

Innovation Days Connected Drive meets Efficient Dynamics.
Efficient Dynamics meets Connected Drive.



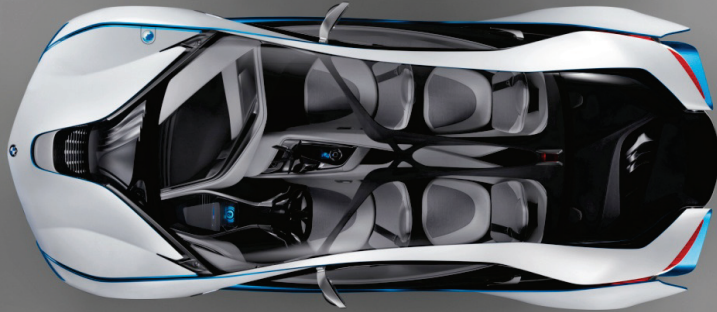
Connected Drive

BMW Group



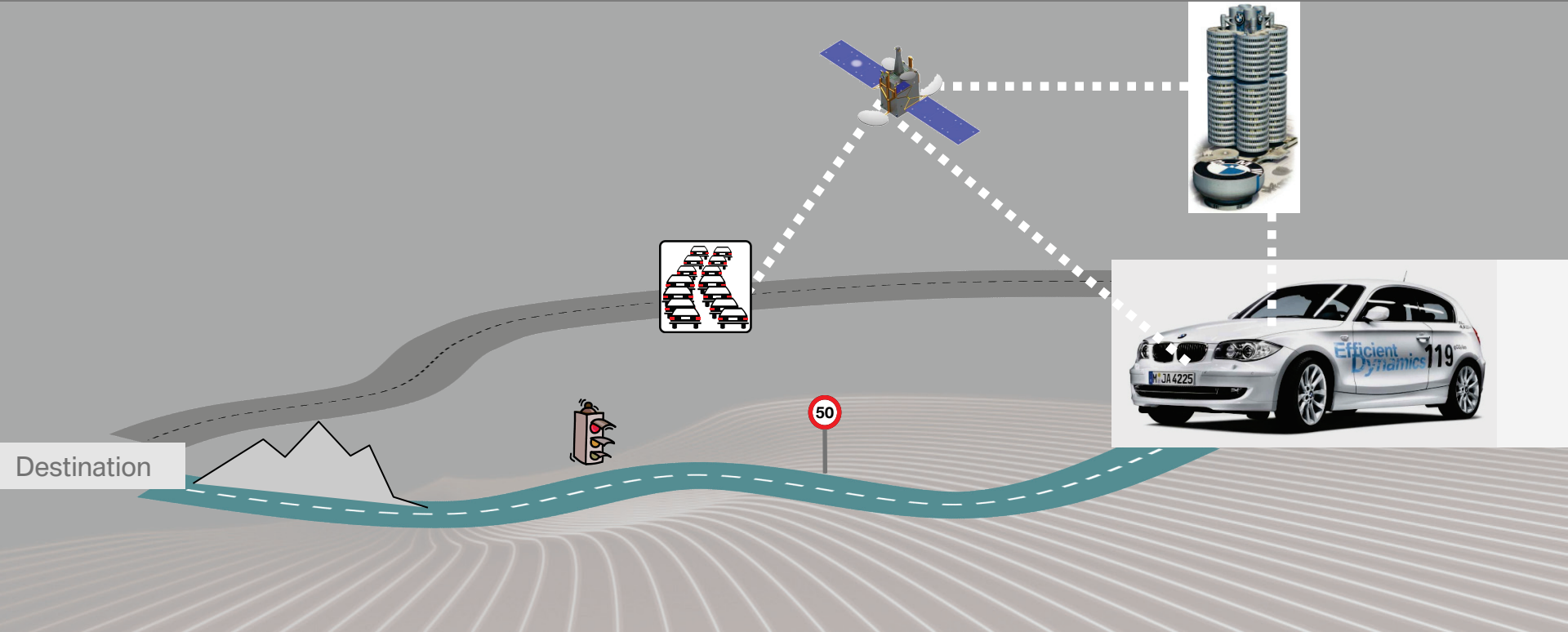
Innovation Days Connected Drive meets Efficient Dynamics. Efficient Dynamics meets Connected Drive.

