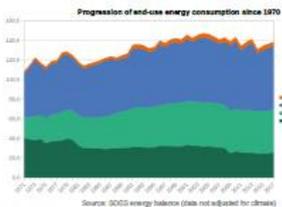


## ● 各国の長期戦略においては、図表や写真が数多く活用されている。

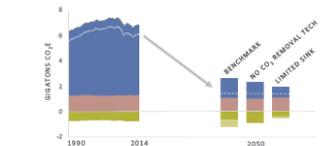


Although the major changes launched at the end of the 1970s and start of the 1980s have led as a result of the decreasing price of hydrocarbons, known as the 'oil counter shock', the desire to control energy consumption re-emerged at the end of the 1990s (General commissioner report of the Energy Council then published in 2000) and was followed by the climate policies repeated in the successive Climate Plans.

In terms of non-energy emissions, successive common agricultural policies from 1992 onwards led to changes in agricultural practices with the increase in financial rewards for the positive externalities of agriculture, particularly environmental concerns, which led to a drop in emissions for the sector.

- The results were:
  - Cutting energy waste Energy efficiency improvements enable the energy system to provide the services we need with fewer resources and emissions. Over the past several years, the United States has demonstrated that programs and standards to improve the energy efficiency of buildings, appliances and vehicles can cost-effectively cut both pollution and lower energy bills, while maintaining significant support from U.S. industry and consumers. Technological advancements will further expand the opportunities for cost-effective energy efficiency improvements. "Smart growth" strategies can also reduce the country's structural energy needs, for example, through improved urban design that supports alternative transit options. In the MCS Benchmark scenario, primary energy use declines by over 20 percent between 2000 and 2050.
  - Decarbonizing the electricity system By 2050, nearly all fossil fuel electricity production can be replaced by low carbon technologies, including renewables, nuclear, and fossil fuels or bioenergy combined with carbon capture, utilization and storage (CCU). Current electricity grids can handle near-term rapid expansion of variable energy sources like solar and wind, and with additional flexibility through, for example, demand response, electricity storage, and transmission improvements, variable renewables have the potential to provide the majority of our electricity by mid-century (IREA, 2016). Figure E2 shows the annual average additions in electricity generating capacity in the MCS Benchmark scenario. The corresponding electricity generation mix in 2050 includes significant contributions from renewables (65 percent), nuclear (17 percent), and fossil fuels with CCU (16 percent). While public policies will help to achieve this mix, meeting market trends toward lower cost clean electricity will also play a critical role.
  - Shifting to clean electricity as a low-carbon fuel In transportation, buildings, and industry, the vast majority of energy for production is currently provided by petroleum, while the industry and building sectors are powered by a mix of fuels including natural gas, coal, petroleum, and electricity. With a clean electricity system comes opportunities to reduce fossil fuel usage in these sectors; for example, electric vehicles displace petroleum use and electric heat pumps reduce the use of natural gas and oil for space and water heating in buildings. The electricity generating capacity additions displayed in Figure E2 are therefore needed not only to decarbonize the electricity sector but also to electrify the buildings, transportation, and industrial sectors. Other low-carbon fuels like hydrogen and carbon-beneficial forms

FIGURE E1: U.S. NET GHG EMISSIONS UNDER THREE MCS SCENARIOS



### TRANSITION TO A LOW-CARBON ENERGY SYSTEM

The energy system—including electricity, residential and commercial buildings industry and transportation—is responsible for about 80 percent of U.S. GHG emissions. The MCS envisions deep emission reductions through the following three levers:

- Cutting energy waste Energy efficiency improvements enable the energy system to provide the services we need with fewer resources and emissions. Over the past several years, the United States has demonstrated that programs and standards to improve the energy efficiency of buildings, appliances and vehicles can cost-effectively cut both pollution and lower energy bills, while maintaining significant support from U.S. industry and consumers. Technological advancements will further expand the opportunities for cost-effective energy efficiency improvements. "Smart growth" strategies can also reduce the country's structural energy needs, for example, through improved urban design that supports alternative transit options. In the MCS Benchmark scenario, primary energy use declines by over 20 percent between 2000 and 2050.
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Executive Summary

### CLIMATE ACTION PLAN 2024 / CURRENT INITIATIVES

#### 5.1 Climate action in the energy sector

##### Initial situation

Climate policy and energy policy are inextricably linked. Effective climate action is inseparable without a sustainable energy policy because the energy sector accounts for some 40 percent of Germany's greenhouse gas emissions as of 2019. The greenhouse gas intensity goal, which is embedded in the Paris Agreement, underlines the necessity of gradually phasing out the contribution of fossil fuels to produce energy. The energy supply must almost completely decarbonize by 2050 at the latest.

