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ANNEX

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to the

Commission notice

to the Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC

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ANNEX

EXAMPLES OF PRACTICES, CASE STUDIES, METHODS AND NATIONAL GUIDANCE

Introduction

This annex is intended to provide elements of guidance and examples of processes and methods for the different stages of the implementation of Article 6(3) and 6(4) procedures. They are grouped and presented according to the main sections and items covered in the guidance document.

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1. SCREENING AND APPROPRIATE ASSESSMENT: APPROACHES, METHODS, EXAMPLES FROM MEMBER STATES

1.1 Information and practical tools to support the screening and the appropriate assessments (AA)

Germany - Database and Information system of the Federal Agency for Nature Conservation (BfN) for appropriate assessments
The necessary information on potential negative effects for nearly all project types and plans is provided in the information system <i>FFH-VP-Info</i> of the Federal Agency for Nature Conservation. Additionally, <i>FFH-VP-Info</i> hosts an extensive database of possible impacts and effects with respect to specific habitat types and species that can be used for screening and appropriate assessments. http://ffh-vp-info.de/FFHVP/Page.jsp .
I. Objectives and functions of <i>FFH-VP-Info</i>
<p>The main objective of <i>FFH-VP-Info</i> is to function as a central platform providing information on impact factors that have to be considered for the screening (stage 1) and appropriate assessments (stage 2) of plans or projects, and to provide information on potential effects of impacts on specific habitats and species under the Habitats Directive and the Bird Directive.</p> <p>Access type No 1 (project types, plans, impact factors) intends to support proponents and project developers by providing a quick overview of all impact factors they have to take into account.</p> <p>Access type No 2 (habitats, species) allows in-depth enquiries on the specific effects of an impact factor on habitats or species that may be of concern for the project.</p> <p>Additional information includes a glossary, cited literature, data about mobility and home ranges of species.</p> <p>Overall, <i>FFH-VP-Info</i> aims at providing best scientific knowledge, facilitating expert assessments and their scrutiny by the permitting authorities. While the completeness and accuracy of the assessments is important to guarantee legal safety, the amount of time, financial and personal efforts used may be kept at a reasonable level on both sides by providing easy access to the relevant information.</p> <p>=> http://ffh-vp-info.de/FFHVP/Page.jsp?name=ziel (introduction of <i>FFH-VP-Info</i>)</p>
II. Screening tool for project types and plans and their possible effects
<p>The screening tool provides data on about 140 project types assigned to 19 groups. This includes an estimation of possible relevance as regards 36 different impact factors. Relevance is indicated by numbers:</p> <p>0 = normally not relevant (exceptions may apply) 1 = potentially relevant 2 = regularly / generally relevant</p> <p>A checklist and a report are available for each project type, with short individual explanations of the relevance ratings of impact factors. For each impact factor an explanatory page is linked to a short definition and detailed descriptions on the potential effects of the respective factor (see below).</p> <p>=> http://ffh-vp-info.de/FFHVP/Page.jsp?name=projekttypen (introduction projects) => http://ffh-vp-info.de/FFHVP/Projekt.jsp?start (database projects)</p>

III. Database and datasheets to the habitats and the species of the Habitats Directive and the Birds Directive

This is the core of the information system. It provides detailed information on the sensitivity and potential effects of the impact factors for nearly all German

- Habitats of Annex I Habitats Directive => <http://ffh-vp-info.de/FFHVP/Lrt.jsp>
- Species of Annex II Habitats Directive => <http://ffh-vp-info.de/FFHVP/Art.jsp>
- Bird species of Annex I and Article 4(2) Birds Directive => <http://ffh-vp-info.de/FFHVP/Vog.jsp>

Once the subject is chosen, the relevance of the different impact factors with respect to a particular habitat or species is displayed in a table. The selection of a topic / effect leads to further information which is provided in 5 categories:

1. Sensitivity / possible effects (best scientific knowledge regarding sensitivity of habitats and species and about possible effects for all 36 impact factors);
2. Regeneration capacity (information on natural self-regeneration);
3. Established methods for assessing impacts (hints, references and comments on parameters, criteria or methods to conduct prognoses of impacts and effects);
4. Thresholds of significance and information for the screening (examples, orientation values, thresholds for relevant effects);
5. Thresholds of significance and advice for the appropriate assessment (examples, orientation values, thresholds for significant adverse effects).

When selecting further the effects of an impact factor, one or more pages open up to display excerpts of scientific findings, expert knowledge and estimates contained in the database. There is a possibility to read or print selective or comprehensive reports of these data.

The relevance ratings are based on scientific sources that have been evaluated and extracted. Where such sources are not available the ratings are suggestions for orientation, comparable to the relevance ratings for project types.

The sources that have been used are marked with respect to their scientific quality and/or their specificity.

=> <http://ffh-vp-info.de/FFHVP/Page.jsp?name=lebensraumarten> (introduction habitats/species)

IV. Definition and description of 36 impact factors

Knowledge base on 36 impact factors assigned to 9 groups with specific definitions and detailed descriptions about possible effects on habitats and species. These impact factors are the common link between projects and habitats/species. They can also be read or printed as reports.

=> <http://ffh-vp-info.de/FFHVP/Page.jsp?name=wirkfaktoren> (introduction impact factors)

=> <http://ffh-vp-info.de/FFHVP/Wirkfaktor.jsp> (database impact factors)

V. Additional information

So far, additional information includes a bibliography of the literature cited in the system, a glossary and links containing e.g. a web mapping system of the German Natura 2000 sites. In future, the system may serve as a platform for presenting further information on the assessment of impacts and effects as far as it is appropriate on the federal level.

Ireland - AA GeoTool – Information for screening and appropriate assessment

AA GeoTool application supports the data gathering process during screening (stage 1) and the appropriate assessment (stage 2). The Environmental Protection Agency (EPA) and the National Parks and Wildlife Service (NPWS) have worked together to develop the AA GeoTool. The application uses data directly from a web service provided by the NPWS. The data is regularly updated and the assessments are based on the most up-to-date information available.