BMW EfficientDynamics
Less emissions. More driving pleasure.



Connected Drive meets Efficient Dynamics. Welcome.

Using Connected Drive for Efficient Dynamics



Connected Drive meets Efficient Dynamics.

Today you will find out about how BMW is taking Efficient Dynamics forward...

BMW EfficientDynamics
Less emissions. More driving pleasure.



Fuel savings and driving pleasure thanks to intelligent, networked, proactive driving



Connected Drive meets Efficient Dynamics. ... and what Connected Drive can add to that.

Information getting into the vehicle



Sensors

Pedestrians, position on your lane, Active Cruise Control ...



Networks

Mobile phone, radio (traffic info, weather, news, music) ...



External devices

USB-Sticks, CD/mp3, iPod, Smartphone ...)



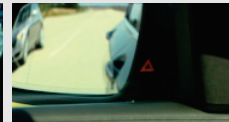
Information from the vehicle



about:

Vehicle status, route information, traffic information, emergence info, location, driver's preferences ...

Displays and feedback



Connected Drive meets Efficient Dynamics.

Today's agenda.

Theory:

- MINIMALISM Analyser
- ECO Assistant
- Active coasting
- Proactive Driving Assistant
- Intelligent Learning Navigation
- Green Driving Assistant

Driving prototypes:

- MINIMALISM Analyser
- ECO Assistant
- Active coasting
- Proactive Driving Assistant
- Intelligent Learning Navigation

MINIMALISM Analyser

- optimising fuel efficiency



ECO Assistant with active coasting

- ECO trainer built into the car
- fuel savings when coasting



Proactive Driving Assistant

- early anticipation of situation
- efficient deceleration



Intelligent Learning Navigation

- self-teaching route predictor
- networked



Connected Drive meets Efficient Dynamics.

Efficient Dynamics: Where are we coming from – where are we heading?

Needs-based steering of
auxiliary components.

Optimum shift
indicator.

Brake Energy Regeneration.

Smooth running tyres.



Auto Start Stop Function.

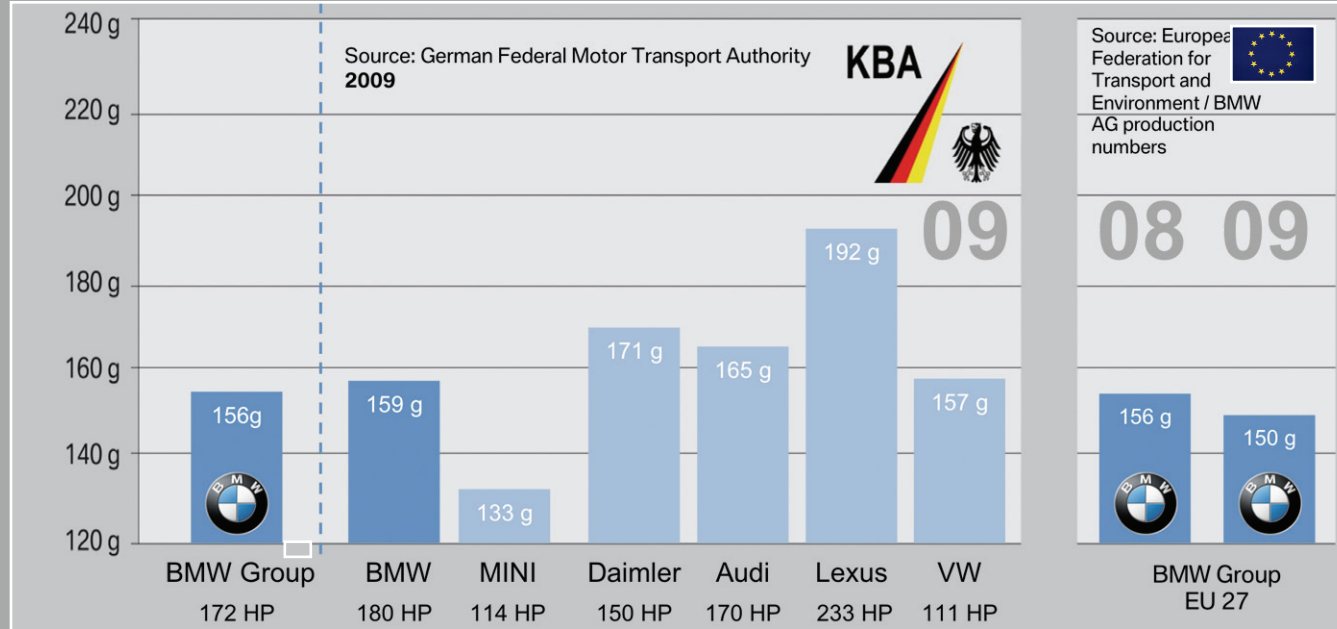
Highly efficient petrol and diesel engines

Active aerodynamics.

