

SEMICONDUCTORS

provide solutions that help people and the planet
reduce energy and power consumption by increasing energy efficiency
and improving functionality in many products.

From the light in our homes, to the modern automobile, to the solar panels, smart meters and grid infrastructure powering our neighbourhoods, to our smartphones and tablet computers, semiconductors are at the heart of a modern energy-efficient society.

Doing more whilst using less is a key part of the EU's 2020 strategy on resource-efficiency. The wiser use of energy through continuous improvements in the field of energy efficiency is a central goal for European and Global society. The EU's 2030 climate and energy policy framework agreement calls for:

- a reduction of at least **40%** in greenhouse gas emissions by 2030 compared to 1990 levels,
- a renewable energy share of at least **27%** of energy consumption,
- a indicative target to increase energy efficiency by at least **27%**.

Semiconductor technology innovations enable the more efficient use of electrical energy in lighting, in computing, in data storage centers, in intelligent transport systems, in electric vehicles, and in industrial manufacturing systems. Energy efficiency will also be one of the drivers in the rolling out of the **Internet of Things** (IoT).

Semiconductors are at the heart of this drive towards **a more energy-efficient Europe** and the semiconductor industry is ready to play its role in meeting this objective.



THE VOICE OF THE SEMICONDUCTOR INDUSTRY IN EUROPE

European Semiconductor Industry Association

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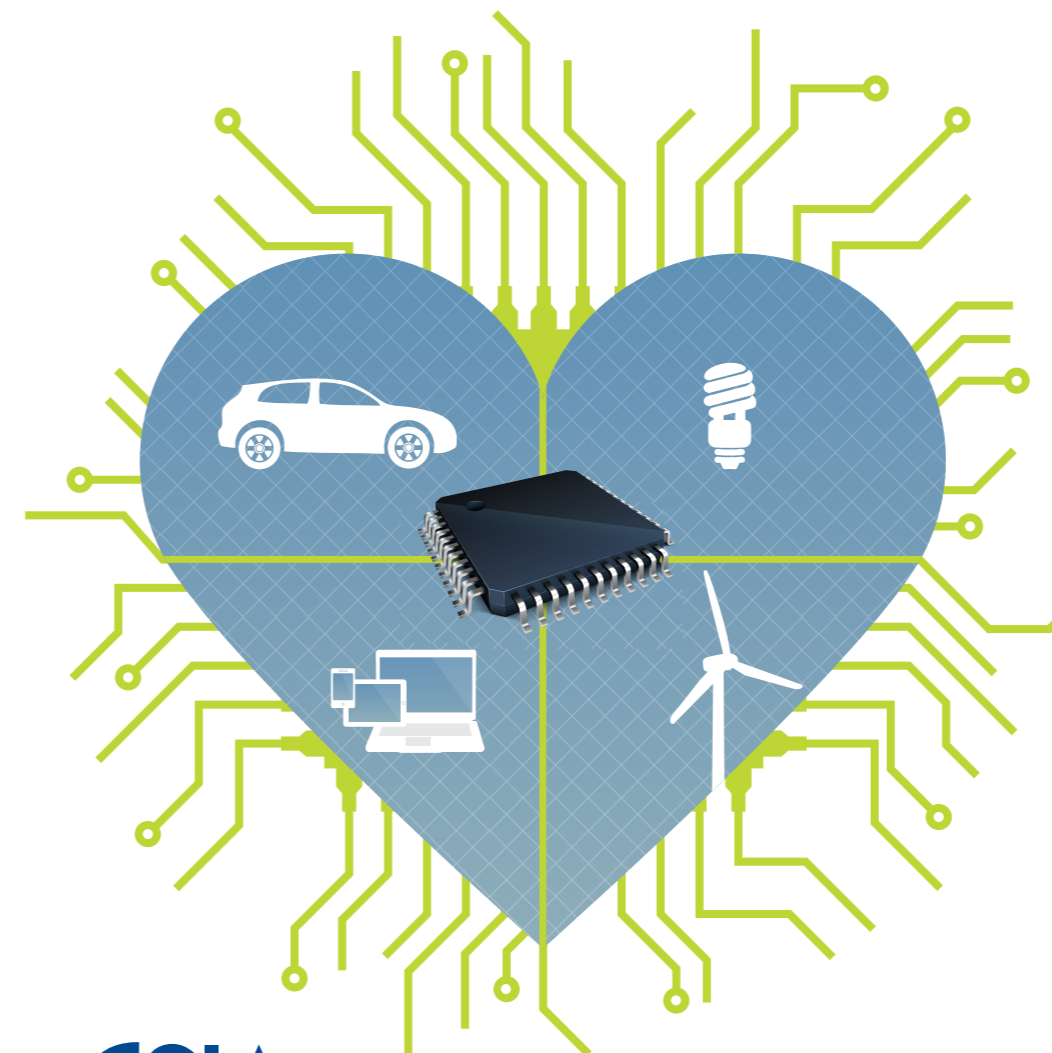
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Sources: Robert Bosch, NXP Semiconductors, Infineon Technologies AG, STMicroelectronics, Intel Corporation, energy.gov