The AA GeoTool allows the user to select a point on the map and then search for SACs and SPAs within a defined distance/ upstream/ downstream of the point. The distance selected by the user is dependent on the level of potential environmental impact from a plan or project.

The information gathered for each Natura 2000 site located within the selected distance range includes the following:

1. site type, e.g., SAC or SPA;
2. unique site code for the site;
3. site name;
4. distance of the site from the users selected starting point;
5. search direction selected by user;
6. list of qualifying interests for each site;
7. Url link to the conservation objectives for each site.

Link to AA GeoTool: <https://gis.epa.ie/EPAMaps/AAGeoTool>

Further information on specific Natura 2000 Sites can be found on the NPWS website:

<http://www.epa.ie/terminalfour/ApproAssess/index.jsp> and also
<https://gis.epa.ie/EPAMaps/default>

Netherlands -Tools and guidance for appropriate assessment

In the Netherlands a 'route planner for consideration of protected nature in environmental permits' is available¹, which helps in taking all the steps necessary in the process. This route planner is intended for the applicant of an environmental permit where a nature check is required. It is also intended for the competent authority involved in the processing of an application for an environmental permit, namely the municipality and the province. This route planner describes the procedural steps that are necessary if an assessment for protected species or protected Natura 2000 sites is part of the procedure for obtaining an environmental permit. The route planner helps the applicants and practitioners with questions such as 'How do I know whether a nature assessment is required?', 'In which phase should the ecological data be available?' and 'How long does the procedure take?'

There is also a tool to predict possible impacts on species and habitat types in Natura 2000 sites (but not on the integrity of the site as such). The impact indicator 'Natura 2000 - ecological preconditions and disruptive factors' is a tool for developers, permit providers and plan makers who have to deal with activities in or near Natura 2000 areas. The effects indicator is an instrument with which possible harmful effects as a result of the activity and plans can be explored. The effects indicator provides information about the sensitivity of species and habitat types for the most common disturbing factors. This information is generic: to determine whether an activity is harmful in practice, further research must be undertaken.

¹ <https://www.synbiosys.alterra.nl/bij12/routeplanner.aspx>

The web also contains guidance on significance², developed in 2010, which provides advice for the assessment of the significance of impacts on Natura 2000 sites. The starting point is that if, as a result of an intervention, the surface area of habitat, number of a species or quality of a habitat will be lower than referred to in the conservation objectives, then there may be significant consequences. However, the specific characteristics of the activity or the specific circumstances of the area can make that, despite the decrease, there are no significant consequences. Detailed analysis at the site level can therefore lead to a different conclusion, which is described in the guidelines.

In addition, there is a specific guidance for projects with possible nitrogen effects. For N-deposition for the Netherlands a complex system has been developed that takes into account the cumulative impacts of (only) nitrogen from different sources.

On national projects, a 'permit data bank' provides all relevant information, the decision and since 1-1-2017 also the complete appropriate assessments for permits related to the implementation of the Nature Conservation Act.

1.2 Guidance for the assessment

Austria – Guidelines for assessment of transport infrastructure

Austrian Research Association Road - Rail –Transport (www.fsv.at) has developed guidelines, so called 'RVS'³. The Austrian Ministry for Transport, Innovation and Technology motorways and highways has made these guidelines binding for the ASFINAG (national public road company) – and part of the 'rules of the game' for other projects as well. They describe, inter alia, how planning processes must be designed, which methods should be used to sufficiently consider different environmental requirements. These guidelines contain for example, recommendations or agreements on thresholds, descriptions of collection methods, or definitions of technical terms. For nature protection – especially for Natura 2000 and EU species protection requirements – a specific RVS was worked out and published 2015 ('Species conservation assessments in infrastructure projects', RVS 04.03.13). Topics such as the definition of a significant nuisance for a population or a Natura 2000 area are addressed in a way the users – the project planning offices and infrastructure evaluation authorities – can clearly understand.

Belgium - Guidelines to assess acidification and eutrophication through aerial deposits

There are guidelines on impacts such as 'acidification through aerial deposits' and 'eutrophication through aerial deposits'. These methodologies are linked to activities such as intensive agriculture, industrial heating and energy processes and mobility (deposition of NOx and NH₃). For assessing these possible impacts, a two-steps approach is promoted. For a first screening, an **interactive online tool** is available to determine through a quick scan whether there can be a possible impact. If this quick deposition scan gives a green light, no possible harmful impact is to be expected. If the tool gives a red light, this means that there might be a harmful impact that needs to be examined closer through an appropriate assessment (<https://www.milieuinfo.be/voortoets/>).

² https://www.commissiemer.nl/docs/mer/diversen/leidraad_bepaling_significantie27052010.pdf

³ RVS=Guidelines and Regulations for the Planning, Construction and Maintenance of Roadways (RVS) www.fsv.at

Germany – Setting thresholds to determine significant adverse effects

In Germany, as elsewhere, because of a high level of subjectivity, it was difficult to assess the significance of effects on Natura 2000 target features, which is the core of the appropriate assessment. As a result, the competent authorities often did not have the reasonable scientific certainty they needed to back their decisions on whether or not to authorise a plan or project.

To address this problem and ensure a more uniform and consistent approach when assessing the impact significance in practice, the German Federal Agency for Nature Protection (BfN) commissioned a research project to provide scientifically tested rules and conventions for assessing significance of effects on all habitat types and species listed in the Birds and Habitats Directives that occur in Germany. The resulting guidance document was published in 2007 (Lambrecht & Trautner 2007).

