Key Messages of the 2025 Energy Talks at the Reichstag

- Expectation at the beginning of the year and in the course of the Bundestag election on 23 February 2025:

  – The federal government must act more pragmatically, reliably and with greater involvement of municipalities in climate policy. It is ikey that the hydrogen ramp-up will be advanced in a multi-coloured way and that social acceptance and competitiveness be strengthened through lower prices;

  – Maintaining ambitious climate targets while prioritizing security of supply, affordability and technology openness;

  – CCUS is essential for the success of the energy transition.

- The energy transition cannot be achieved without molecules, but renewable energies and green hydrogen remain at the heart of the energy transition, and they are also in the national strategic security interest. Companies in the automotive industry want electric mobility and renewable fuels as two options combined.

- “Rethinking energy” means that the European CO_2 emissions trading system (EU ETS) is the key instrument for achieving climate neutrality. However, it remains controversial whether the current level of ambition can be maintained and whether energy-intensive industries can or should remain in Germany.

- The energy transition runs the risk to fail if the protection of soils and tropical rainforests is not made a top issue in the fight against climate change. Climate neutrality can only be achieved in a balance between nature and the requirements of a zero carbon energy supply.

- Artificial intelligence could make all assumptions about future energy demand obsolete and give the energy transition a completely new direction.

- Energy, and gas in particular, are the cornerstones of maintaining close European-American relations in times of global turbulence. American LNG is crucial for balancing the trade balance between the US and Europe. While the EU sees LNG deliveries as a temporary solution, the expectation in the US is that Europe will be the main buyer of American liquefied natural gas for the next decades.

- Nuclear fusion is on the cusp of becoming another clean technology in the future energy mix. If it is really wanted, the first fusion reactors can go into operation in the mid-2030s. The potential is great, especially in Germany.

- Energy storage systems will be a central topic of the energy transition debate next year, they are the key to its success. This consensus has only recently been formed on all sides, and this is a good basis for finding viable solutions before the end of this Bundestag election term.

2025 Key Messages in Detail

Expectations at the beginning of the year

- We don't need an abstract discussion about climate targets now, but concrete measures quickly.
- The debate is about competitiveness, resilience, better legislation and ensuring social acceptance of the energy transition.
- The expansion of renewable energies must be synchronized with grid expansion. Otherwise, the "wild growth" of PV systems will become a problem.
- The new electricity market design with at least 15 GW of new, climate-friendly gas-fired power plants (hydrogen-ready or with CCUS) must be adopted swiftly.
- The present draft for a new CCUS law must be passed immediately, only supplemented by the provision that CCUS projects are determined to be of "overriding public interest".
- The hydrogen ramp-up has been unsatisfactory so far. This urgently needs to be improved – for example through more openness for blue or turquoise hydrogen, a hydrogen storage strategy and the rapid submission of a pragmatic EU Delegated Act on "low carbon hydrogen".
- The energy transition needs green molecules, and a green gas quota could pave the way for more biomethane or synthetic methane (e-ng).

CCUS as a key technology for achieving climate neutrality

- Without CCUS, the energy and climate transition will fail. Roughly a fifth of German CO_2 emissions can be prevented from entering the atmosphere by CCUS. CCUS is the third pillar of a climate-neutral economy alongside renewable energies and hydrogen.
- There is great potential in CCUS offshore projects. Clarity must be provided on how CCUS projects are treated "onshore", as one-off solutions in individual regions or as part of a CCUS infrastructure. From the point of view of the industry concerned, CCUS must cover the entire value chain with the appropriate infrastructure, in which production takes place with unavoidable CO_2 emissions.
- The cross-border transport of CO_2 is also crucial. To this end, the London Protocol on CO_2 exports must be finally ratified and the European CO_2 emissions trading system (EU ETS 2) must be opened up to CCUS projects outside the EU's borders.

Future of renewable energies and hydrogen

- The energy transition is no longer a German peculiarity, but part of a global, competitive development. In 2024 alone, 700 GW of new wind and solar plants were installed.

- Germany is basically very well positioned, but will only be able to maintain this position if the right course is pursued now and, above all, if it is understood that industrial strength in the areas of renewables, electrolysis and hydrogen must be protected not only for economic reasons, but also in the interest of national security. Developments such as those in the solar industry and now perhaps in the automotive industry, in which market positions have been irretrievably lost to China or are at risk to be lost, must not be repeated.

