# HMS Statement on Energy Policy

## Why coal will continue to be an indispensable energy source in the future

In these times of “sustainability” and “ESG”, coal, in particular, is more vigorously debated than ever. For some, it is the “black sheep” among energy sources; for others, it remains a practical and essential means of ensuring reliable power generation and industrial applications.

What is certain is that coal will continue to play a vital role in global energy supply for decades to come. Despite the expansion of wind and solar energy, coal remains a key pillar of energy security, particularly, but not only, in emerging economies, which are catching up. Genuine progress in global environmental sustainability can only be achieved if the international community not only expands “alternative” energy sources like wind and solar but also embraces advanced thermal technologies for the use of coal and gas.

Coal offers four key advantages over other energy sources:

1. Typically lower costs (particularly for upfront investments and transportation or processing)
2. Minimal geopolitical risk, since coal reserves are more evenly distributed worldwide, and both production and transport are difficult to control (due to their simplicity)
3. Easy transportation (no need for pipelines, LNG terminals, or regasification facilities)
4. Strong energy security, as coal is easy and low risk to store (no dependence on pipelines, no storage tanks required, and no explosion hazard)

Coal’s most important uses include the following:

1. Power generation (around 35% of global electricity is generated from coal)
2. Industrial heat (for the production of glass, cement, and other products)
3. Steel production (2/3rds of the 2 billion tonnes of steel produced globally each year rely on coal
4. Extraction of other raw materials through chemical reduction and related processes, such as silicon for computers and solar cells, as well as chromium, nickel, aluminium, and more (e.g., use of fly ash in cement production)
5. Residential heating
6. Source of critical minerals and fertilizers through humates

While many in Germany and across Europe may believe that coal is no longer needed, a broader global perspective quickly reveals this to be a misconception. Coal remains the most vital component of the global electricity supply and demand continues to grow. Although industrialised nations have rapidly expanded wind and solar energy under conditions of stagnant energy demand, many developing and emerging countries often still face the challenge of meeting fundamental energy needs.

Access to stable and continuous energy sources is often a challenge, which is why coal, as well as gas and nuclear power, are essential resources for providing continuous energy on an industrial scale. Globally, coal is the most cost-effective and most easily accessible energy source, allowing countries to develop their economies and improve living standards.

In a widely noted publication from May 2024, the ASEAN Centre for Energy made it very clear that coal is and will remain indispensable as an energy source for the Asian economic region. A hasty coal phase-out would severely impact the economy and the population. This is because not only countries like China and India have an enormous hunger for energy that cannot be met by wind and solar alone. India alone, for example, plans to consume more than twice as much coal in 2025 as the US and EU combined.

Coal, as one of the most widely used energy sources in the world, is considered particularly reliable and secure. Estimates suggest that global coal reserves could last up to 500 years, or even significantly longer, making coal a dependable long-term energy source. Particularly emerging and developing countries in Asia that are aiming to establish an independent energy supply can often only meet their energy needs reliably and affordably through coal. The expansion of industry and infrastructure requires a stable energy supply. As a low-cost energy source, coal plays a key role in ensuring affordability, supporting economic development, and maintaining competitiveness.

Coal can be mined cost-efficiently and is available at low prices on the global market. Where considered appropriate, $CO_2$ capture technology is already in place. This makes coal attractive to many countries, particularly those with limited financial resources. As a result, coal is a critical factor in many countries, contributing not only to energy supply but also to economic stability. Global coal demand reached a new high in 2024. According to the International Energy Agency (IEA), nearly 9 billion tonnes of coal were consumed worldwide. IEA experts also expect that coal demand will remain high in the years ahead.