Electromechanic power assisted steering.

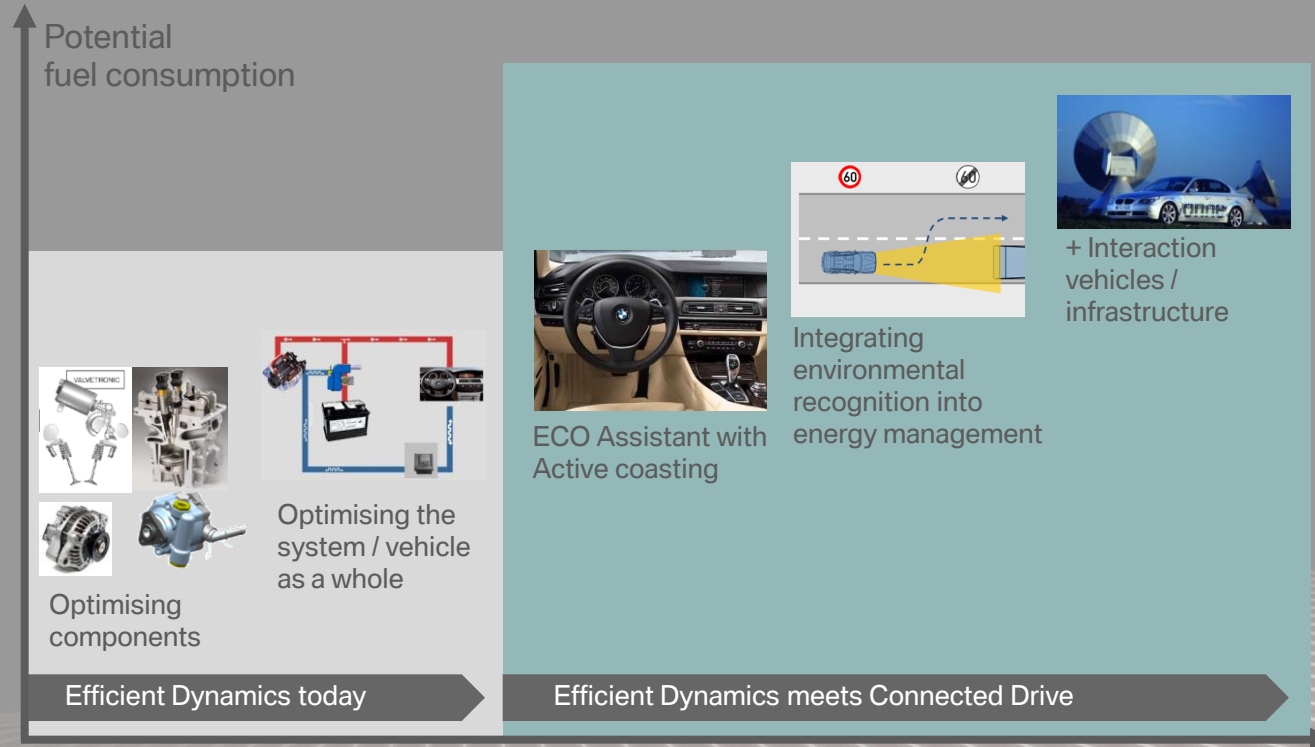
BMW Group EfficientDynamics.

Leading with EfficientDynamics.



Connected Drive meets Efficient Dynamics.

Efficient Dynamics: Where are we coming from – where are we heading?



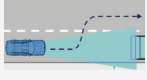
Connected Drive meets Efficient Dynamics.

We use existing data from the car for Proactive Energy Management.