- Wind power manufacturers and electrolysis companies from Germany also have a strong position globally, which must be maintained at all means.

- Politically, it is crucial that the right regulatory decisions are taken now. This applies, for example, to the new GHG quota to be discussed in parliament, including a sub-quota of 3 % for fuels based on green hydrogen. CfD (Carbon Contracts for Difference) are also absolutely necessary to ensure long-term off-take security. There is no other way to compensate for the remaining cost disadvantages compared to conventional "grey" hydrogen.

- The topic of green gas quotas was also discussed: gas should be gradually decarbonised with synthetic or biomethane.

- The hydrogen ramp-up must be pragmatic and include blue and turquoise in addition to green hydrogen. Green hydrogen remains the ultimate goal.

The debate on the internal combustion engine (ICE) – between electric mobility and climate neutral fuels

- The EU target, according to which only zero carbon emissions free cars may be registered from 2035 onwards cannot be met. The market ramp-up of electric vehicles is not so fast and harmonious that the planned drive changeover can succeed as planned.

- For this reason, the proposal to be announced by the EU Commission early December to amend the CO_2 fleet limits should provide for an opening in favour of hybrid technologies (plug-in, range extenders) and renewable fuels. In addition, the decarbonisation of the existing passenger car fleet should be given greater regulatory consideration.

- Synthetic fuels are a good complement to electric mobility, but will not be available to the extent by 2035 to compensate for the deficits in the ramp-up of electric mobility. This is why biofuels with a significantly reduced CO_2 footprint are of particular importance. This is especially true for heavy-duty transport where cost efficiency is of paramount importance and in which BioLNG and BioCNG are becoming increasingly important. There is also a lot of potential in HVO.

- In any event, the importance of hydrogen for the fuel mix of the future should not be neglected. Green hydrogen is the core component for synthetic fuels.

- The weighing of all these aspects – electric ramp-up slower than planned, investments in synthetic fuels still unsatisfactory, biofuel potential limited, existing fleet remains larger than expected – leads to an insight into an inconvenient truth: the complete decarbonisation of road mobility remains imperative, but cannot be achieved as quickly as planned. Therefore, instead of muddling through compromises on the EU target for 2035, a postponement of five years while at the same time opening up to all climate-neutral propulsion technologies could be the best realistic solution.

Rethinking energy

- The EU ETS, which has been tightened by the Green Deal, means that no new CO_2 certificates will be available as from 2039 onwards. As a result, new investments in fossil fuel structures have come to a standstill. This applies above all to energy-intensive companies.

- For existing plants with CO_2 emissions, the discontinuation of the free allocation of certificates leads to cost increases that can no longer be coped with in international competition. The gap between higher electricity prices in the EU and lower levels in the US and elsewhere has widened. Increased CO_2 costs have thus become unacceptable.

- Should Germany therefore prepare for certain parts of the energy-intensive value chain to migrate to other regions outside or in Europe, or should it react with moderate mitigation of targets without watering down the goal of climate neutrality?

- In any event, the social acceptance of the energy transition is decisive. Without them, climate neutrality is unachievable.

The climate protection importance of soils and tropical rainforests must no longer be neglected

- In the climate debate, the protection of soils and tropical rainforests has so far been given too little attention against better knowledge, almost negligently. This must change immediately, for example by finding personalities who focus on this topic and are associated with it.

- The next climate conference COP30 in Belem, Brazil, must be turned into a tropical forest conference, among other things, which should provide decisive impetus for the protection of the rainforests, especially in the Congo Basin.

- There should be a “fair deal” between the international community and the tropical forest countries to ensure adequate remuneration for the ecological services of these countries. In addition, there should be more flexibility in climate protection projects in third countries (Art. 6 Paris Agreement).

- Nationally, it is good that a natural area requirements law was agreed in the coalition agreement. Unfortunately, it was not possible to agree on a soil protection law.

- It must become common knowledge that in terms of CO_2 relevance, soils have at least the same weight as traffic and buildings. Soils store five times as much carbon as above-ground biomass. The humus is decreasing, everything must be done to ensure that its CO_2 storage function is fully restored again.

- When calculating the GHG balance, it was assumed that the forests in this country were CO_2 sinks. This is no longer the case.

- The protection of soils and tropical rainforests also requires that it be turned into a business case that encourages investors to get involved.

