Preliminary assessment of the findings from the report on the methodology for calculating the cost of capital from the fifth regulatory period onwards

Since the entry into force of the Act amending energy industry law to take account of Union law and amending other provisions of energy law of 22 December 2023 (Federal Law Gazette I 2023 No 405 of 28 December 2023) the Bundesnetzagentur has been responsible for laying down methodologies for setting a reasonable, competitive and risk-adjusted rate of return on capital employed on the basis of which the cost of equity, cost of debt and gearing ratio can be calculated in conjunction with the weighted average cost of capital (WACC) method from the fifth regulatory period onwards.

In accordance with section 21(3) (and section 73(1b)) of the Energy Industry Act (EnWG) these methodologies must take into account the latest scientific findings. According to the explanatory notes on the legislation, this applies in particular to the cost of equity; account must also be taken of business management principles (Bundestag printed paper 230/23, page 92).

Against this background, the Bundesnetzagentur put out a tender for a report in which various questions relating to the methodology for calculating the cost of capital from the fifth regulatory period onwards were to be scientifically examined. The tender was awarded to Frontier Economics together with Professor Zechner and Professor Randl.

The following is a brief assessment by the Grand Ruling Chamber for Energy of the main findings from the report. This does not pre-empt any determinations to be made. It solely reflects the current status of deliberations. The aim of publishing the report at an early stage is to provide a scientific basis for future discussions on the design of the methodology determination on the return on capital. The published report and the Bundesnetzagentur's preliminary assessment of individual points is therefore not to be seen as an advance consultation on the points to be included in the determination. Stakeholders will instead be given the opportunity to state their views during a formal consultation in the future course of the determination proceedings. A further expert workshop is also planned for the beginning of the year.

Capital asset pricing model (CAPM) and other capital market models

Based on the findings from the previous reports on calculating risk premiums for electricity and gas network operators produced by Frontier Economics (2008, 2011 and 2016) and Frontier/Randl/Zechner (2021), the authors of the report looked at whether there had been any new scientific findings since the last determination on the cost of equity issued by Ruling Chamber 4 in 2021 that would justify deviating from the CAPM or including other models.

The report's authors concluded that the CAPM is still better than other capital market models for the purposes of calculating the cost of equity of regulated companies. They do not consider a fully global/international CAPM to be preferable.

Against this background, the Bundesnetzagentur intends to use the CAPM, which has been used in Germany since the determination on the cost of equity for the first regulatory period, as the

basis in the methodology determination on the return on capital as well. The CAPM, which is directly derived from a strict capital market theory, is widely used and scientifically recognised. The model has a simple structure and enables the cost of equity to be estimated empirically based on a small number of assumptions. In addition, the CAPM is applied in numerous regulatory proceedings (in particular under the European regulatory framework).

The core of the model is the risk factor that represents the relationship between the market risk premium and the premium to cover entrepreneurial (in this case network operation-related) risks. The risk factor represents a company's systematic risk in comparison to the market average. The risk factor is calculated using econometric analyses of the fluctuations in share prices in relation to those in a reference index. In this case, companies must be chosen that are comparable with German network operators. The choice of peer companies and derivation of the risk factor will be made in individual determinations and not earlier in the methodology determination. The report therefore did not cover calculation of the risk factor.

At present, the Bundesnetzagentur is tending towards fixing the cost of equity for the entire regulatory period in the interests of better predictability and reliability for the network industry and investors.

Risk-free rate

The methodology for calculating the risk-free rate is currently set out in section 7(4) of the network tariff ordinances (10-year average of yield on debt securities outstanding).
The Bundesnetzagentur, as stated in the expert workshops, does not intend to lay down specific series in the methodology determination on the return on capital.

The Bundesnetzagentur will instead develop criteria for the choice of suitable series on the basis of the content of the report. The current view is that the parameters cited in the report (residual maturity of 10 to 20 years, quotation in euros, use of zero-coupon bonds, use of euro area government bonds with AAA sovereign rating, and German government bonds as the reference series for the risk-free rate) seem appropriate.

The choice of suitable series will then be made in the individual determination, which will provide the flexibility to respond to any changes that may have taken place over time.

