

Introduction, Objectives and Scope

Biofuels are at the centre of intensive discussion. It is viewed by many as a tool to help reduce greenhouse gas emissions and fossil fuel use, to foster rural development, and to create new markets for agricultural products. Others, however, worry about threats to natural habitats, environmental damage due to more intensive agricultural practices, and competition for food commodities and land needed to feed the world.

This report seeks to shed light on this discussion by providing information and analysis on a wide range of biofuel related issues. In particular, it attempts to distinguish between areas where the available information is sufficient to draw policy conclusions from those areas where more research is necessary.

This report limits its analysis to liquid biofuels for transport derived from either agricultural feedstocks or from biomass that is related to agricultural production. In addition to first-generation biofuels from grains, sugar cane and beet, oilseeds, palm oil, and – in some developing countries – roots and tubers, it also examines second-generation biofuels derived from agricultural residues or from biomass dedicatedly produced either on agricultural land or by bringing other land into production. It does not examine in any detail (other than as an outside factor in the quantitative analysis) other biofuel chains currently being developed, such as fuels from wastes, used cooking oils, algae, residues from the dairy and meat processing industry. Nor does this report deal with other forms of non-food biomass use, such as for generating heat and/or power – other OECD work will look at these developments at a future stage.

Chapter 1 provides facts and trends related to biofuels. In particular, an overview of recent developments in the biofuel markets examines production, use and trade for ethanol and biodiesel, and briefly discusses recent price developments in the ethanol market. Public policies and their objectives are examined, as are the scientific and technological aspects of biofuel developments. Finally, environmental performances of current and next-generation biofuels are discussed.

Chapter 2 presents the methods and results of the quantitative analysis of biofuel policies and developments. Using the OECD/FAO Aglink-Cosimo model, it looks at the impact of current and new biofuel policies on biofuel production, use and trade, as well as on agricultural commodity markets. It also discusses the potential implications that second-generation biofuels might have and compares them to those of commodity-based biofuels. A third issue analysed is the impact of higher or lower oil prices. Finally, this chapter examines the environmental effects of current and new policies by using the integrated economic and natural science model SAPIM.

Costs and benefits of biofuel support are compared in Chapter 3. Several policy objectives are examined individually as is the impact of biofuel support policies and the growth in the biofuel industry. This analysis brings together the results from the quantitative analysis obtained in Chapter 2 and the information presented in Chapter 1. Chapter 4 concludes this report and provides policy recommendations.