Unlike solar and wind power, which are intermittent and weather-dependent, coal enables continuous on-site electricity generation. Power plants and industrial facilities can store the necessary coal and use it reliably—even in times of crises when the use of pipelines and power grids is not guaranteed. In the years ahead, global electricity demand cannot be met by wind and solar alone, especially in countries experiencing above-average growth. Most countries also lack the conditions to fully cover their electricity needs with wind, solar, nuclear, and hydropower. Coal and gas must therefore help bridge this gap. Coal utilisation technology has steadily advanced in recent years. Low-emission technologies have significantly helped reduce the environmental impact of coal usage. Over the past 150 years, the plentiful electricity from coal and gas has contributed to an unprecedented reduction in poverty and a rise in life expectancy and health. This will continue to apply to the Asian region and other emerging economies in the coming decades.

Meanwhile, there is agreement that coal and gas are roughly equal in terms of climate impact when viewed through the IPCC's 20-year "global warming potential," which includes methane, and taking into account that more than half of the emitted $CO_2$ is absorbed by the biosphere and oceans (peer-reviewed sources are available. In many cases involving liquefied natural gas (LNG), coal would have the "climate advantage". Unfortunately, this is rarely acknowledged by European governments, which – like Germany – rely on imported LNG instead of domestic coal.