When defining the criteria, the Bundesnetzagentur will ensure the "conceptual consistency" described in the report between the base rate and the risk-free rate used to calculate the market rate premium. However, as made clear in the report, this does not mean that both risk-free rates used in the method of historical excess returns have to be numerically identical.

The proposal in the report to base the length of the averaging period for calculating the base rate on the length of the regulatory period seems appropriate. This proposal is not only scientifically sound but would also enable the Bundesnetzagentur to accommodate numerous calls from industry for a shorter averaging period than the period currently prescribed.

As things stand, the question discussed in the report of whether there is a convenience yield and how any convenience yield should be compensated will be addressed in the individual determination.

Method for calculating the market risk premium

The report's authors evaluated different approaches for calculating the market risk premium and came to the conclusion that the method of historical excess returns currently applied by the Bundesnetzagentur is still the most suitable method. With regard to the data basis discussed, the Bundesnetzagentur only intends to define criteria for the choice of data series and not a specific data source in the methodology determination. This will allow any future developments to be taken into account in the individual determinations.

The estimation of the market risk premium is based on the use of historical excess returns over long-term risk-free bonds and comprises several steps. The first step is to choose the data series and peer countries and the reference period. This already provides a certain range for solutions. In the second step, a range of historical excess returns is derived from the question of how to calculate the average in the data series considered appropriate. The question of how to calculate the specific market risk premium within this range will be addressed in the individual determination. However, the Bundesnetzagentur intends to define qualitative criteria in the methodology determination that can be used to provide a guideline within the range in the individual determination. These criteria could include a comparison with other European countries, for example.

Gearing ratio

It is necessary to define a reference capital structure (the relationship between equity and debt capital) to calculate the return on assets on the basis of a WACC method.

Indicators for a representative gearing ratio are the actual debt ratios of peer companies (for example peer group beta, unlisted network operators), gearing ranges used by rating agencies for typical credit ratings for regulated network operators, and gearing ratios used by other European regulators.

The report's authors used these indicators and identified a range for the gearing ratio of between 40% and 60% (debt).

The Bundesnetzagentur intends to specify the exact gearing ratio early on in the methodology determination. At present, it considers the ratio currently used in regulation of 40% equity to 60% debt to still be appropriate. These considerations are supported by the report.

According to the report's authors, the WACC method only has a low level of sensitivity to changes in the gearing ratio. Nevertheless, an overall efficient financing structure can be assumed given a ratio of 40% equity to 60% debt.

Cost of debt

Under the current rules in section 5(2) of the network tariff ordinances, the actual borrowing costs are recognised, taking account of the level customary in the financial markets. The determination of the interest rate for the portion of equity exceeding the equity ratio is currently regulated in section 7(7) of the network tariff ordinances. The introduction of the WACC approach requires a method for calculating the cost of debt that reflects the borrowing costs for electricity and gas network operators.

In line with the recommendations made in the report, the Bundesnetzagentur currently considers the “direct” market-based calculation of the cost of debt using a bond index to be appropriate. As with the risk-free rate, the Bundesnetzagentur does not intend to lay down specific series in the methodology determination on the return on capital. The criteria cited in the report for the choice of bond index (sector-specific index in euro, minimum credit rating of BBB, longer-term residual maturities of around 10 years) seem suitable to ensure an appropriate cost of debt for electricity and gas network operators.

At present, the Bundesnetzagentur believes there are good reasons in favour of a dynamic adjustment of the cost of debt for new investments within the regulatory period. This would take account of the latest developments in interest rates combined with the high level of investment needed. The proposal in the report to base the length of the averaging period for calculating the cost of debt for existing assets on the length of the regulatory period, as with the risk-free rate, seems appropriate.

The report’s authors do not make a final assessment of whether and to what extent ancillary financing costs also need to be taken into account. The Bundesnetzagentur will address the necessity of a markup in the methodology determination proceedings and will look at whether to include an option for a markup in the methodology determination, grant a markup in the individual determination or specify a markup directly in the methodology determination. A markup would only be applicable if and to the extent that allowance for ancillary financing costs was not made elsewhere.