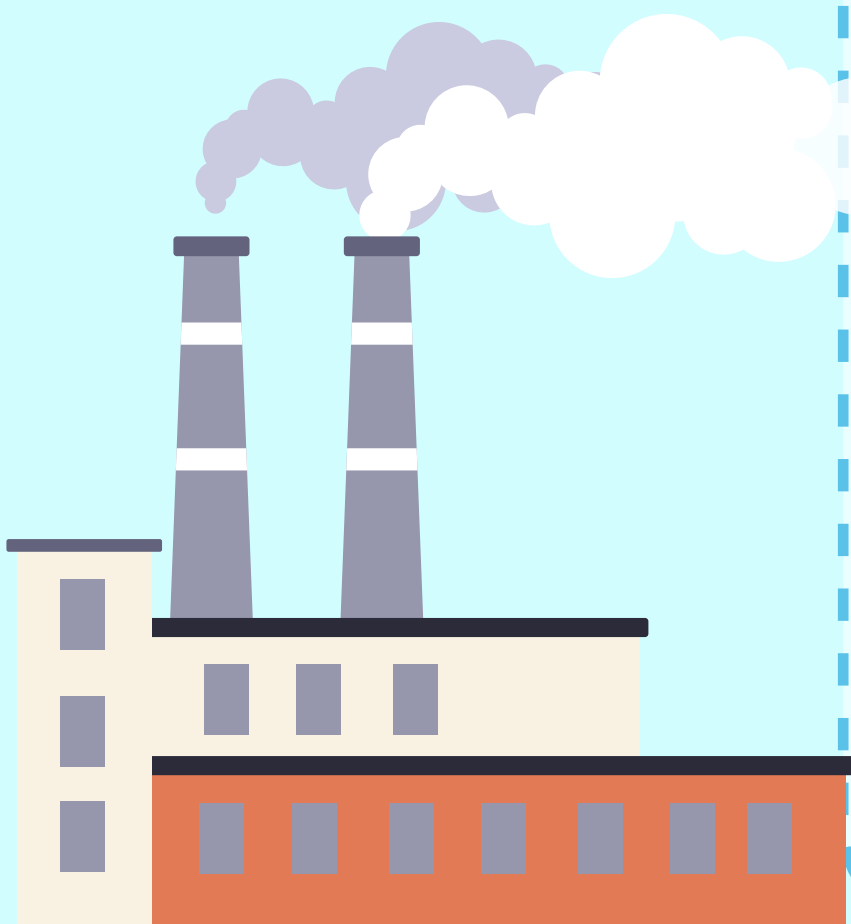# A CHIP FABRICATION PLANT/FAB FOR CHIP MANUFACTURING

