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WHAT ACTIVITIES CONSUME THE MOST ENERGY FOR YOU?

ENERGY-CONSUMPTIVE ACTIVITIES

THE INDUSTRIAL SECTOR

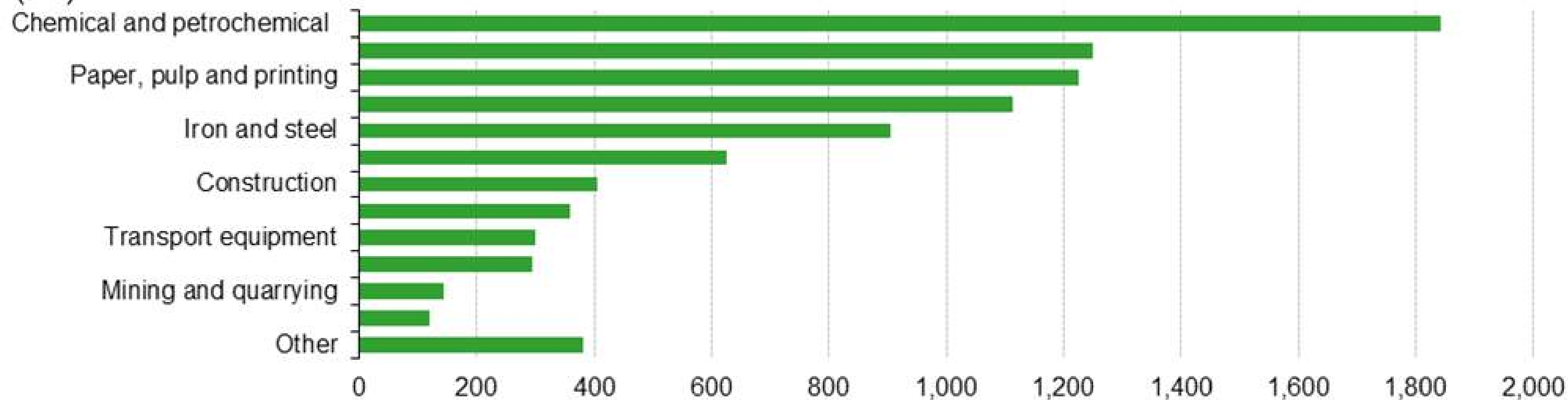
THE INDUSTRIAL SECTOR REMAINS THE SECTOR WHERE THE MOST IS CONSUMED IN ABSOLUTE TERMS. ALWAYS ACCORDING TO THE GLOBAL ENERGY OUTLOOK 2025, DEMAND HAS GROWN IN CHINA AND INDIA FROM METALLURGICAL INDUSTRIES (IRON, STEEL,). AS MENTIONED BEFORE, INDUSTRIES THAT PRODUCE SYNTHETIC FABRICS AND ALL PACKAGING ALSO PUSH FOR INCREASED OIL CONSUMPTION. IN THE EU, EUROSTAT REPORTS THE MOST ENERGY CONSUMPTIVE INDUSTRIES IN THE SECONDARY SECTOR.

MIND YOU: THE DATA EUROSTAT PROVIDES ARE BASED ON 2023 DATA (THE NEWEST WE COULD FIND)

ENERGY-CONSUMPTIVE ACTIVITIES

Total final energy consumption by industrial sector, EU, 2023

(PJ)



Source: Eurostat (nrg_bal_s)

eurostat

ENERGY-CONSUMPTIVE ACTIVITIES

THE FOOD INDUSTRY

THE FOOD SECTOR REPRESENTS ONE OF THE LARGEST ENERGY CONSUMERS WORLDWIDE, ACCOUNTING FOR APPROXIMATELY 30% OF THE TOTAL ENERGY CONSUMPTION. FOOD PROCESSING EQUIPMENT AND MACHINERY REQUIRE ELECTRICITY TO RUN, AS WELL AS INTENSIVE PROCEDURES SUCH AS BAKING, FRYING, CANNING, BOTTLING, REFRIGERATING, STERILIZATION AND ALIKE. (CORIGLIANO AND ALGIERI, 2024). HUGE IMPACTS COME FROM CATTLE FARMS AS WELL..