A: Background and status of the standards

Based on the ruling of the CJEU in the Waddenzee-case the highest national administrative court in Germany (BVerwG) came to the conclusion that a loss of habitat which is part of the conservation objectives in a Natura 2000 site should, in general, be considered a significant adverse effect on the integrity of the site. Also the ruling of the CJEU regarding the Galway-Case 11.04.2013 (C-258/11) shows clearly that a strict protection of habitats in Natura 2000 sites is required and that even small losses might be assessed as significant under specific conditions.

In order to deal properly with relatively small losses, the standards of Lambrecht & Trautner (2007) provide orientation levels of significance. These standards were developed by scientific research and development projects and then discussed and evaluated through broad expert participation procedure during a six year period. They are now broadly accepted and agreed, recommended in guidelines, officially and regularly regarded by administrative courts and broadly used in appropriate assessments of all kinds.

B: Concept of the standards

The starting premise for the standard is that, in general, a permanent loss of habitat types and habitats for species, which are part of the conservation objectives in a Natura 2000 site, should be considered a significant adverse effect on integrity of the site. A certain level of loss could nevertheless be treated as insignificant for some habitat types and species under certain conditions.

The guidance provides scientifically agreed criteria and thresholds for determining significance, which are based on qualitative and functional aspects, as well as on quantitative criteria. For an impact to be considered insignificant all the following conditions must be met:

- A. No important or special function or variant of the habitat is affected. Specific features of the habitat must remain unaltered;
- B. Orientation values of 'quantitative — absolute area loss' (defined for each habitat type and for habitats of species) are not exceeded;
- C. A 'relative area loss' of 1% of the total area of the habitat in the site is not exceeded;
- D. Cumulative effects with other projects do not exceed the above values (B and C);
- E. Cumulative effects with other impact factors do also not exceed the above values.

C: Developing the thresholds for habitat loss

Orientation values for non-significant losses were developed by a habitat-specific and species-specific approach using a set of criteria. The thresholds were defined taking into account the vulnerability of the habitats, which was estimated on the basis of 3 main criteria and 4 secondary criteria:

Main criteria for habitat types:

- ecological minimum viable area of the habitat;
- average area of the habitat in Natura 2000 sites;
- total area of the habitat in the Natura 2000 network;

Secondary criteria:

- rarity / frequency of the habitat type;
- status as priority habitat;
- threat situation of the habitat;
- regeneration capability.

Five vulnerability classes for terrestrial habitats and two classes of marine habitats were defined (see Table 1), based on an evaluation of the nationwide stock of habitats in the Natura 2000 network.

A matrix was then established that related the vulnerability classes with 3 levels of relative area loss (level I, II and III), corresponding to 1%, 0.5% and 0.1% relative loss. Thresholds of tolerable absolute area loss for each habitat class were estimated for each class of habitat and each level of relative loss s (see Table 1).

Table 1: Orientation values (OV) for absolute and relative thresholds of tolerable non-significant losses of protected habitats of Annex 1 of the Habitats Directive

In case of a relative loss:	Level	Classes of orientation values (thresholds of tolerable quantitative-absolute loss of habitat)						
		1	2	3	4	5	6a	6b
		Special Marine Class						
< 1 %	I. basic OV	0 m ²	25 m ²	50 m ²	100 m ²	250 m ²	500 m ²	0,5 ha
< 0,5 %	II. middle OV	0 m ²	125 m ²	250 m ²	500 m ²	1.250 m ²	2.500 m ²	2,5 ha
< 0,1 %	III. upper OV	0 m ²	250 m ²	500 m ²	1.000 m ²	2.500 m ²	5.000 m ²	5 ha

In practice this means that for 21 of the 91 habitat types occurring in Germany, no loss is acceptable, while for the remaining habitats some loss may be considered insignificant if the orientation values defined for each habitat are not exceeded.

Relating the absolute area loss to the relative loss implies that a larger habitat area will allow a greater absolute loss as long as it represents a smaller proportion of affected surface area. For the establishment of thresholds, the minimum viable area of habitat was considered. Orientation values for habitat loss defined for some Annex I habitat types in Germany are presented in Table 2 below.

Table 2 Orientation values for habitat loss defined for some Annex I habitat types in Germany

Code	Habitat type	Orientation value for habitat loss (in m ²)			
		class	Level I	Level II	Level III
			If loss ≤ 1%	If loss ≤ 0,5%	If loss ≤ 0,1%
9110	<i>Luzulo Faegetum</i> beech forest	5	250	1.250	2.500
9130	<i>Asperulo Fagetum</i> beech forest	5	250	1.250	2.500
9170	Oak hornbeam forest	4	100	500	1.000
91E0*	Alluvial forest	4	100	500	1.000
6510	Lowland hay meadows	4	100	500	1.000
4030	European dry heaths	3	50	250	500
6430	<i>Hydrophilus</i> tall herb fringe comm.	3	50	250	500
6120*	Xeric sand calcareous grasslands	2	25	125	250
7110*	Active raised bogs	1	0	0	0
7220*	Petrifying springs with tufa formations	1	0	0	0

C. Thresholds for losses of habitats of animal species

The development of tolerable losses of the habitats of protected species was mainly based on the typical size of habitats of species and on a literature review, considering the home ranges, territory sizes and mobility of the individuals and the ranges of the populations. The species were grouped into 8 classes of average home ranges which were defined (according to Bink 1992) as: <1 ha, 4 ha, 16 ha, 64 ha, 260 ha, 10 km², 40 km², 160 km².

The 'orientation values' for the significance levels were then determined as 1/100 or 1/1000 of the class value depending on whether the specific class was chosen for individuals or populations, respectively. For the orientation values also a combination of relative and absolute levels for losses has to be considered.

Additionally, the specific habitat use of a species has to be taken into account to determine for which parts of habitats the orientation values may be used. For highly endangered species no orientation value is given; i.e., the threshold for a significant impact is considered to be anything greater than zero.