Requires huge amounts of energy & water which contributes to the climate crisis

700-acre single fab, consumption in the first three months in 2021

92	MILLIONS GALLONS OF FRESH WATER
15,000	TONS OF WASTE
60%	HAZARDOUS WASTE
561	MILLIONS KILOWATT-HOURS OF ENERGY

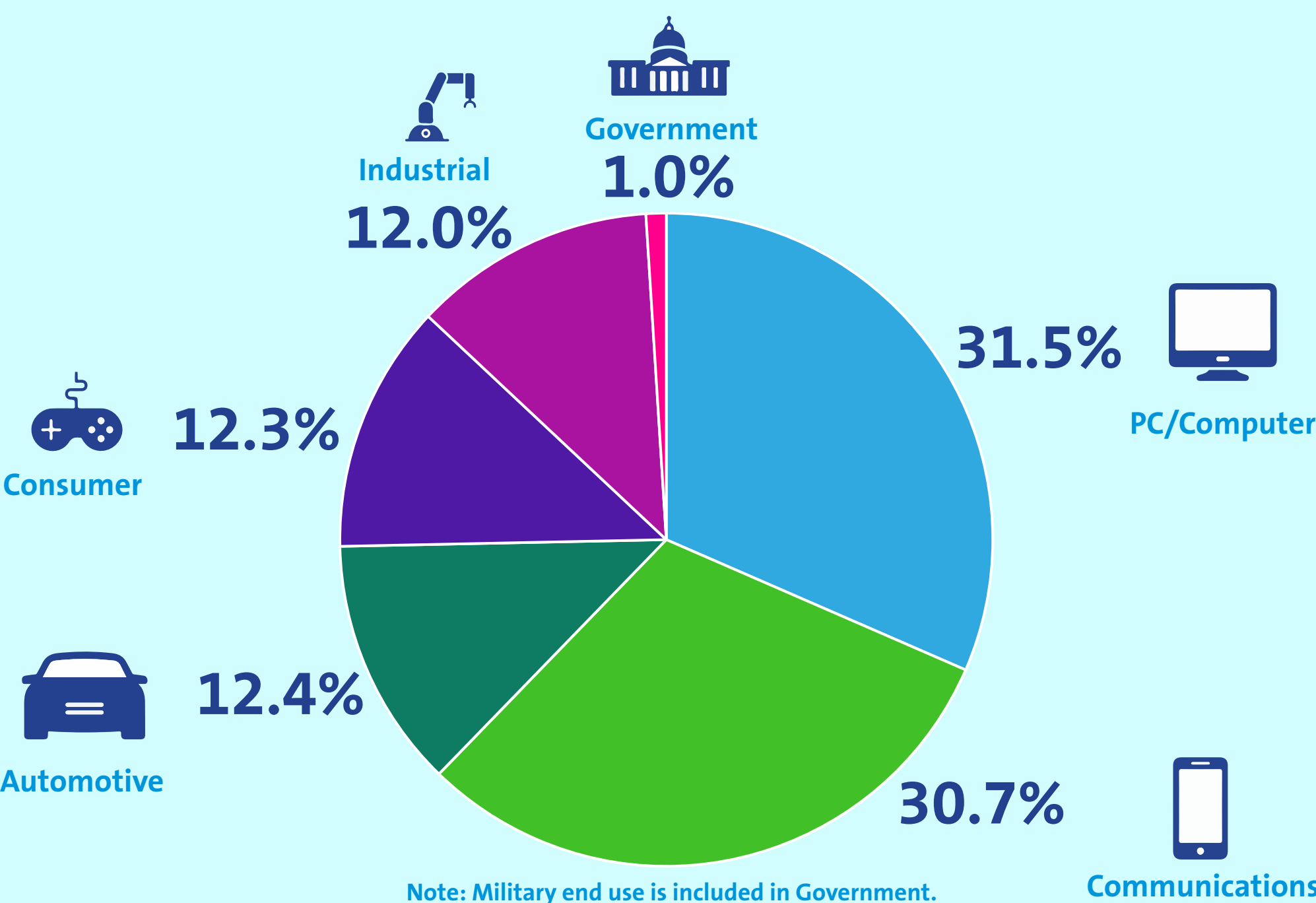## Global semiconductor sales are driven by products ultimately purchased by consumers

The chip shortage is expected to last into **2023**

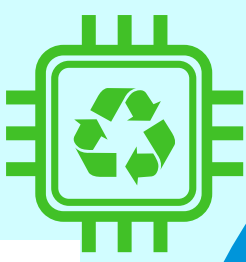The semiconductor market worldwide is growing steadily, the market in 2021 has reached **$552.96** BILLION

In 2022, sales could grow another **10 PERCENT** to over **$600** BILLION

Government 1.0%

Industrial 12.0%

Consumer 12.3%

Automotive 12.4%

PC/Computer 31.5%

Communications 30.7%

Note: Military end use is included in Government.
Sources: World Semiconductor Trade Statistics (WSTS).

Increased demand for semiconductor chips will only raise carbon emissions

WASTE

By 2030, estimated **74** MILLION TONS of e-waste is generated every year. Out of all discarded electronics, only about **20%** is recycled. The use of electrical and electronic equipment generates an increasing volume of waste containing environmentally hazardous components. WEEE is also a valuable source of recyclable raw materials: ferrous metals, plastics and precious metals can be recovered and reused.

ENERGY
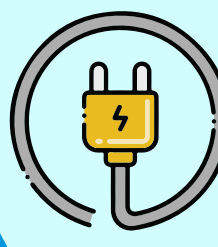
Buildings account for **55%** of global electricity demand.

Semiconductors manufacturers can help improve the operational efficiency of buildings by using real-time data that lowers total energy consumption, by adapting the HVAC (heating, ventilation and air conditioning) equipment's usage to human presence, activity, and preference settings.

WATER

The semiconductor industry spends approximately **2** BILLION on water and wastewater treatment systems every year.

Manufacturing an integrated circuit on a **300** MM wafer requires approximately **8,328** LITRES water in total, of **5,678** LITRES is ultrapure water

2017 reported data, the wafer fabrication plants' RECYCLING RATES range from **20%-69%**, with an INDUSTRY AVERAGE of **42%**

As for the semiconductor plants, the RECYCLING RATES range from **0%-50%**, with an INDUSTRY AVERAGE of **15%**