

Summary
Reference Projections
Energy and Emissions
2005-2020

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SUMMARY

New Reference Projections

In view of upcoming national and international evaluations and preparations of energy, climate and air pollution policy, the developments in energy use and airborne emissions have been projected until 2020 for two economic scenarios. These economic scenarios, which have been developed by the Netherlands Bureau for Economic Policy Analysis (CPB), are the 'Global Economy' scenario (GE) based on high economic growth and the 'Strong Europe' scenario (SE) with moderate growth. With these reference projections, the Energy research Centre of the Netherlands (ECN) and the Netherlands Environmental Assessment Agency of the National Institute for Public Health and the Environment (MNP/RIVM) are creating a quantitative framework for the analysis of possible future developments. The most important developments are described below and Chapter 1 provides an overview of the results.

Energy consumption continues to increase

Compared to the last decade, the increase in energy consumption remains approximately the same in GE and decreases in SE. The main cause is the assumed lower economic growth in SE. In both scenarios, the Netherlands remains energy-intensive, compared to other countries. The energy intensity of the Dutch economy does increase slightly in the GE scenario due to the relatively higher production growth of the Services sector. The energy saving rate amounts to approximately 1% in both scenarios and is more or less similar to the last decade in the period until 2020. On the one hand, many cost-effective saving measures have been taken and a more intensive saving policy is not assumed. On the other hand, the current saving policy has a long-term effect.

As a result of temperature increase, energy consumption increases less rapidly

The relatively mild winters of the last 15 years have led to less energy consumption for space heating. The projections take into account a further increasing temperature outdoors, caused by climate change. This leads to lower energy consumption for space heating in winter but also to higher energy consumption for space cooling in summer. By assuming an increasing outdoor temperature, less energy is needed for indoor climate control in the period until 2020.

Energy prices increase slightly

The liberalisation of the energy markets persists in both scenarios. The prices of natural gas increase slightly due to increasing costs of extraction and supply and the strong market position of the limited number of suppliers of gas. Electricity prices are also increasing, caused by a gradually decreasing overcapacity and the total costs of generation that are on-charged. The European system of emission trading has only a limited increasing effect on the electricity price. The Netherlands will produce more electricity within its borders as the advantages regarding costs of production abroad are decreasing.

Oil and coal consumption increase, renewable energy grows rapidly but plays a modest role

The share of oil in energy supply increases due to the large growth of transport and the basic chemical industry. In the Global Economy scenario, the share of coal in electricity production also increases due to the construction of new coal plants. The share of renewable energy, especially wind and biomass, increases rapidly due to policy, but its role remains modest with a share of 6-8% of total inland energy consumption in 2020. Renewable electricity production attains a share in total power supply of 9% in 2010 and 16-24% in 2020.

Renewable energy continues to require extra investments

In both scenarios the incentivisation policy for long-term renewable energy remains intact. Favourable conditions are assumed for large-scale implementation of renewable energy, considering the public support, technology development and cost decrease. Along with the large increase in the implementation of renewable energy, currently anticipated annual MEP subsidies for renewable energy (subsidies for environmental quality of electricity production) are also increasing, from 0.5 billion euro in 2010 to ranging between 0.6 (SE) and 1.5 billion euro (GE) in 2020.

Absolute decoupling of economic growth and emissions will not be achieved

The government's target to increase economic growth and decrease emissions into the air at the same time will not be achieved in both scenarios under the currently implemented policy. It is true that most emissions are decreasing until 2010, but in the period of 2010-2020 the emissions stabilise in SE and increase slightly in GE. In both scenarios all emissions are so high that the ambition levels of the fourth National Environmental Policy Plan are still out of reach.

The emission of greenhouse gases continues to increase, especially CO₂

The increase of CO₂ emission is higher in the GE scenario than in the SE scenario, which is mostly related to the higher economic growth and a larger share of coal fired power plants. The increase in CO₂ emission is partly compensated by a decrease of other greenhouse gas emissions such as methane and nitrous oxide until 2010. In the period 2010-2020, however, the emissions of other greenhouse gases cease to decrease and the total emission of greenhouse gases increases in both scenarios.

The Netherlands complies with the international Kyoto obligation

The Kyoto target is probably met in both scenarios, which include currently foreseen policy. Important assumptions are that subsidies for renewable energy are continued and that CO₂ emission allowances are allocated at the current level, also after 2007. Moreover, it is assumed that the government will realise the intended purchase of foreign emission reductions via the Kyoto mechanisms. Approximately half of all policy effects in 2010 will be realised through emission reduction outside the Netherlands.

The decrease in other airborne emissions halts around 2010

Acidifying emissions of NO_x, SO₂ en NH₃ and large-scale air pollution from NMVOC en PM₁₀ decrease until 2010 under the influence of air pollution policy and the reduction of the livestock due to the EU milk quotas and the increasing milk production per cow. After that, emissions stabilise in SE and increase slightly until 2010 in GE. In this period, the effect of the air pollution policy is annulled by the volume growth of economic production and consumption.

Can the Netherlands comply with the European emission obligations for acidification and large-scale air pollution?

The Netherlands cannot comply with the EU obligation to limit NO_x and SO₂ emissions to the NEC (national emission ceiling) in 2010 in either of the two scenarios. The main reason for this is the volume growth of transport and the industry. The chances of reaching the NEC for NO_x are fifty fifty if the policy measures that were announced in the White Paper on transport emissions are implemented and if the European Commission grants an exemption because of a non-representative EU emission method for heavy company vehicles. The chances of reaching the NEC for NO_x are fifty fifty if the Dutch government holds on to its position in the current negotiations with the industry, refineries and power companies.

In the cases of NH₃ and NMVOC it is yet uncertain whether the NEC obligation can be met, which, among others, depends on new insights in the NH₃ emission in manure employment and the NMVOC emission from cold starts of petrol cars.