Satnav data



ACC radar



DSC



Camera



PDC



Light /
rain sensor



DME



Car 2 X



Merging of existing
sensor data

Identification of
energy-related
driving situations



Prediction of optimal
prospective driving status

Optimising the vehicle's operating strategy



Supporting proactive driving



Most fuel-efficient route



Connected Drive meets Efficient Dynamics.

Proactive Energy Management.

Maximum dynamics during acceleration



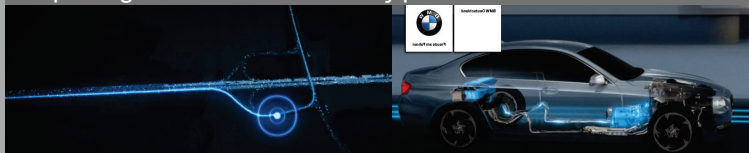
Dynamic situation is identified, battery is charged, boost is prepared

Safe electric driving all the way to the destination



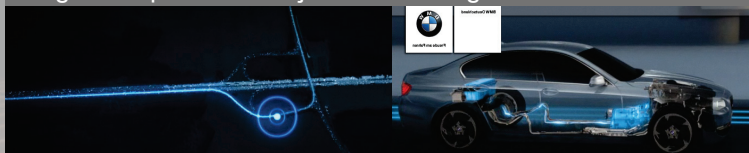
Home zone is identified, battery is charged, eDrive is prepared

Exploiting the road's full efficiency potential



Gradient is identified, battery is utilised, charging is prepared

Engine temperature is adjusted according to the situation



Stretch of road ahead is identified, engine temperature is adjusted accordingly

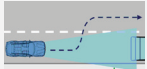
Connected Drive meets Efficient Dynamics.

Where do we go from here? We are tapping further potential through ECO driver assistance and intelligent, integrated energy management.

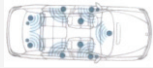
Satnav data



ACC radar



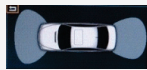
DSC



Camera



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DME



Car 2 X



Light /
rain sensor



Merging of existing
sensor data

Recognition of
energy-related
driving situations



Prediction of optimal
prospective driving status

Optimising the vehicle's operating strategy



Supporting proactive driving



Most fuel-efficient route



Connected Drive meets Efficient Dynamics.

The driver has a significant impact on fuel consumption.

ECO driver training

ECO driver analysis

ECO driver assistance



MINIMALISM Analyser.

Overview of functions.

Driving situation Analysis



Speed

Gear selection

Deceleration

Acceleration

Auto Start Stop

Comfort

Climate control, windows,
seat heating, tyre pressure



FEEDBACK **during** the journey

Audible alert
when Mission Control is active

Remote HMI display in the CID:



ANALYSIS

after the journey on iPhone



MINIMALISM Analyser.

Analysis options after the journey.

Journey selection



Community ranking



Analysis



Connected Drive meets Efficient Dynamics.

The driver has a significant impact on fuel consumption.