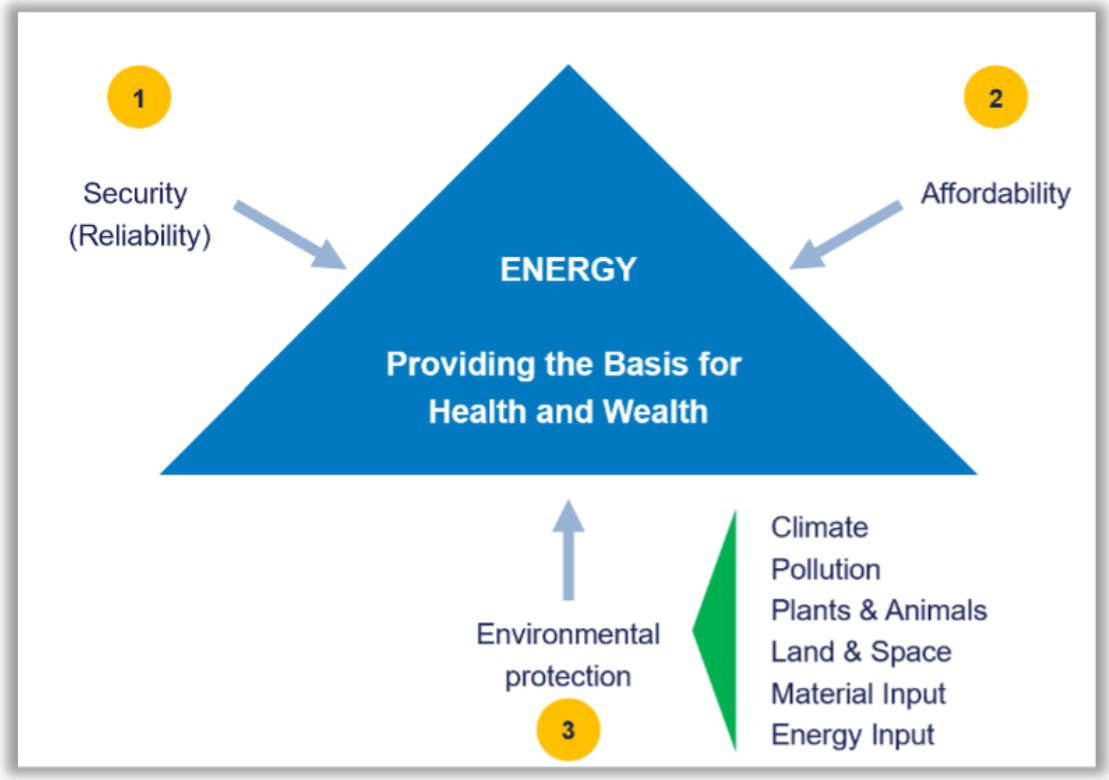
## HMS‘s position on energy policy

Today, there is no longer any doubt as to the fact that the “energy transition” has not even begun in absolute terms from a macroeconomic perspective. While economically stagnating or shrinking countries like Germany are able to reduce their coal, gas and possibly even oil consumption, it remains an uncomfortable truth that the world as a whole is still far from even beginning such a “transition”. Instead, the consumption of conventional energy sources reaches new record highs year after year, except during global recessions. Globally, oil, coal and gas have accounted for decades for an almost unchanged 80% of total energy supply (primary energy). In Germany, more than 20 years after the start of the “energy transition,” oil, coal and gas still account for around 70% of the total energy supply (please double check and provide link for 70%).

HMS’s executive bodies, in coordination with the Supervisory Board and principal shareholders, have agreed on the following statement concerning long-term energy policy:

1. Energy policy means (a) first guaranteeing 100 percent availability, (b) only then can affordability be ensured, (c) once energy is secure and affordable, it can be optimised to reduce the environmental impact. There is no form of energy without a negative environmental impact; and if there were, it would be useless if it were not secure and affordable.

2. HMS supports an energy policy that focuses on reducing environmental impact through the latest technologies, with attention to economic efficiency. Environmental protection is achieved primarily through investments in efficiency improvement and the latest production, transport, and filtration systems.



3. The unchecked expansion of weather-dependent wind and solar installations is not effective – for the environment nor for the economy – for the following three key reasons:
    a. **Low energy density:**Technology is not capable of increasing the low power output per square meter from the so-called abundant wind and solar resources.
    b. **Short operating lifespan:** Wind and solar power plants must be replaced at least twice, and often three or four times as often as conventional thermal power plants.
    c. **Intermittency:** In Germany, a solar plant operates 10% of the year; the rest of the time it sits unused. We do not know when that 10% usage will occur, only that it will not occur at night.

4. Solar and wind in the overall system (at the national level, starting from a relatively low level of penetration) are always the most expensive way to provide electricity – more expensive than nuclear power. They become more expensive the higher their share of installed capacity. Using these sources requires the following:
    a. **Extensive overbuilding** to overcome the low natural utilisation rate, which leads to low capacity usage, and to manage the challenges of intermittency and unpredictability, and to charge any storage systems.
    b. **Short-term energy storage** in the form of batteries to overcome short-term fluctuations and balance the grid.
    c. Long-term energy storage in the form of hydrogen to bridge days and weeks with insufficient combined wind and solar power generation.
    d. **Backup power plants** kept on standby as needed; in Germany, 12–20 GW of gas will be required by 2030; in the future, this reserve is to be operated using hydrogen.
    e. A significantly **more complex and larger transmission network** and integration infrastructure.

5. What are the consequences of an uncontrolled expansion of wind and solar?
    a. **Environmental consequences**: It is obvious that the short lifespan and large-scale installations of wind, solar, and auxiliary systems must not only be replaced but also disposed of every few years. Moreover, the low energy density and the resulting extensive land use have direct impacts on flora, fauna – such as whales, birds, and insects—and on the local climate, including humidity and temperature. Try a small experiment: go outside and feel the temperature and measure the humidity directly under and directly above a solar panel in sunshine.
    b. **Economic costs**: We now also know that the large-scale overbuilding and auxiliary systems (storage, backup, grids) that are required to make wind and solar energy usable come with high economic costs – something well known in Germany.

6. To address these challenges, we recommend the following:
   a. **Investment in research and development:** By providing funding for innovative research and development, we can work toward an energy future that is both economically viable and environmentally sustainable. A "new energy revolution" will enable us to reduce the use of fossil fuels without the compromises currently required by wind and solar solutions.
   b. **Improving existing energy systems:** Until the "new energy revolution" becomes reality, investments in our current energy infrastructure and in thermal power plants must contribute to meeting both current and future energy needs. By increasing the efficiency of these systems, we can reduce their environmental footprint while ensuring reliable energy supply. We explicitly support nuclear power, but it will not be sufficient.