Artificial intelligence will significantly increase the demand for electricity

- The digital economy and artificial intelligence in particular are increasing energy demand beyond all expectations. A ChatGPT query requires ten times more energy than a traditional Google search. The global cloud already consumes more energy than Germany. By 2030, the digital economy will already account for 5 % of the EU's energy consumption.

- The large IT companies have reacted to this development, recently supported by the American government. Google, Microsoft and Amazon want to invest 200 billion US $ in AI, the Trump administration wants to provide 500 billion US $ in favor of AI. Microsoft and Google have announced that they want to cover their additional energy needs with new or recommissioned nuclear power plants. Nevertheless, Google and Microsoft do not consider their climate targets for 2030 to be achievable due to the rapid development of AI and the additional energy demand associated with it.

- If Europe wants to significantly increase its share of global digital value added from the current 10 %, it must ensure a corresponding increase in energy production. Otherwise, American dominance in the digital economy, which currently stands at 90 %, will remain. Overall, the digital hunger for energy is so great that all companies in the digital economy are becoming energy-intensive.

- One option to meet this additional energy demand in a climate neutral way could be Small Modular Reactors (SMR). This is not about the miniature versions of conventional nuclear power plants, also known as SMRs, but about new technologies that are inherently safe, so that such SMRs automatically shut down in the event of an accident. What kind of design of such innovative SMRs will prevail is still open. There are currently about 80 different concepts.

- Another option is transmutation, which is aimed at significantly faster nuclear waste disposal and generates process-related heat that can be used for energy. With transmutation, the period of nuclear waste disposal can be reduced from several 10,000 years to 500–800 years and at the same time be significantly reduced in scope.

LNG as the key to stable energy and general transatlantic relations

- In general, the ideas about future energy cooperation on both sides of the Atlantic are still far apart.
- Protectionism leads to destructiveness. Both the US and Europe need each other, regardless of short-term trade conflicts.
- The transformation of the global energy system and the challenge of climate change offer enormous business opportunities for the industry.
- The new special fund adopted by Germany is a historic decision to facilitate this transition, accompanied by regulatory support for green, blue and pink hydrogen, as well as a green methane quota.
- In addition to energy critical minerals and system components, there are other areas of European-American cooperation.
- Europe must show strength and determination.

Game changer for energy and climate: Will fusion soon become a business model?

- Nuclear fusion is currently one of the top topics in the global energy industry. The US, China and Germany have a leading role in this area. The US is primarily an investment location (80 % of global investments and companies are American), China also very strong with a recent massive increase in government support, and Germany as the leading location in fusion technology. Nuclear fusion is once again a cutting-edge technology from Germany. It should also be applied here instead of migrating abroad like other technologies.
- The physics of nuclear fusion have been understood, now it's a matter of technical and commercial feasibility. It would take five years for a demonstration plant and another five years for a fusion reactor to be ready for the market, if the necessary political, social, financial and administrative resources are available. The output of a plant would be at least 300 MW. For a fusion reactor with a capacity of 700–1,000 MW, costs of 5–6 billion US $ must be estimated. Fusion plants can be easily integrated into the power grid like coal or gas power plants.
- The narrative is crucial to gain political and social support. Unlike conventional nuclear power plants, there is no risk of a worst-case scenario and fusion reactors have no harmful effects on the environment. Like renewable energies, they are another clean form of electricity generation.

Energy storage – the (often) underestimated pillar of the energy transition

- Renewable energies, which now account for almost 60 % of the German electricity mix, and the provision of secure energy supply form two pillars of energy supply, of which storage systems were neglected until recently.

- Natural gas storage facilities are available on a large scale and must be able to be operated economically. There is considerable potential in hydrogen storage, which is technically good but economically difficult to develop.

- There has been a battery boom in electricity storage in recent years, the extent of which surprises everyone. The corresponding grid connection applications have a volume estimated at around 500 GW, if not more. This compares to a grid load of 75 GW.

- The decisive factor is flexibility in order to fit storage systems, back-up power plants and demand side management into the system in a way that serves the grid. Energy carrier coupling from electricity and natural gas can make a significant contribution to this; The prerequisite for this is an equal treatment with battery storage systems in terms of construction cost subsidies and grid charges.

- The solution to these tasks must be found against the background of a structural economic crisis. Regulations should be as market oriented as possible in order to enable companies to find individual solutions. It is questionable whether we really have until 2027 to develop a power plant strategy. In any case, the total sum of new gas-fired power plants will determine the volume of new storage capacities.