

## **Appendix**

### **Rhineland-Palatinate**

Rhineland-Palatinate, located in south-west Germany, is among the medium-sized states in Germany with an area of 19,850 square kilometres.

#### **Starting point:**

Number of residents: 4.052 million (2015)

GDP: EUR 31,895 per capita (2013)

Greenhouse gas emissions<sup>1</sup> (2013): 31.98 million tonnes of CO<sub>2</sub>eq<sup>2</sup>

Within Germany, owing to its geographical location, Rhineland-Palatinate numbers among the regions which are most significantly affected by climate change. Over the last 130 years, the long-term average annual temperature in Rhineland-Palatinate has risen by approx. 1.5 °C. For this reason, the state also supports the Paris climate agreement and the efforts to limit global warming to under 2 degrees Celsius.

Rhineland-Palatinate has clearly defined its role as part of the community of solidarity in that it was already promoting the decentralised energy revolution as an important pillar in climate protection many years ago and passed a state climate protection law in 2014, which determined that the greenhouse gas emissions in Rhineland-Palatinate would be reduced by at least 40 percent in comparison with 1990 by the year 2020. The aim is to achieve climate neutrality by the year 2050, or at least a reduction in the greenhouse gas emissions of 90 percent in comparison with 1990. In the realisation of these objectives, particular importance is attached to conservation of natural resources, saving energy and the efficient use of energy, and the development of renewable energies.

The state of Rhineland-Palatinate's climate protection concept is the central element on the route to pursuing these objectives. It was adopted by the state government at

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<sup>1</sup> Energy-related CO<sub>2</sub>, process-related CO<sub>2</sub>, nitrous oxide (N<sub>2</sub>O), methane (CH<sub>4</sub>).

<sup>2</sup> See the 11th energy report from the state of Rhineland-Palatinate, Mainz 2015, P. 307, Tab. 37.

the end of 2015 following a comprehensive consultation process with citizens and associations. The concept covers almost 100 measures which are organised by area of activity and should be regularly evaluated and updated. The first review is scheduled for this year.

### Concrete measures and voluntary commitments

#### **I. Greenhouse gas emissions**

In the state climate protection law, it is specified as an objective that the total sum of greenhouse gas emissions in Rhineland-Palatinate should be reduced by at least 40 percent in comparison with the total emissions in 1990 by the year 2020. The aim is to achieve climate neutrality by the year 2050, or at least a reduction in the greenhouse gas emissions of 90 percent in comparison with the total emissions for the year 1990.

#### **II. Renewable energies**

The Rhineland-Palatinate energy policy pursues the aim of regionally balanced, consumer-oriented and economically viable development of renewable energies in order to further improve the added value and acceptance in the regions of our state.

Based on the above and the rate of development which develops for this year and next in renewable energies, the possibility of covering the demand for electricity financially from 100 percent renewable sources by 2030 should not be ruled out.

To this end, it is necessary for the state government to establish favourable framework conditions for the further development of renewable energies and to remove obstacles. The state government is also firmly committed to continuing favourable framework conditions for the further development of renewable energies.

In order to successfully manage financial interconnection of the sector, alongside the technical implementation, the development of appropriate legal framework conditions, incentive systems, market mechanisms and business models is of vital importance. Intelligent interconnection between the sectors is an indispensable instrument in the successful realisation of the overall energy revolution.

### **III. Energy efficiency**

The heating sector plays a significant role in improving energy efficiency: 56 of energy consumption in Germany occurs in the area of application of heating and cooling. In Rhineland-Palatinate, around 55 percent of the gross final energy consumption is used in the form of heating and cooling. By the year 2050, the building stock in Germany should be climate neutral, we also committed to this in the coalition agreement for Rhineland-Palatinate. To this end, an optimal balance between the use of renewable energies and improvements in energy efficiency should be achieved in the heating sector.

The public sector provides a particular example here. With the “Climate neutral state government in the Ministry for the Environment” pilot project, we have taken the first step on the road to climate neutral state government by 2030.

### **IV. Mobility**

Alongside the heating sector and electricity production, the transport sector is the third biggest emitter of CO<sub>2</sub> in the state and, despite reductions, is responsible for more than half of nitrous oxide emissions.

The state government of Rhineland-Palatinate attaches great importance to establishing innovative drive systems in road traffic. Electric motors have many benefits in comparison with motors driven by fossil fuels. Their CO<sub>2</sub> balance is good in the current energy mix and improves with the increasing proportion of renewable energy in electricity production. At the same time, electric motors contribute to securing the energy supply since dependence on imported fossil fuels has been reduced.

## **V. The state's exemplary role**

The state government is aware of its exemplary role in climate protection. In the state climate protection law, the aim of achieving climate neutral organisation of the overall balance for authorities, higher education institutions and other state institutions without separate legal personality was determined, insofar as they are subject to direct state organisational control, and official vehicles and trips by the year 2030. This should be achieved primarily through the conservation of raw materials and energy, as well as through the use of timber as a building material and renewable energies.

A corresponding pilot project began in the Ministry for the Environment, Energy, Food and Forests in 2017.

## **VI. Emissions trading**

The reform of the European emissions trading system (EU-ETS) for the 4th trading period from 2021 is right now ongoing at the European level. According to the decisions on backloading and market stability reserves (MSR) for reducing the certificate excess, it is currently a matter of the concrete elaboration of the future rules in the necessary amendments to the emissions trading directive (2003/87/EC). In these negotiations, Rhineland-Palatinate supports the aspirations for scientific review of the level of ambition in view of the Paris Agreement. The emission of one tonne of greenhouse gas must have a price in the future which guarantees a steering effect in climate policy and thus prevents investments in high carbon processes. In Rhineland-Palatinate, around 130 installations in emissions trading are recorded; nationally there are approx. 1900 installations. The level of emissions in ETS corresponds to approx. one third of the total emissions specified above.

## **VII. Adaptation to climate change**

Owing to its location, Rhineland-Palatinate is particularly affected by climate change within Germany. Even with ambitious global and national climate protection, it is foreseeable that there will be further unavoidable effects in addition to those already being seen in all environmental and social sectors. Since 2008, the state has been closely involved with the regional risks and opportunities of climate change and has developed adaptation strategies for a sustainable future. In 2010, the Rhineland-Palatinate Centre of Excellence for the Impact of Climate Change was established as a central institution. The climate change information system kwis-rlp established there provides comprehensive information and services for communities, citizens and businesses. The Climate Change Report published in 2013 contains the first basic strategic recommendations for regional adaptation to climate change with regard to selected, particularly relevant areas of activity.

Particular emphasis is placed on local adaptation to climate change. The state supports communities in the development of adaptation strategies and identifies ways in which adaptation to climate change which is stipulated by law in accordance with the building code alongside climate protection can be taken into account and implemented in urban development planning.