ECO driver training

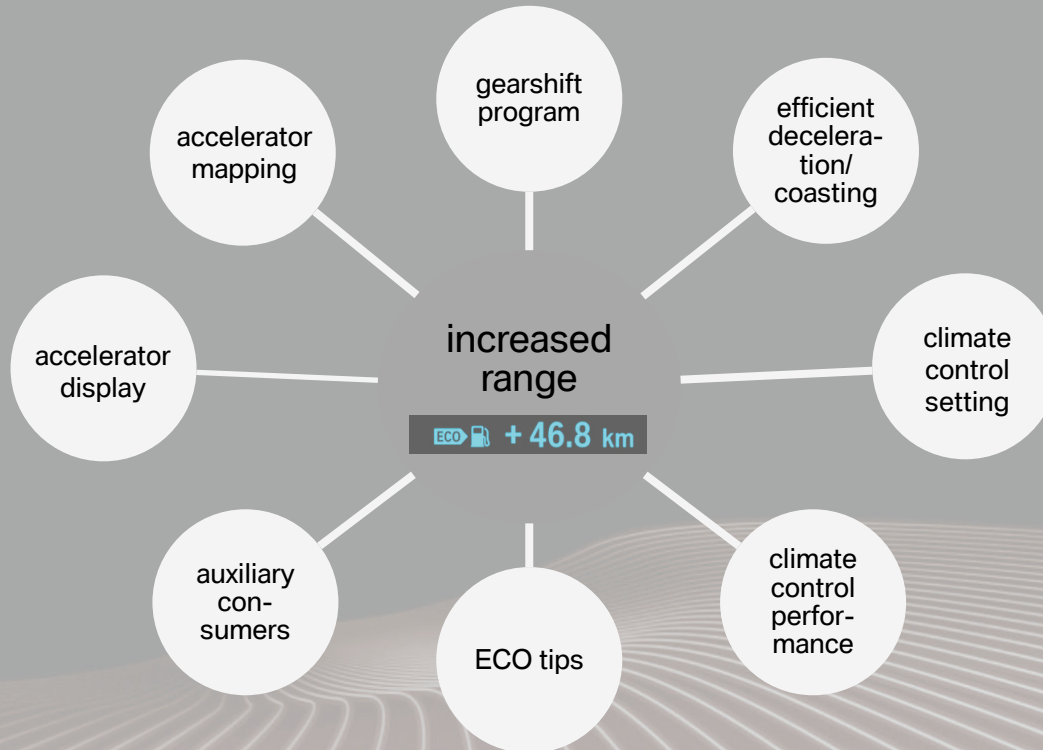
ECO driver analysis

ECO driver assistance



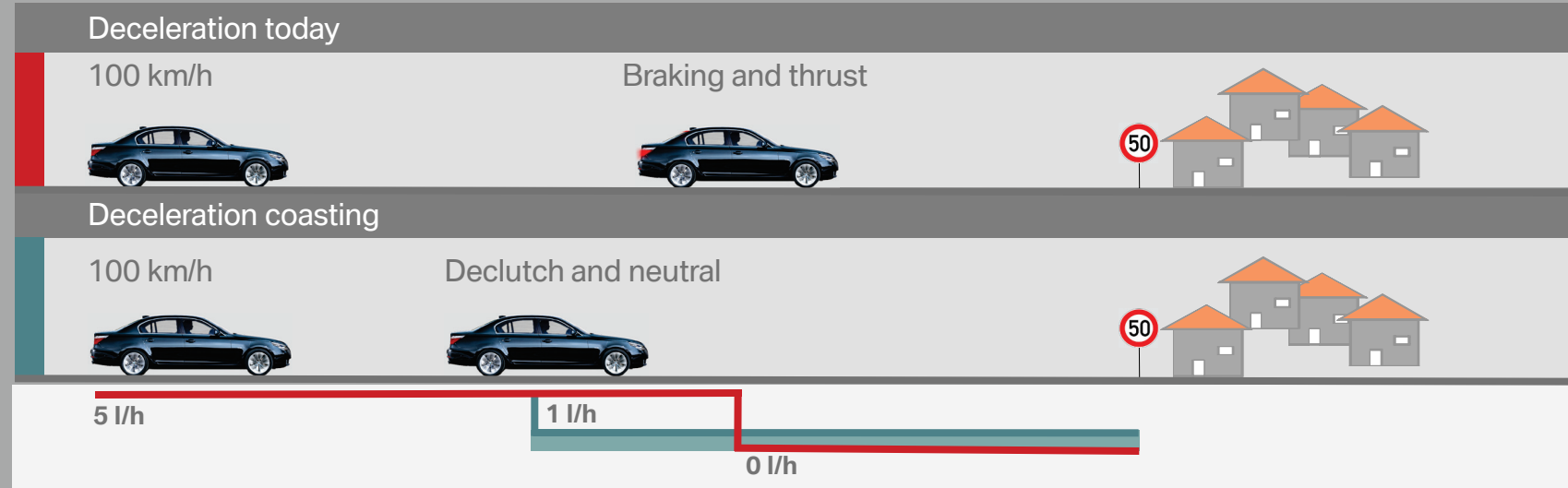
Connected Drive meets Efficient Dynamics.

ECO driver assistance provides optimal driver support and indicates how much fuel has been saved. ECO driving at the push of a button.



Connected Drive meets Efficient Dynamics.

Active coasting.



Coasting for automatic vehicles as part of ECO mode.

Drive train disconnected if driver eases off the accelerator and does not brake.

Vehicle can coast for longer with minimum fuel consumption. Frictional losses are avoided.

It's fascinating to see how far a car can roll! (e.g. 120 km/h → 60 km/h: 1500m)

Connected Drive meets Efficient Dynamics.