Regarding the 53 species from Annex II, no threshold values exist for 16 of them, nor for 20 of the 98 Birds Directive species. In other words, no loss is likely to be acceptable. All these conclusions/ figures/ thresholds are intended for guidance purposes only. This means that a case-by-case approach for each appropriate assessment is still required.

D: Advantages of the standards

Since its publication, the guidance document has been successfully tested in the German courts and is now applied across the country. Based on more than ten years of experience, several advantages of this approach can be identified:

- More transparency and objectivity, a clear assessment framework for the assessment of significant adverse effects on integrity.
- Rules for the appropriate assessment are clear for everyone (proponent, consultancies, competent authority, nature conservation authority, judges/courts and public).
- Standards are guaranteeing the quality of the assessments.
- The approach might also be useful for other impacts (regarding the gradual losses).
- Provides more legal and planning certainty.

For more information regarding the development or the usage in practice and case law, see:

Lambrecht H., Trautner J. (2007): Fachinformationssystem und Fachkonventionen zur Bestimmung der Erheblichkeit im Rahmen der FFH-VP — Endbericht zum Teil Fachkonventionen, Schlusstand Juni 2007. (Expert information system and rules for significance assessment in the context of the appropriate assessment — Final report part Expert rules, final version June 2007. In German.)
<https://www.bfn.de/themen/planung/eingriffe/ffh-vertraeglichkeitspruefung.html>

Bernotat, D. (2013): Appropriate Assessment: Standards of significance for more planning certainty. Presentation on Jaspers seminar on nature protection, Brussels, 10.04.2013.
<http://www.jaspersnetwork.org/download/attachments/13205585/Appropriate%20assessment%20standards%20-%20Germany.pdf?version=1&modificationDate=1400316957000&api=v2>.

Germany - Criteria for the assessment of mortality of wild animals in the context of projects and operations

A classification system for the importance of anthropogenic mortality on the species level was developed in Germany between 2008 and 2016. This system takes into account parameters related to population biology and nature conservation status.

First, a **Population Biology Sensitivity Index** (PSI) was developed based on parameters such as mortality rate, longevity, age of first reproduction, reproductive rate, national population size and population trend. For most parameters, measured values were translated into a scoring system reflecting the vulnerability to anthropogenic mortality starting with high vulnerability (1 point) and ending with low vulnerability (9 points).

A **Conservation Value Index** (NWI) was also created. This index takes into consideration the parameters such as 'status on the National Red List', 'abundance in Germany', 'population condition' (according to the Natura 2000 system) and 'national responsibility for the species'.

To help with carrying out species-specific assessments, both indices (PSI and NWI) were aggregated in a matrix resulting in an **Index of Mortality Sensitivity** (MGI). This index facilitates the assessment of a loss of an individual on the whole population. It allows one to detect which of the species (depending on how rare, threatened and sensitive they are) the loss of only few individuals has to be considered as significant in the context of the assessments. The MGI also allows the identification of those abundant species, which do not require a more detailed consideration regarding a project-related mortality risk, at least when only a few individuals are concerned.

In addition to the indexes, the authorities also developed instructions on how to apply the MGI in the framework of planning and impact assessment. In planning and permitting processes, risks of collision or mortality need to be considered on a project-specific basis. For instance, the mortality risk for birds from wind turbines, power lines (collision and electrocution) and traffic routes (roads and railroads) does not only differ among species, but can also depend on the type of project. The same applies to bats.

Therefore in the second step, for each species the mortality risk related to specific project types was divided into four classes for birds (collision at power lines, electrocution at medium voltage masts, collision with cars and wind turbines) and two classes for bats (collision with cars and wind turbines). This evaluation is based on an extensive literature review regarding the numbers of animals killed by each project type in Germany and Europe, as well as on knowledge about biology and behaviour of the species (e.g. mobility, home range size, flight altitude, flight behaviour, manoeuvrability, speed of locomotion, body size, wing span or vision), on published estimates of experts (including published national and international guidelines) and on own estimates. When interpreting statistics of casualties from different projects, the abundance of the respective species was also considered.

Subsequently, the mortality risk related to specific project types was combined with the general mortality sensitivity (MGI) in the form of an **index of mortality sensitivity related to specific project types** (vMGI).

To further illustrate this, a 'high collision risk' with power lines, wind turbines or roads does not automatically mean a 'significantly increased mortality risk' (*sensu* conservation laws) in species which show a natural mortality of 50-60%. More drastic examples are insects (e.g. many butterflies and dragonflies), which show a high collision risk on roads, but of which 100% of the imagines naturally die each year anyway. Those animals are adapted to high losses in their whole autecology (high natural mortality, low longevity, high reproductive rate, large population size). Thus, for short-lived species, certain anthropogenic mortality risks resulting from infrastructure are much less significant than for long-living species with low natural mortality and reproduction (k-strategists). Using the MGI-method, these autecological aspects and differences are considered in the evaluation of project-specific mortality risks.

Finally, each individual case has to be assessed in terms of the potential conflict of the project with the number of the individuals of the affected species. For this purpose a 'constellation specific risk' (KSR) is applied. The evaluation of this risk is based on area-specific information and project parameters.

In summary, the Index of Sensitivity to Mortality (MGI) cannot replace the assessment of mortality in each individual case. Instead, the differentiated classifications help to objectify the assessment of mortality risks, for example in the context of the Impact Mitigation Regulation (under the German Federal Nature Conservation Act) or the provisions of Art. 6 (appropriate assessment) and Art. 12 (species protection) of the Habitats Directive, or the provisions of the Environmental Liability Directive. The aim of the method is to provide a standardized way of assessing the impact of species mortality, and thus to increase objectivity and transparency of impact assessments.

BERNOTAT, D. & DIERSCHKE, V. (2016): Übergeordnete Kriterien zur Bewertung der Mortalität wildlebender Tiere im Rahmen von Projekten und Eingriffen. 3. Fassung – Stand 20.09.2016. – Leipzig (Bundesamt für Naturschutz), 460 S.