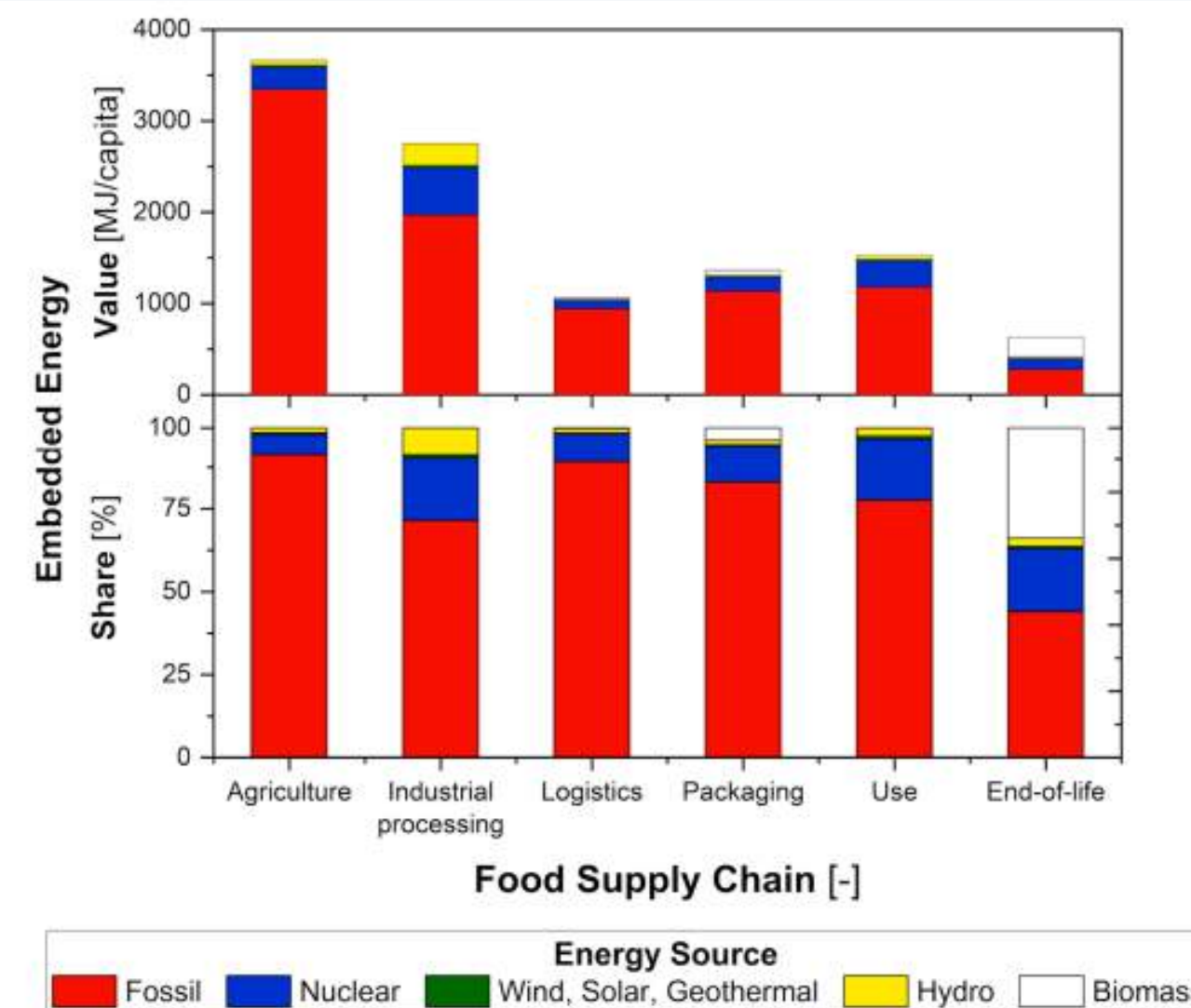