Predictive driving recognises speed-related situations before the driver does.



Using navigation map data, the vehicle can calculate how far ahead speed-relevant road situations are

50 km/h in 600m



More efficient
braking



A display alerts the driver to the upcoming deceleration stretch

→ Supporting efficient, proactive driving

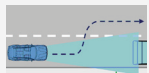
Connected Drive meets Efficient Dynamics.

Where do we go from here? We are tapping further potential through ECO driver assistance and intelligent, integrated energy management.

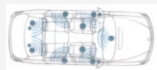
Satnav data



ACC radar



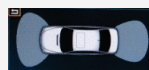
DSC



Camera



PDC



Light /
rain sensor



DME



Car 2 X



Merging of existing
sensor data

Recognition of
energy-related
driving situations



Prediction of optimal
prospective driving status

Optimising the vehicle's operating strategy



Supporting proactive driving



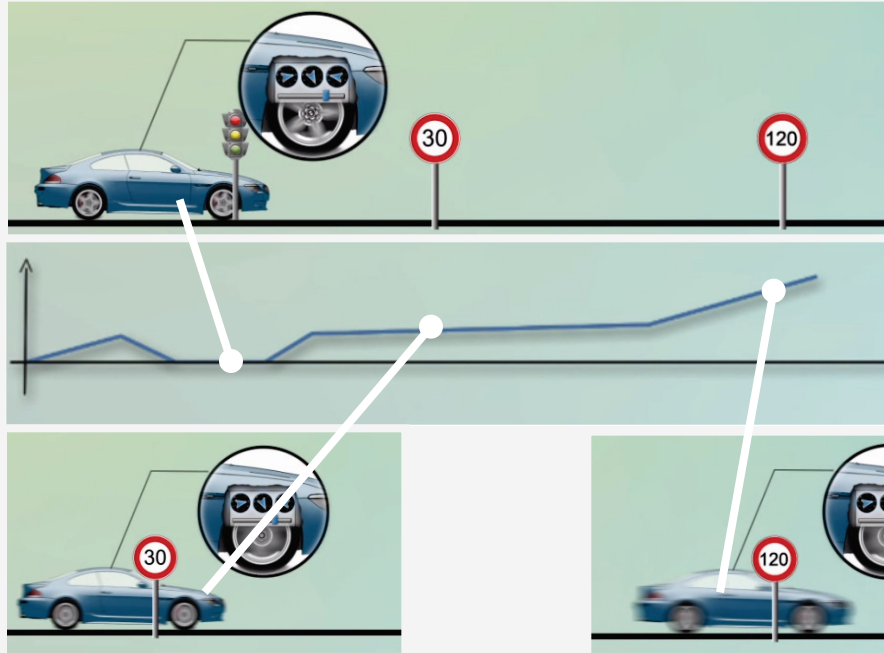
Most fuel-efficient route



Connected Drive meets Efficient Dynamics.

Intelligent Learning Navigation – predictive information.

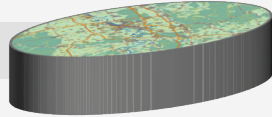
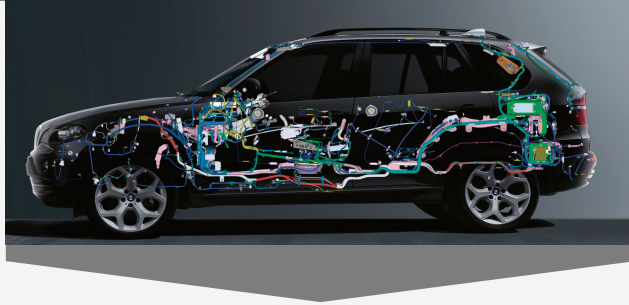
Saving energy through predictive navigation



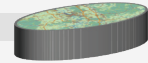
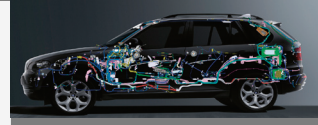
Connected Drive meets Efficient Dynamics.

Intelligent Learning Navigation – predictive information.

