



Conclusion of the O-GDP 2013, second draft

July 26, 2013

The four German transmission system operators are making a major contribution to the implementation of the "Energiewende" in Germany and, with this revised draft of the 2013 offshore grid development plan (O-GDP), they are jointly committing themselves to expanding offshore wind energy. The O-GDP presents the necessary expansion of the offshore grid in the next 10 or 20 years. For the first time, it enables the expansion of offshore wind energy and the grid connecting systems to be synchronised with the expansion of the transmission network on land. In conjunction with the electrical supply grid development plan (GDP), the O-GDP is therefore a prerequisite for achieving the "Energiewende" objectives.

The expansion of the offshore grid is dependent on acceptance in political circles and society as well as a fine dovetailing of the development of offshore wind farms (OWFs), the offshore grid and the transmission network on land. Both the legal/planning and regulatory framework and wide social and political support at all levels will be decisive for the implementation of this ambitious investment programme. This assumes comprehensive information and a binding collaboration between those involved based on partnership. The grid development planning process will make its contribution by promoting transparency and public dialogue.

The general public were invited to involve themselves in this process in a public consultation on the first draft of the O-GDP. The comments on the O-GDP, predominantly drafted by project sponsors, associations and institutions, have changed the O-GDP.

The topics which were addressed in the comments focused on questions relating to the timescale, the costs, the statutory basis and the basis of the data. In some cases, working through the comments showed that further explanations and illustrations were necessary. These have been addressed in the present revised draft.

The transmission system operators welcome the contributions as part of the consultation of the first O-GDP draft and the constructive debate at the dialogue events during the consultation phase. This guarantees that all interests in the O-GDP will be taken into account and that the O-GDP will be the result of a mutual awareness and development process.

The O-GDP relates to the need to expand the German offshore grid and is based on the statutory requirements of the Energy Industry Act (EnWG). A "system change" was introduced with the amendment of the EnWG which came into force on 28.12.2012. This enables a plan for the orderly expansion of the energy infrastructure at sea to be set up for the first time. The setting up of grid connection systems was initiated beforehand based on the progress of individual offshore wind farms (OWF). The need for new boundary conditions for the development of offshore wind energy has already been discussed in political circles and in the offshore wind energy sector in the course of 2012. The "Acceleration of offshore grid connection" working party established by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and the Federal Ministry of Economics and Technology has succeeded in achieving a cross-sector consensus which will lead to the "system change" introduced with the amendment of the EnWG. In future, the expansion of offshore wind energy will focus on the step-by-step expansion of an efficient offshore grid and the resulting grid connection capacity. The transmission system operators are laying the foundations for this with the O-GDP.

In this O-GDP, the development of the transmission grid on land, the spatial planning at sea and the technical boundary conditions for a sustained plan with detailed particulars of the nature, timescale, implementation times and costs of the measures necessary for the next 10 or 20 years have been brought together for the first time. The focus here is particularly on the timescale of the measures for expanding the offshore grid based on objective criteria. These mainly include a division of the North Sea and the Baltic into distance zones, the consideration of spatially defined priority areas for offshore wind energy and the generation



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potential of the individual clusters identified in the Federal offshore plan and in the respective regional plans produced by the Federal states. The O-GDP will therefore play a key role as an instrument for coordinating the efficient and sustainable development of offshore wind energy.

The O-GDP identifies measures for the scenario framework which has been presented for public consultation and has been approved by the BNetzA which satisfy all the requirements imposed by the legislator and the BNetzA. Three scenarios relate to the target year 2023. One scenario is also being investigated for 2033 in order to assess the long-term development over a period of 20 years. Scenario A 2023 assumes a moderate expansion of offshore wind energy, lead scenario B 2023 assumes a medium expansion, and scenario C 2023 an ambitious expansion

The O-GDP establishes the requirement for grid connection systems and determines the start and end points of grid connection systems taking into account the expected geographic distribution of the OWFs and the connection capacity available at the grid connection points in the transmission network. Specific route corridors in the exclusive economic zone are defined as part of the Federal plan by the Federal Maritime and Hydrographic Agency and in coastal waters by the BNetzA in conjunction with the Federal states.

The grid connection points established in the GDP form a central interface between the O-GDP and the GDP. A change to the grid connection points or to the associated grid infrastructure must consequently always be taken into account in both grid development plans.

The overall length of the extension of the offshore grid in scenario B 2023 amounts to around 2,115 km, wherein 1,705 km are attributed to DC grid connection systems in the North Sea (of which 1,135 km are HVDC transmission lines and 570 km AC connections) and 410 km to AC grid connection systems in the Baltic Sea (of which 350 km are AC transmission lines and 60 km AC connections)¹. The transmission capacity of the extension of the offshore grid in scenario B 2023 is 6.4 GW, of which in turn 5.4 GW are attributed to the North Sea and 1.0 GW to the Baltic Sea. The investment for offshore grid expansion measures comes to a total of around 22 billion euros. The investment in the initial offshore grid (around 12 billion euros) is already taken into account here.

The successive agreement of the grid expansion on land, the development of the OWFs, the Federal offshore plan and the plans of the coastal states is an iterative process. The results of the O-GDP will have an effect on the offshore wind energy sector and the submitted plans, which in turn will lead to modifications to the subsequent offshore grid development plans. The O-GDP is therefore not conclusive but, like the GDP, will be regularly revised in order to take into account any changing boundary conditions in generation and consumption.

On conclusion of the consultations and subsequent approval by the BNetzA, the 2013 O-GDP will form the basis of the Federal requirement plan. The Federal requirement plan will be the binding foundation for the expansion of the offshore grid.

¹ The modified total length of the extension of the offshore grid in scenario B 2023 compared with the first draft of the 2013 O-GDP comes about, among other things, as a result of the new platform location in project NOR-7-2. The Sandbank OWF has also been moved from the extension to the initial offshore grid. Furthermore, the lengths of the cross connections within Cluster 1 and 2 have been modified based on the current state of the Federal offshore plan.