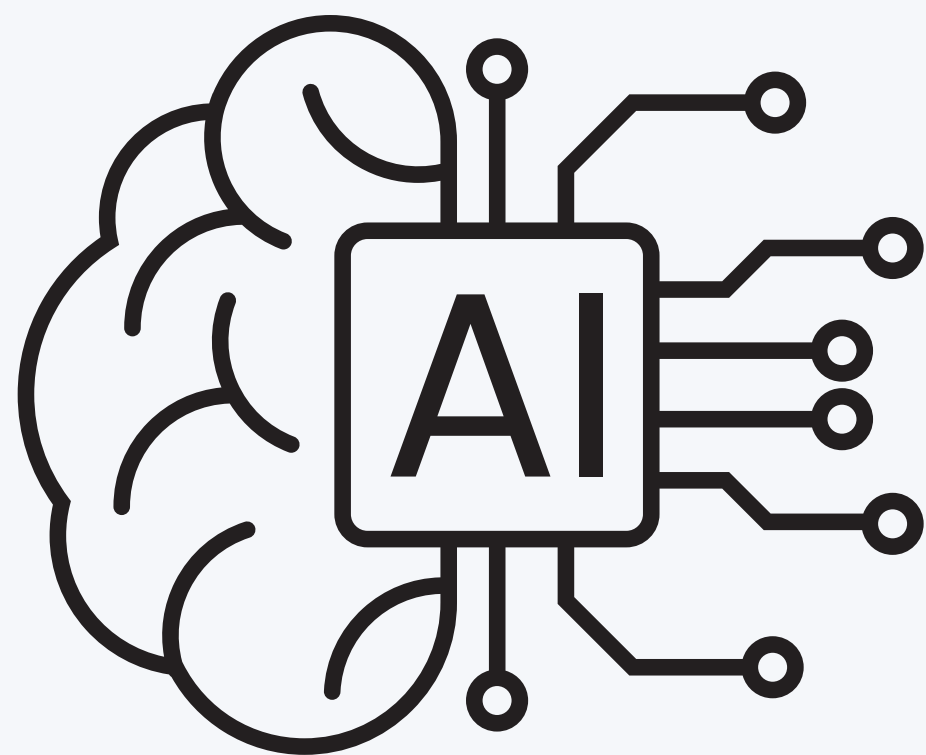