<https://www.bfn.de/themen/planung/eingriffe/besonderer-artenschutz/toetungsverbot.html>

Italy. National Guidelines for assessments in accordance with Article 6(3) and (4) of the Habitats Directive

Italy has recently published national guidelines, which describe the procedures for the screening, the appropriate assessment and the implementation of derogations, in accordance with Article 6(3)-(4) of the Habitats Directive.

The document was prepared by a working group formed by representatives of national and regional authorities and public administrations competent in the field of impact assessment. It takes into account the suggestions received during the Fitness Check and the update of the guidance on Article 6 by the Commission.

The guidelines are aimed at harmonising at national level the implementation of Article 6(3)-(4). They promote the inclusion of plans, programmes, projects, interventions and activities (P/P/P/I/A), not only plans and projects, in the procedure. A 'screening format' is provided in order to ensure a uniform approach at this stage and the use of standard evaluation criteria at the national level. A 'developer format' has also been prepared for the presentation of the relevant information on the P/P/P/I/A. With regard to the appropriate assessment, the guidelines contain detailed specifications on the contents and the information to consider, specific provisions and elements for the study and for the qualitative and quantitative analysis of the significance of the effects on Natura 2000 sites.

Concerning the derogation pursuant to Article 6(4), the guidelines address the evaluation of alternative solutions in a dedicated chapter. The guidelines emphasise that this evaluation remains formally, and in all cases, a pre-requisite to allow the exemption procedure provided for by Article 6(4), although in it is believed that, within the framework of an appropriate assessment, it should also provide the possibility of directing the proposal towards solutions with a lower environmental impact.

The guidelines also describe the criteria for verifying the imperative reasons of overriding public interest (IROPI), the methods for identifying and implementing appropriate compensation measures, as well as clarifications relating to their verification and the notification process to the European Commission by filling in the appropriate form. On compensation measures, minimum compensation ratios are proposed as follows: 2: 1 ratio for priority habitats and / or species of Community interest (also valid for habitats of priority species); 1.5: 1 ratio for habitats and / or species of community interest (also valid for species habitats); 1: 1 ratio for additional habitats, species or species habitats.

<https://www.gazzettaufficiale.it/eli/gu/2019/12/28/303/sg/pdf>

**ASSESSMENT OF SIGNIFICANCE OF EFFECTS ON THE NATURA 2000 SITE
(PART OF THE SCREENING FORMAT INCLUDED IN NATIONAL GUIDELINES IN ITALY)**

1. HABITATS OF COMMUNITY INTEREST

Habitats of Community interest (Annex I HD) concerned by the proposal:

-
-

Possible loss of habitats of Community interest:

- Habitat code:
- *repeat for each habitat involved*

- | | |
|-----------------------------|------------------------------------|
| <input type="checkbox"/> No | <input type="checkbox"/> Yes |
| | <input type="checkbox"/> Permanent |
| | <input type="checkbox"/> Temporary |

Possible fragmentation of habitats of community interest: - Habitat code: - <i>repeat for each habitat involved</i>	<input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary
2. SPECIES AND HABITAT OF SPECIES OF COMMUNITY INTEREST		
Species of Community interest (Annex II HD and Art.4 BD) concerned by the proposal: <ul style="list-style-type: none"> • • 		
Possible disturbance of species of Community interest: - Species: - <i>repeat for each species involved</i>	<input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary
Possible direct / indirect loss of species of Community interest <i>(repeat for each species involved):</i> - Species: - Number of individuals, pairs,...from SDF	<input type="checkbox"/> No	<input type="checkbox"/> Yes Estimate (<i>no. of individuals, pairs...</i>) lost
Possible loss / fragmentation of species' habitats: - Species: - Type of species' habitat: <i>(repeat for each habitat of species involved)</i>	<input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary
3. CUMULATIVE IMPACT ASSESSMENT		
Can other P/P/I/A cause significant cumulative and / or synergetic effects on the Natura 2000 site concerned jointly with the proposal in question? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, indicate which other P/P/I/A and describe how they will significantly affect the site, together with the proposal under consideration:		
4. INDIRECT EFFECTS EVALUATION		
Can the proposal have indirect effects on the Natura 2000 site? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, indicate which ones:		
5. ASSESSMENT SYNTHESIS		
The P/P/P/I/A can cause direct, indirect, and/or cumulative effects, even potential, on habitats of community interest? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, why:		
The P/P/P/I/A can cause direct, indirect, and / or cumulative effects, even potential, on species of community interest? <input type="checkbox"/> Yes <input type="checkbox"/> No		

If Yes, why:
.....
.....

The P/P/P/I/A can **cause direct, indirect, and / or cumulative, even potential, impacts on the integrity of the Natura 2000 site (s)?**

Yes No

If Yes, why:
.....
.....
.....
.....

6. CONCLUSION OF THE SCREENING

Conclusions and motivations (reasoned opinion):
.....
.....
.....
.....

7. RESULT OF THE SCREENING:

<input type="checkbox"/>	Positive: No need for Appropriate Assessment	<input type="checkbox"/>	Negative: Appropriate Assessment is required
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Source: Guidelines for evaluation of effects on Natura 2000 sites (Italy). *Linee guida nazionali per la valutazione di incidenza (VInCA). Direttiva 92/43/CEE "Habitat" art. 6, paragrafi 3 e 4.* Gazzetta Ufficiale della Repubblica Italiana, 2019.

1.3 Appropriate assessment of a national electricity programme in Ireland – assessment of cumulative effects

The Grid25 Implementation Programme (the IP) is a plan for the development of the electricity network in Ireland until 2025. It aims to ensure a long-term sustainable and reliable supply from renewable and conventional sources to the cities, towns, villages, homes and other key markets where the power is required.

The main provisions of the IP until 2025 include:

- upgrading 2,530 km of the existing network and
- building 828 km of new infrastructure.

