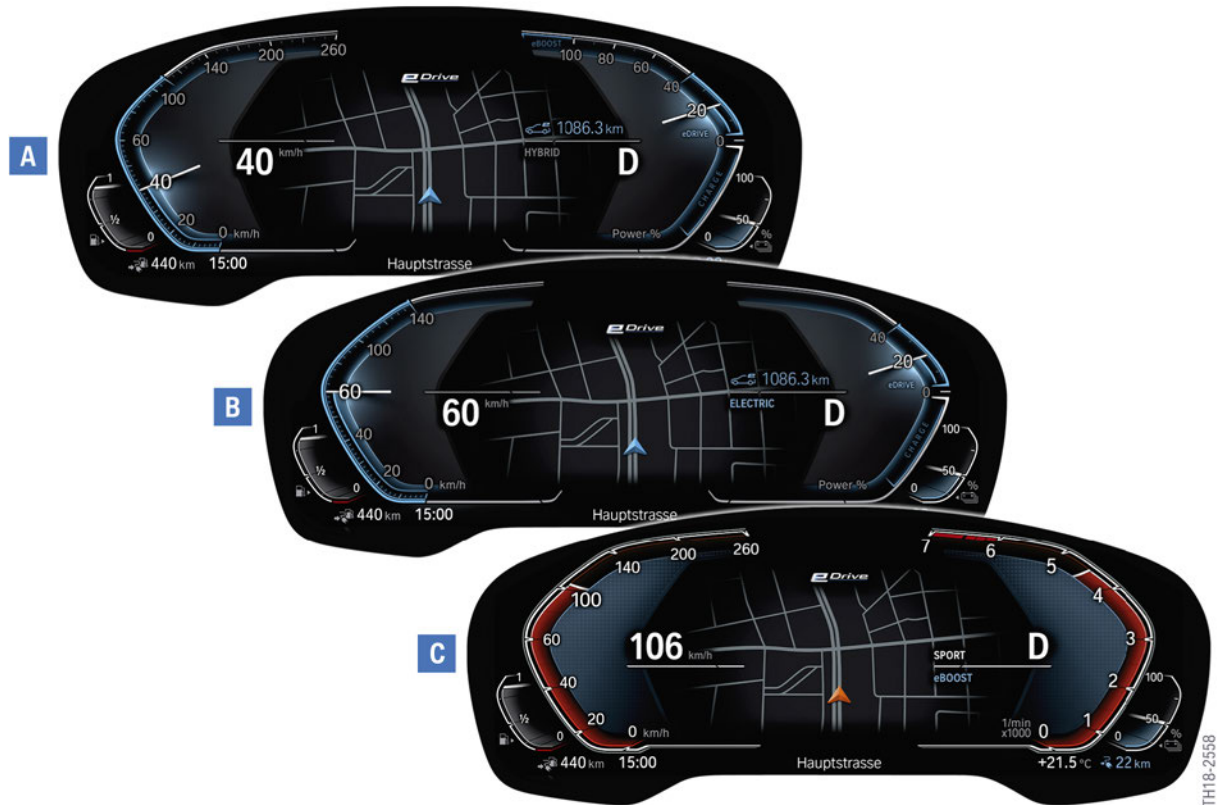
Driving mode	Widget
HYBRID	<ul style="list-style-type: none">• Current consumption (fuel)• Consumption display (fuel)• Average consumption (fuel)• Distance recorder for driving without combustion engine.
ELECTRIC	<ul style="list-style-type: none">• Current consumption (electrical energy)• Consumption display (electrical energy)• Average consumption (electrical energy)• Distance recorder for driving without combustion engine.
SPORT	<ul style="list-style-type: none">• Coolant temperature.

G30 PHEV LCI Complete Vehicle.

5. Displays and Controls.

5.3.2. Display modes

The following graphic shows the instrument cluster (KOMBI) in the various driving modes:



G30 PHEV LCI Driving modes in the instrument cluster

Index	Explanation
A	HYBRID
B	ELECTRIC
C	SPORT

