

Ten steps towards an economic, ecological and socially acceptable transition of energy policy and consumption

Priority Recommendations

1. There is no energy source that has either only positive or only negative effects on the three pillars of sustainability. Negative economies of scale might however be disproportional. It is thus necessary to consider a mix, which ideally consists of many energy options, the use of which should be determined by their relevant degree of sustainability. It is vital to be able to opt for other solutions if required (learning organisations). Thus, if applicable, several options should be created in parallel.
2. Within the framework of the three major principles, investments in increased efficiency lead to very few conflicting objectives. Especially in the field of heat recovery, the highest efficiency gains can currently be achieved by relatively small efforts. All other measures have their merits and flaws, political consideration and evaluation is thus necessary. Moreover, it is important to note that drawbacks of options in energy policy have to be documented and made public in a fair and honest manner.
3. Greenhouse gas emissions should be adjusted to the internationally agreed 2°C goal as cap for tolerable global warming. For Germany, this goal implies a reduction of CO₂ emissions by at least 80% until 2050, based on the figures taken in 1990.
4. There is a general trend towards electromobility due to concerns about climate protection but also a shortage of fossil fuels. It is possible that by 2050, the majority of private cars might be fuelled by electricity. In the meantime, electromobility requires continuous research, especially when it comes to minimising the vehicles' primary energy demand to reduce emissions and to improve the CO₂ balance. At the same time, the European electricity grid needs to be extended and enhanced towards a smart grid.
5. A basic offer (guaranteed availability) has to be ensured. Currently, this can only be achieved by fossil fuels, nuclear energy and hydropower. This implies that, given the current indications, an energy supply which exclusively relies on renewables is not feasible in the short run. However, in the long run, it is desirable to meet the energy demand by means of renewables.
6. In general, an extension of nuclear power plant operation is in line with the principles of sustainability. First, one could speak of economic waste of goods if nuclear power plants were phased out before their technical and economic life span. Second, on an ecological scale, using more fossil energy sources than necessary in order to make up for the shortages due to a lack of nuclear power would exacerbate the climate issues. Third, a rapid phase-out of nuclear power plants would be contradictory to the goal of social acceptability, if the reduction of capacity resulted in a limited supply and soaring electricity prices.