As a high-level strategy, the Grid25 IP, provides an indication of the types of infrastructural requirements likely to arise in the future, given government policy on renewable energy and predicted growth in demand, but does not prescribe exactly the location of infrastructure such as generation plants or transformers, or the route of transmission lines. Instead, it provides an indicative overview of the general approach proposed for the future development of the grid.

The programme has been subject to an **appropriate assessment** according to Article 6(3) of the Habitats Directive. As the IP applies to the entire Republic of Ireland and may have

synergistic effects beyond Ireland's borders, a screening exercise was carried out on all Natura 2000 sites within the Republic and Northern Ireland.

A preliminary examination of the types of effects that may arise as a result of the IP was carried out. The type of impact depends on the type of infrastructure constructed, including:

- Site based infrastructure e.g. electricity generating stations, transformers, etc.
- Linear infrastructure e.g. overhead lines, underground cables.

Impacts that could potentially occur through the implementation of the IP were categorised under a number of headings:

- loss/reduction of habitat area;
- disturbance to key species;
- habitat type or species habitat fragmentation;
- reduction in species density;
- changes in key indicators of conservation value such as decrease in water quality and quantity.

Due to the nature of the IP, impacts were described in a general manner but were specifically identified for any of the sites that were screened in. The screening process identified approximately 340 SACs and 97 SPAs that could potentially be either directly or indirectly impacted through the development of infrastructure proposed by the IP. A further 18 SACs and 2 SPAs in Northern Ireland may be affected by cross border interconnectors.

The appropriate assessment then considered the potential adverse effects occurring as a result of the application of the IP alone or in-combination with other plans, programmes and/or projects. The assessment of cumulative impacts was firstly addressed in order to make sure that they were properly considered when assessing the potential significant effects of the IP.

Assessment of cumulative effects

The assessment identified the principal plans, policies and programmes (at national, regional and county level) that are likely to give rise to developments causing effects that could combine or interact with those of the IP for Grid25. This analysis required knowledge of the likely effects of all plans/developments under consideration, and despite the limitations in the information about the likely effects of some plans, it could identify the interactions resulting in cumulative impacts for some plans. A few examples are provided in the table below.

Policy, plan, programme or projects	Interactions resulting in cumulative impacts
<i>National (example)</i>	
Transport 21 Programme	<p>Potential in-combination impacts may arise where new or upgraded transport corridors are constructed in line with new or upgraded transmission infrastructure. Impacts may include the following:</p> <ul style="list-style-type: none"> • Habitat loss and disturbance. All terrestrial based designated sites may be affected, depending on where infrastructure and transmission lines are located/routed. • Alterations to local hydrology and effect on adjacent habitats. Groundwater dependant habitats such as fens, turloughs and bogs are most likely to be affected. • Sediment pollution and associated hydrological impacts where surface water dependant species and habitats are affected. Salmon, lamprey, white clawed crayfish and freshwater pearl mussel may potentially be affected. • Contamination of surface and groundwater with pollutants (e.g. fuels,

	<p>lubricants, concrete) during construction. Salmon, lamprey, white clawed crayfish and freshwater pearl mussel may potentially be affected.</p> <ul style="list-style-type: none"> • Disturbance of species during construction and maintenance activities. Species that may be affected include nesting and overwintering birds in coastal and freshwater SPAs; otters and kingfishers, where development occurs adjacent to or crossing watercourses; bats, where development affects woodlands, hedgerows or roosting sites. • Risk of bird strike where overhead transmission cables are installed near SPAs or across bird flight lines.
<i>Regional (example)</i>	
Regional waste management plans	<p>Potential in-combination impacts may arise where new waste infrastructure and new transmission infrastructure occur together within or in close proximity to a designated site.</p> <p>Likely significant impacts are as previously outlined.</p>
<i>County (example)</i>	
County and town development plans	<p>Potential in-combination impacts may arise where there is a requirement to provide for new infrastructure through implementation of county and town development plans. Provision of related transmission infrastructure may result in likely significant impacts as previously described.</p>
<i>Projects</i>	
Offshore energy generation projects	<p>In-combination impacts may arise at the interface between offshore and on shore infrastructure. Impacts that may occur include:</p> <ul style="list-style-type: none"> • Habitat loss and disturbance. All terrestrial based designated sites may be affected, depending on where infrastructure and transmission lines are located/routed. Loss of habitats may also occur in the littoral and coastal zones. Habitat loss will be grater where underground cables are installed. • Sediment pollution and associated hydrological impacts where surface water dependant species and habitats are affected. Salmon, lamprey, white clawed crayfish and freshwater pearl mussel may potentially be affected. • Contamination of surface and groundwater with pollutants (e.g. fuels, lubricants, concrete) during construction. Salmon, lamprey, white clawed crayfish and freshwater pearl mussel may potentially be affected. • Disturbance of species during construction and maintenance activities. Species that may be affected include nesting and overwintering birds in coastal and freshwater SPAs; marine mammals, where interconnection between offshore and onshore infrastructure occurs; otters and kingfishers, where development occurs adjacent to or crossing watercourses; bats, where development affects woodlands, hedgerows or roosting sites.

The assessment concluded that development of a new energy generation infrastructure when combined with other economic developments will potentially lead to habitat and/or species loss, species/population fragmentation and changes in water quality/quality. These potential conflicts could be mitigated by measures outlined later in the appropriate assessment and they would be addressed by lower tier environmental assessment, as appropriate.

Assessment of potential significant effects and proposal of mitigation measures

As previously mentioned, the Grid25 Implementation Programme provides an indicative overview of the general approach proposed for the future development of the grid and does not prescribe exactly the location of infrastructure. As such, this has the effect of limiting the level of assessment that can be undertaken and means that the assessment of potential

significant effects has to be made in general terms. A general examination of impacts and sensitivities was therefore carried out. The assessment identified the types of impacts on the habitats and species affected that could be envisaged for the following main components of the IP:

- overhead transmission lines;
- underground cables;
- construction of new substations and extension of existing substations;
- reinforcement of the transmission system in the regions.