Fig. 7. Energy employment in various food sectors categorized per source. European Union.

ENERGY-CONSUMPTIVE ACTIVITIES

AI AND DATA CENTERS



IN ADDITION TO REQUIRING A LARGE AMOUNT OF INVESTMENTS (AT LEAST 736 BILLION PROJECTED ACCORDING TO GOLDMAN SACHS), THE DEMAND FOR ENERGY FROM THIS SECTOR IS ENORMOUS.

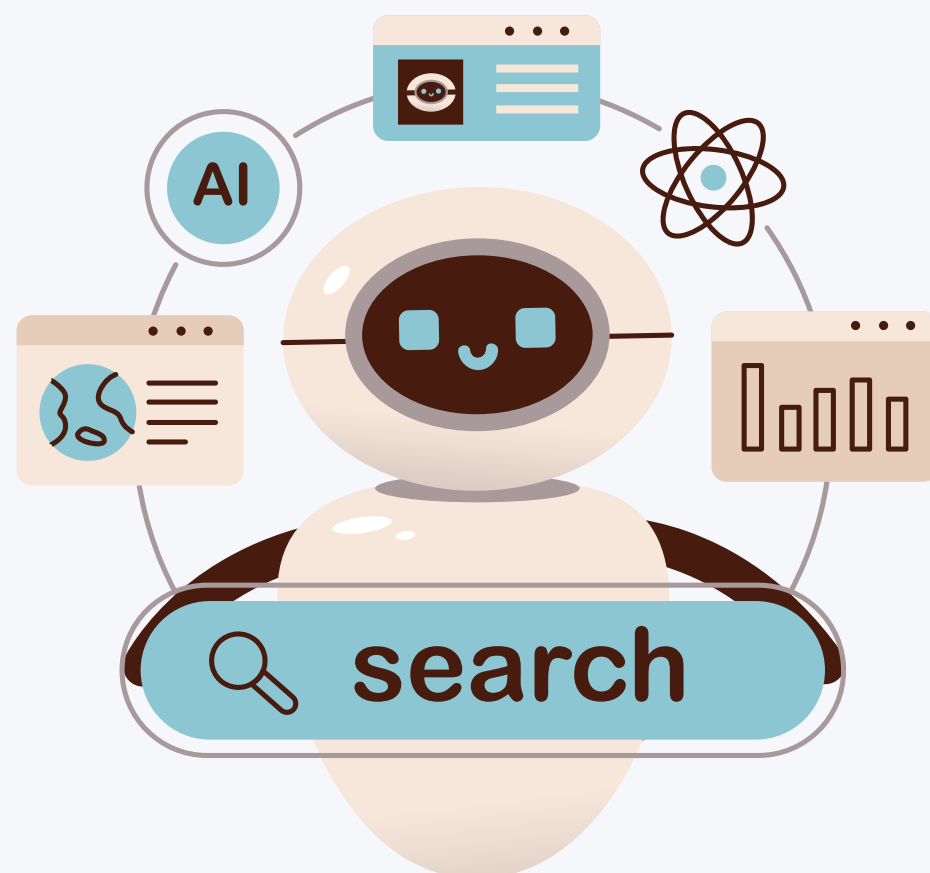
“AT PRESENT, GOLDMAN SACHS RESEARCH ESTIMATES THE POWER USAGE BY THE GLOBAL DATA CENTER MARKET TO BE AROUND 55 GIGAWATTS (GW). THIS IS COMPRISED OF CLOUD COMPUTING WORKLOADS (54%), TRADITIONAL WORKLOADS FOR TYPICAL BUSINESS FUNCTIONS SUCH AS EMAIL OR STORAGE (32%), AND AI (14%).

(...) OUR ANALYSTS PROJECT POWER DEMAND WILL REACH 84 GW BY 2027, WITH AI GROWING TO 27% OF THE OVERALL MARKET, CLOUD DROPPING TO 50%, AND TRADITIONAL WORKLOADS FALLING TO 23%.

THIS BASELINE SCENARIO COULD, HOWEVER, BE AFFECTED BY A DECELERATION IN USAGE BY AI — FOR EXAMPLE, IF THE TRANSITION TO AI-DRIVEN WORK AND AI MONETIZATION DOESN'T DEVELOP AS QUICKLY AS ANTICIPATED. IN SUCH MUTED SCENARIOS, DEMAND COULD DIVERGE FROM THE BASELINE ESTIMATE BY 9-13 GW.”

ENERGY-CONSUMPTIVE ACTIVITIES

AI AND DATA CENTERS



GENERATIVE AI ON THE OTHER HAND, ACCORDING TO MIT - PROJECTS GROWTH OF 1050 TERA WATTS PER HOUR. TO EXEMPLIFY, MIT CITES THE PARAMETERS USED TO BUILD OPENAI'S GPT-3, WHICH ARE NOT VERY SAFE BY DISCRETION, FROM THE UNIVERSITY OF BERKLEY, THEY WOULD COUNT AT 1287 MEGAWATTS PER HOUR OF ELECTRICITY .