SEMICONDUCTORS

AT THE HEART OF ENERGY EFFICIENCY



European Semiconductor Industry Association

The **European Semiconductor Industry Association** (ESIA) is the
VOICE of the Semiconductor Industry in Europe.

ESIA's mission is to represent and promote the common interests of the Europe-based semiconductor industry towards the European institutions and stakeholders in order to ensure a sustainable business environment and foster its global competitiveness.

As a provider of **key enabling technologies** the industry creates innovative solutions for industrial development, contributing to economic growth and responding to major **societal challenges**.

Being ranked as the most R&D intensive sector by the European Commission, the European Semiconductor ecosystem supports approx. **200.000 jobs directly** and up to **1.000.000 induced jobs** in systems, applications and services in Europe. Overall, micro- and nano-electronics enable the generation of at least **10% of GDP** in Europe and the world.

RENEWABLES

Semiconductors enable a more efficient transmission and use of electrical energy over long distances from renewable energy sources.

Power semiconductor converters in offshore wind turbines are used to convert power and to couple the generator with the smart grid infrastructure.

High voltage silicon carbide-based semiconductors used in solar inverters increase the energy efficiency of power supplies.

Smart meters enabled by semiconductors allow consumers to efficiently control their energy consumption.

AUTOMOTIVE

Automobiles consist of a myriad of semiconductors that facilitate energy savings.

In vehicle networks

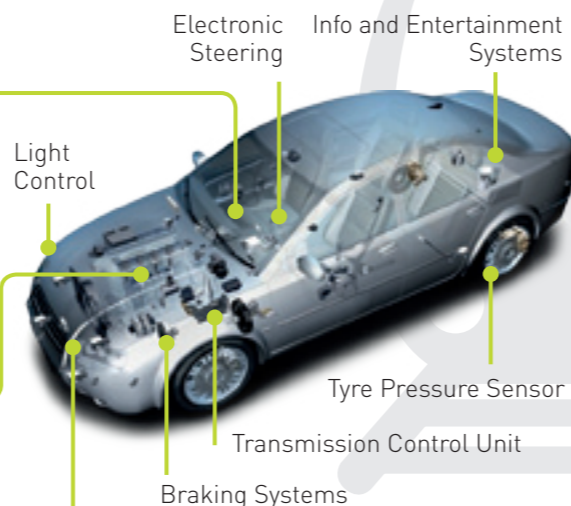
Increase fuel efficiency by reducing car weight e.g.- anti-braking systems (ABS).

Engine control unit sensors

Improve the efficient use of fuel.

Adaptive cruise control sensor

Helps reduce emissions.



DID YOU KNOW ?

The modern car contains

> 100 sensors

50-100 microprocessors

> 40 electric/electronic systems

LIGHTING

Today's light-emitting diode (LED) bulbs cut energy use by more than 80% and can be up to 7 times more energy efficient than conventional lighting.

A light-emitting diode (LED) is a type of solid-state lighting that uses a semiconductor to convert electricity into light.

Semiconductor enabled LEDs are used in a wide range of applications such as street lights, traffic lights, vehicle brake lights and TVs.

MOBILE COMPUTING

Personal computers consume 50% less energy than past models due to microprocessor innovations.



DID YOU KNOW ?

- Integrated circuits (ICs) enable energy-efficient chargers, power adapters and power supplies across many applications including: smartphones, media tablets, e-readers and audio/video players,
- Remote PC management ensures diagnosis and repair capabilities that save fuel costs and time.