For the latter, the main sensitivities in each region were identified and recommendations to avoid the expected impacts were outlined (e.g. avoidance of certain particularly sensitive areas in the reinforcement of the transmission system in the region, encourage to locate substations and overhead routes on urban land, or in areas that contain dense corridors of anciently established settlement while avoiding more sensitive upland interiors etc.).

The assessment also identified the impacts for a number of network developments that have progressed to detailed design stage (although the location and route of these projects is not fixed yet) on the Natura 2000 sites located in their proximity and therefore having potential to be affected by the individual projects in question.

Due to the strategic nature of the Grid25 IP, it could not be conclusively stated at that stage that the IP will not adversely affect the integrity of the Natura 2000 network. Therefore, mitigation measures were proposed to ensure that significant impacts are avoided.

Two levels of mitigation measures have been proposed. The first level of measures will guide the strategic approach to mitigating impacts and the second level of mitigation measures are more impact specific and shall be applied where significant impacts are identified following project level environmental impact assessment (EIA) and appropriate assessment.

General mitigation measures are outlined for the main categories of impact identified and for the main habitats and species potentially affected. For instance, regarding general habitat loss and disturbance, avoidance and mitigation measures are described for bogs and peatland areas, birds, bats, otters, water dependant habitats and species, freshwater pearl mussel, other protected species, etc.

The consideration of mitigation measures will prioritise the avoidance of impacts in the first place and mitigate impacts where these cannot be avoided. In addition, all lower level projects arising through the implementation of the IP will themselves be subject to appropriate assessment when further details of design and location are known.

Having incorporated mitigation measures, it is considered that the Grid25 Implementation Programme will not have a significant adverse effect on the integrity of the Natura 2000 network. Nevertheless, all the projects to be implemented in the framework of the IP will be screened and subject to appropriate assessment as required.

Source: Natura Impact Statement in support of the Appropriate Assessment of the Grid25 implementation programme. Available at:

<https://www.eirgridgroup.com/site-files/library/EirGrid/Natura-Impact-Statement-in-Support-of-the-Appropriate-Assessment-of-the-Grid25-Implementation-Plan.pdf>

2. IMPERATIVE REASONS OF OVERRIDING PUBLIC INTEREST (IROPI)

2.1 Examples of various types of IROPI and their justification

Article 6(4) of the Habitats Directive:

“If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for *imperative reasons of overriding public interest*, including those of *a social or economic nature*, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.

Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to *human health or public safety*, to *beneficial consequences of primary importance for the environment* or, *further to an opinion from the Commission, to other imperative reasons of overriding public interest.*”

I. IROPI of a social or economic nature (site with non-priority target features)

Project: Proposed Upgrade to an existing Water Treatment Plant at Lough Talt, Co. Sligo (Ireland, 2019).

Project and Natura 2000 site description:

Since the 1950s, an upland lake Lough Talt, part of SAC IE0000633 Lough Hoe Bog, has served as a source of water for a population of more than 13 000 inhabitants via a single Water Treatment Plant (WTP). An upgrade of the WTP is required to provide a consistent supply of potable drinking water, matching the current abstraction levels. The hydrogeological investigations concluded that, during periods of extended dry weather, the lake abstraction operation contributes to a significant drop in lake level which has an adverse impact on the habitat of the Geyer's Whorl Snail *Vertigo geyeri*. To avoid this impact it would be necessary for the abstraction to be reduced by approximately 50% during a significant portion of the year.

Although *V. geyeri* has not been recorded at the site since 2007, its population is considered important at the country scale and has to be restored. The proposed conservation measures will improve the habitat conditions through a system of irrigation and rewetting. They do not however mitigate for the historical loss of the species due to abstraction pressures. The proposed project will continue to change the abiotic and biotic dynamics that define the structure and function of *V. geyeri* population, thus causing delays in achieving its conservation objective.

Alternative solutions:

Seven alternatives including the “do nothing” scenario (option zero) were assessed according to their health, social, and ecological impacts. The only available option in the immediate short term is to provide upgraded treatment at the existing WTP site to improve the treatment barrier against parasitic protozoans and the exceedances in environmental pollutants trihalomethanes (THM). This upgrade will provide water that is safe to drink to the local population for approximately 7-10 years while a long-term sustainable solution is developed and implemented.

IROPI justification:

Provide safe and reliable drinking water to a population of more than 13 000.

Proposed compensatory measures:

The restoration of a sustainable population of Geyer's whorl snail to the SAC is proposed through a detailed programme of temporary irrigation of the key calcareous fen habitat until the abstraction pressure is removed from the site. In conjunction with the irrigation management, ongoing monitoring of the irrigation system function and staged translocations of snails to the fen habitat are proposed over a four year period, starting with less sensitive species and culminating in the translocation of *Vertigo geyeri* from another SAC where it has a favourable conservation condition.

II. Justification of IROPI: protection of lives and property

Project: Implementation of a dirigible flood protection polder Rösä (Germany, 2014).

Project and Natura 2000 site description:

The aim of the project is to upgrade the current flood protection structures of a dry polder next to the village of Rösä up to HQ₂₀₀ (the peak level at maximum discharge occurring once within a 200-year period) protection level. Main elements of the project consist of: about 7.5 km of restored dykes 5 m wide at the bottom and 3 m wide on the crest; new influx and discharge installations; and two flood protection walls 1,225 m and 310 m long. The current dykes ensure protection against HQ₁₀₀ only, but due to unpredictable extreme weather events, floods exceeding this level are likely and could seriously damage settlements and industry located downstream of the current polder.