TO BE CLEAR: A **LIGHT BULB** CONSUMES A 50 WATT PER HOUR. ONE MEGAWATT CORRESPONDS TO ONE MILLION WATTS. ONE TERA WATT CORRESPONDS TO ONE TRILLION. A LOT OF ENERGY

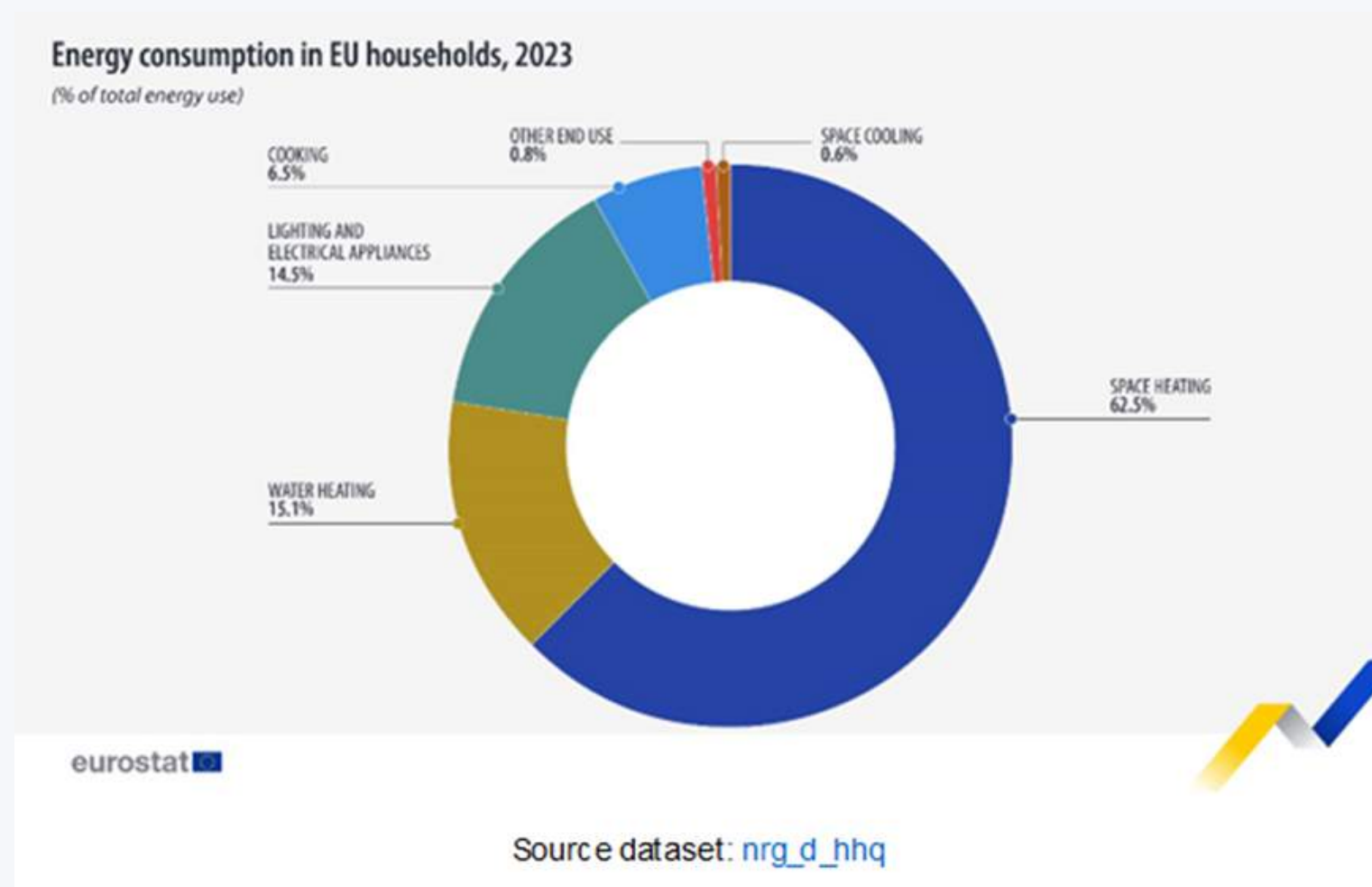
ENERGY-CONSUMPTIVE ACTIVITIES

HOUSEHOLDS' CONSUMPTION

EUROSTAT DATA

DATA SHOWS THAT THE DOMESTIC SECTOR(HOUSEHOLDS) CONSUME ENERGY IN RELATION TO THE FOLLWOING ACTIVITIES:

