6 Scenarios: Europe’s DG Power Generation in the Year 2020

As a part of the DECENT futures study, scenarios for Europe’s DG power generation were developed based both on a survey (cf. Chap. 4.3) and the additional experience gained in the DECENT project. First, draft scenarios were developed by the DECENT team. These were submitted to a review by five European energy experts and subsequently revised to their final version.

In the following, four scenarios will be given to illustrate possible futures of DG within the EU’s electricity supply in the year 2020. In addition, the scenarios serve as a basis for a robustness check of the policy recommendations derived in the DECENT project (cf. Chap. 9.8). It is not the aim of the scenarios to describe desirable futures nor will it be analysed which steps have to be taken in order to reach any of the scenarios. The time horizon for the scenarios is 2020. The technical input for the scenarios was drawn from the future survey. The scenarios were developed along two key drivers – environmental concern and technological development – which have substantial impact on Europe’s future power market. The scenarios have an illustrative nature in order to portray the findings of the future survey and to sketch possible future trends in the electricity business:

- Scenario I – Green Power and Nuclear Ecology
- Scenario II – Huge Fossils
- Scenario III – Widespread Economic Niches
- Scenario IV – Hip Ecology

Development of scenarios. The major impact factors upon the development of the electricity market and decentralised generation which have been identified in the DECENT project were structured and evaluated in a workshop by the DECENT research team. Two drivers:

1. Extent of greenhouse effect on the agenda
2. Degree of technological development of decentralised generation technologies

were selected to form the orthogonal axes of a matrix with four quadrants – the later scenarios (see Fig. 33).

The chosen set of drivers was preferred against other discussed sets since they are not under direct control of EU-policy in contrast to e.g. the liberalisation of the energy market. Although measures taken up by the Commission do have an impact on the drivers their relation is uncertain. Furthermore the drivers are to a great extent logically independent from each other and both of them are independent

from policy strategies concerning the liberalisation process. Therefore they were considered to be especially suitable for a "robustness check" of the policy implications derived in the DECENT project. In this respect it has to be mentioned that policy regulations at EU and at Member State level concerning the regulation and liberalisation of the energy market may have a stronger impact on the future of electricity generation in Europe than the selected drivers.

The drivers are specified as follows:

1. **Greenhouse effect on the agenda**: The driver measures general public opinion on how harmful the greenhouse effect is to mankind and the importance this issue has upon political and economic decisions. However, the reason why the greenhouse effect is high or low on the agenda may be various:

   - **I**: High greenhouse effect, low technological innovation
   - **II**: High greenhouse effect, high technological innovation
   - **III**: Low greenhouse effect, high technological innovation
   - **IV**: Low greenhouse effect, low technological innovation

   ![Diagram](image)

   **Fig. 33**: Four scenarios, characterised by 2 drivers

The impact of CO₂ emissions on climate change are not as drastic as anticipated today. The impacts are very drastic and first effects become visual. Other issues (economic or social crises) push environmental concerns off the agenda. However those possible reasons for a change in environmental concern will not be analysed further.

The "zero" level would be today’s awareness of public opinion and the willingness of decision makers to take them into account. It is assumed that the development of the environmental concern from today up to the year 2020 has been rather linear – either towards a stronger or a lesser concern.

2. **Technological innovation**: This driver measures the technological innovation that DG technologies have undergone. The focus lies less on the “in principle