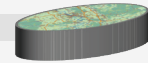
Vehicle sensors



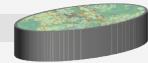
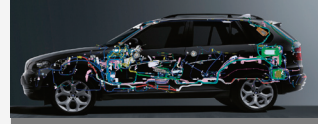
Knowledge base



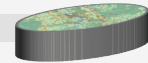
Knowledge base



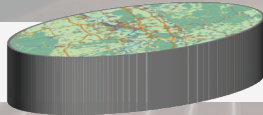
Knowledge base



Knowledge base



Knowledge base

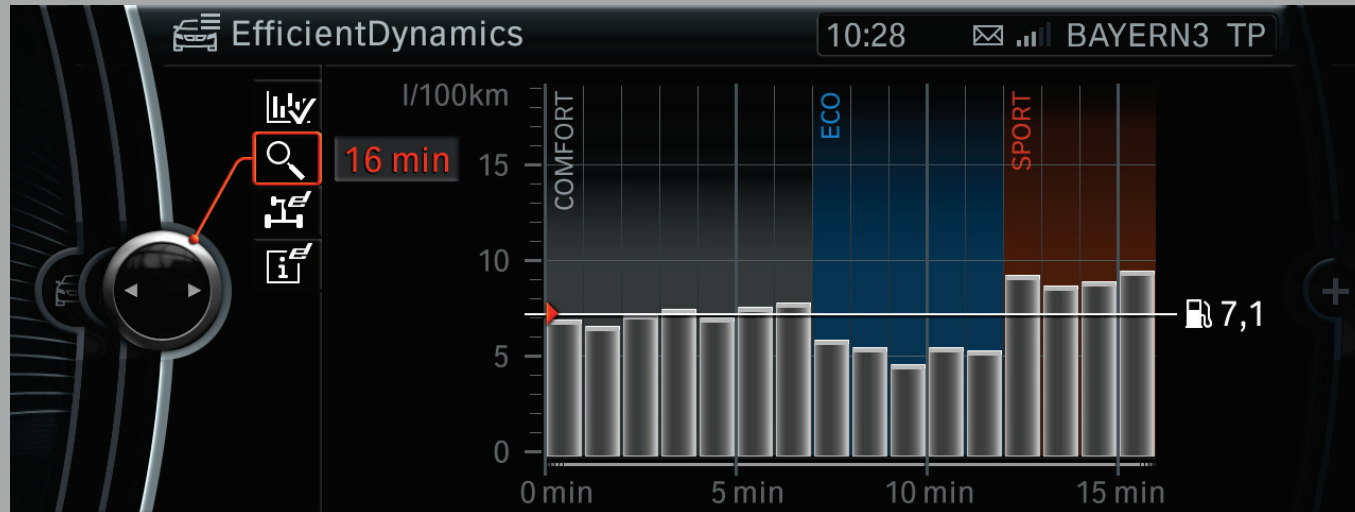


Central knowledge base

Connected Drive meets Efficient Dynamics.

Overall potential.

Overall, the EfficientDynamics functions we have featured allow customers potential savings of 15 percent.



Connected Drive meets Efficient Dynamics. Green Driving Assistant.

→ Fuel stop required

→ No fuel stop required

Current route:

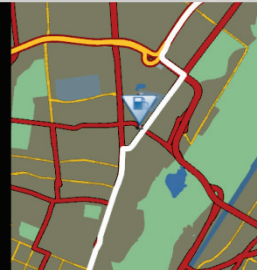
Quickest Route via the motorway

Alternative route:

ECO route via country road



OMV	1,37 EUR
4,1 km 0,0 km 0 Min.	
Sprint	1,37 EUR
7,5 km 0,0 km 4 Min.	
Shell	1,37 EUR
5,4 km 0,4 km 1 Min.	
SB Tankstelle D...	1,37 EUR



17:26	105 km
+18 min	146 km
✓ Aktuelle Route	
Aktuelle im ECO-Modus	
ECO-Route (ECO 120)	
ECO-Route (ECO 80)	
Tankstellenassistent	



Innovation Days Connected Drive meets Efficient Dynamics.
Thank you for your attention.

An abstract graphic featuring a wireframe sphere on the left, composed of glowing orange lines. Several other orange lines flow from the sphere towards the right. Below the sphere, a series of concentric, wavy orange lines create a sense of depth and movement. The background is black, and the bottom of the image transitions into a light gray area with a pattern of fine, parallel white lines.

Connected Drive