- HEATING OF INTERIOR SPACES
- WATER HEATING
- HOUSEHOLD APPLIANCES AND LIGHTING
- COOKING
- COOLING OF INTERIOR SPACES
- OTHER USES



ENERGY-CONSUMPTIVE ACTIVITIES

HOUSEHOLDS' CONSUMPTION

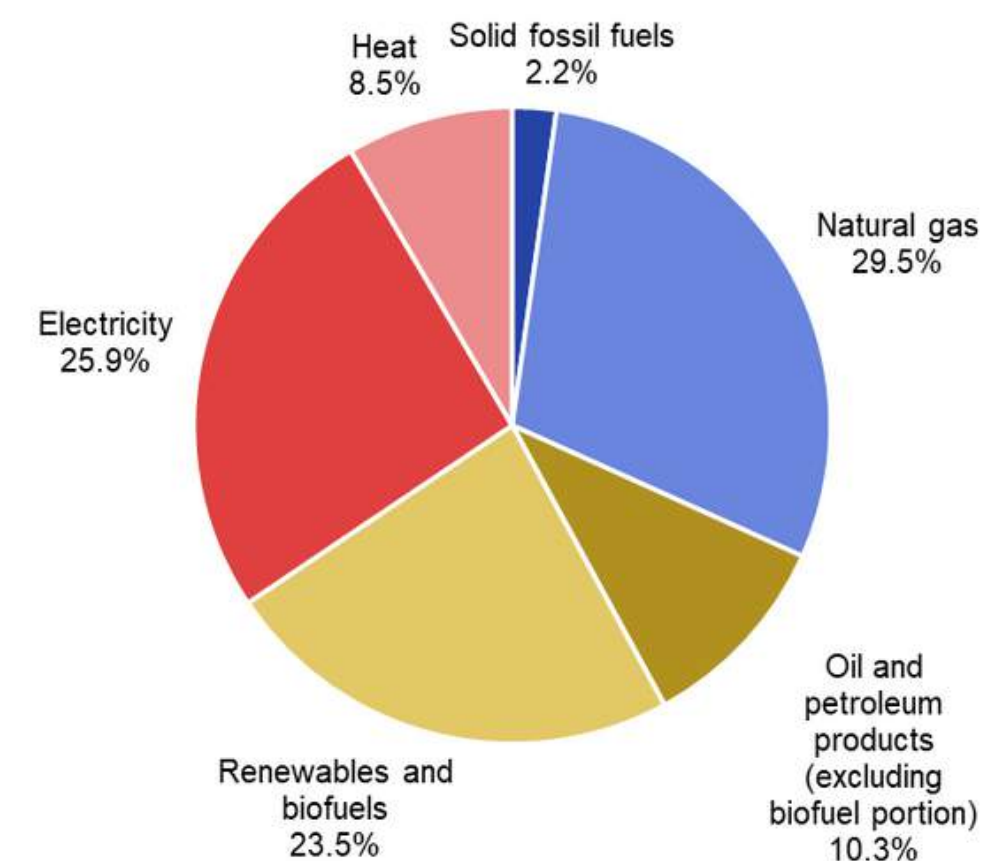
EUROSTAT DATA

WHICH SOURCES WERE USED THE MOST ACCORDING TO EUROSTAT?

- NATURAL GAS (29.5%)
- ELECTRICITY (25.9%)
- **RENEWABLES (23.5%)**
- PETROLEUM AND PETROLEUM-BASED PRODUCTS (10.3%)

Final energy consumption in the residential sector by fuel, 2023

(%)



Source: Eurostat (online data code: nrg_bal_c)

eurostat