The Germanwende has triggered an essential change in the energy sector. With just a few years, renewable energy has ceased to be a niche technology and is now Germany's primary source of electricity. We intend to continue to drive forward this development. Renewable electricity will be the key energy source in Germany's future energy system. That means that it will also be used in the last and transport sector to operate last pumps and drive electric cars, for example.

The modernization of the energy sector resulting from the Germanwende is one of our country's major investment projects. For example, in 2014, investments worth some 18 billion euros were made in renewable energy facilities. Another eight billion euros were invested by grid operators in grid infrastructure.

Germany's Energiewende and the gradual restructuring of its energy supply towards more renewable energy and a higher level of energy efficiency has set the course for future development. Despite the annual "Climate Cycle" and "Climate Milestones" our economic development has advanced and innovations have been developed. Renewable energy accounted for 47 percent of electricity generated in 2023, largely coming from wind power (33 percent) and photovoltaic (14 percent). This makes renewable the most important source of electricity in Germany.

The energy sector's emissions include all emissions arising from the combustion of fossil fuels in power stations used to supply electricity and heat to the public. Therefore, emissions from the energy industry can be influenced by the electricity and heat demand of



### CLIMATE ACTION PLAN 2024 / CURRENT INITIATIVES

#### University of Cambridge - Centre for Sustainable Road Freight



#### Discouraging Low Carbon Alternatives to Car Journeys

- 15. We will continue to invest in our public transport network, and help people to cycle, walk or travel by bus or train.
- 16. The Cycling and Walking Investment Strategy (CWIS) 2024-30 which may be issued in early 2024 and ending in 2030-31. Under this new strategy approach, Local Cycling and Walking Infrastructure Plans clearly demonstrate impact at the local level and enable a long-term approach to developing local cycling and walking networks, ideally over a ten year period.
- 17. As announced in the 2024 Autumn Statement, the Government will provide £200 million for a national programme of support for installing and new low emission buses in England and Wales, including hundreds of new low emission buses and retrofitting of thousands of older buses.
- 18. The Government will seek more use of electric, hybrid electric and diesel hybrid and alternative fuel traction on the railway. We will continue to invest to enable electrification where it provides benefits to passengers. The industry is also developing train powered by alternative fuels for accelerating battery electric power.
- 19. More Efficient Vehicles and Driving Behaviour
- 20. As we leave the EU, we need the UK to continue to be a world leader in low carbon transport, and we will look for opportunities to strengthen further the carbon on vehicle CO2 emissions. We will pursue an approach which offers certainty to industry, and is at least as ambitious as current arrangements.

## フランスの長期戦略 (p7) アメリカの長期戦略 (p8) ドイツの長期戦略 (p34) イギリスの長期戦略 (p90)

- 我が国の長期戦略においても、国内外への発信の観点から 図表や写真を活用し、視覚的にわかりやすいものとするを予定。(例：温室効果ガス排出量の推移や、ガス別排出量の内訳など、既存のデータ。各省の具体的な対策施策の写真やイラストイメージ 等)
- 今後行うパブリックコメントにおいては、図表や写真を入れた形で国民から広く意見を募集し、これを経て、COP26までに国連気候変動枠組条約事務局に提出することを目指す。

### <参考>

#### G7コーンウォール・サミット 首脳コミュニケ (抜粋)

38. (前略) 我々はまた、COP26までに、2050年長期戦略 (LTSS) を提出すること、並びに最新の科学、技術の進歩及び市場の進展を反映すべくパリ協定に沿って必要に応じこれらを定期的に更新することにコミットする。(後略)