The project is to be constructed within the SAC DE4340301 Muldeau oberhalb Pouch, affecting the following target habitat types through direct land take: 6430 - 604 m² (0.17 % of the area of this habitat type within the SAC); 6510 - 40,665 m² (20.33 %); 91F0: 456 m² (0.46 %). According to the official German methodology for assessing impact significance, all these impacts are considered "significant" (including those with apparently negligible land take, as many factors other than the mere percentage of land take are considered).

Alternative solutions:

No project alternative exists due to the character of the river valley; however, the search for alternatives resulted in many smaller adjustments being made to the project which would reduce its adverse effects (such as e.g. change in dyke slope inclination enabling reestablishment of grasslands, tiny relocations of dykes and walls, etc.).

IROPI justification:

Construction of the polder dyke is necessary in order to increase the dyke's safety as well as protect the population from floods. Therefore, the main IROPI justification is linked to the public safety and human health.

Proposed compensatory measures:

Habitat type 6430 will be created inside the SAC in a ratio 1 : 8. Habitat type 6510 will be re-created on the slopes of the dyke mostly outside the SAC in a ratio 1 : 5. The lost forest habitats 91F0 (having a quality "D") will be compensated by planting of a new forest with the same species composition in a ratio 1 : 4 as well as planting a tree "mantle" along existing forests in a ratio 1 : 16, all mostly outside the site. To maintain the network coherence, the SAC area will be increased to embrace the locations of compensatory measures.

III. Justification of IROPI: other reasons including social and economic ones

Project: Public works for a high-speed train between Tours and Bordeaux (France, 2013).

Project and Natura 2000 site description:

The project is for a new high-speed train line between Tours and Bordeaux. This includes the laying of a new line (302 km) and its connection to existing railway lines (38 km), as well as lateral pathways, basins, electricity facilities, over- and underpasses (for agriculture paths, fauna passages), working platforms, and ancillary facilities.

The route is to cross four SPAs (FR5412006 Vallée de la Charente en amont d'Angoulême, FR5412018 Plaines du Mirebelais et du Neuvilleois, FR5412021 Plaines de Villefagnan, FR5412022 Plaine de la Mothe St Héray Lezay) and two SACs (FR5402010 Vallée du Lary et du Palais, FR5400405 Coteaux calcaires laine de la Mothe St Héray Lezay). Adverse effects consist of the likely destruction of 1.9 ha of wet meadows and 4.2 ha of secondary habitats important for conservation of the Corncrake *Crex crex*. It will also directly affect 185 ha and indirectly (disturbance) affect 2,947 ha of potential habitats of Little Bustard *Tetrax tetrax*; lead to the destruction of 2 ha of habitat (wet heathland) of False Ringlet *Coenonympha oedippus*; as well as the destruction of 0.35 ha of one of the best occurrences of 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) and fragment the local connectivity of this habitat.

Alternative solutions:

Three alternatives for the route were assessed. With regard to the high-speed line, there is not much flexibility to introduce partial shifts of the route; and it was concluded that the chosen alternative has the least adverse impacts on Natura 2000 sites while being still technically feasible.

IROPI justification:

With 340 km of new line between Tours and Bordeaux, this high-speed line (TGV) is one of the most important railway projects on a European scale. It will create an efficient link on the Atlantic coast to meet the growing demand for mobility. With a commercial speed of 300 km/h, it will make it easier for travelers to travel and improve service to towns on the route. Barely more than two hours to connect Paris to Bordeaux, the competitive advantage of rail transport over air transport becomes decisive, thus promoting modal shift. This project will play an essential role in strengthening the trans-European axis connecting, via the Atlantic coast, the regions of N and E Europe to the SW of France and the Iberian Peninsula.

It will also boost the activity of the territories concerned: improving competitiveness and expanding markets for regional businesses; facilitation of travel for activities requiring high mobility, a major argument for a new establishment or relocation from Paris to the regions; development of tourism, in particular short-term stays; creation of jobs, during construction and operation; development major urban projects. For travelers, the train is a fast and comfortable means of transport, 34 times safer than the car. A TGV can transport up to 1000 passengers at 300 km/h. It is also an energy-efficient and space-saving mode of travel.

The high-speed train has a key role to play in reducing the energy bill and developing regions sustainably. It produces 20 times less greenhouse gasses than the car and 45 times less than the plane. It does not generate any local atmospheric pollution: electric trains provide 90% of the traffic. For the community, the cost of transporting passengers or goods in terms of pollution, accidents and climatic impacts is 4.5 times higher by road than by rail.

Proposed compensatory measures:

35 ha were purchased for the Corncrake to compensate the 6.1 ha of habitat loss. For Little bustard, the compensation scheme in three SPAs will comprise 702 ha: 160 ha will be purchased and 542 ha will have a management contract with measures in line with the management plans for SPAs. A monitoring programme is foreseen and a private body will participate in a reintroduction programme. 5 ha of land with the habitat type 6210 will be purchased (compensation 1 : 14).

IV. Justification of IROPI: other reasons further to an opinion from the Commission

Project: Deepening the Danube waterway between Straubing and Vilshofen; section Straubing-Deggendorf (Germany, 2019).

Project and Natura 2000 site description:

On Danube River between Straubing – Deggendorf (about 40 km), the conditions for navigation during the low water periods (draught 2 m) were never put in place, contrary to the section up- (2.90 m) and downstream (2.70 m) making this a bottleneck. The draught of 2.50 m can only be reached on middle water, which is available for only 144 days/year. The aim of the project is to overcome this obstacle to navigation, and to build improved flood protection measures. The final design will result in the deepening of the riverbed by 20 cm to -2.20 m, as compared to today's low water stand of -2.00 m. It will also further deepen the riverbed by 45 cm to -2.65 m. in a 9.7 km long section. Meanwhile the flood protection measures should provide protection against Q_{100} (the maximum discharge occurring once within a 100-year period).

The project section of Straubing-Vilshofen has the highest number of accidents due to the current profile of the ship fairway. The study puts the number of accidents at 39 per year (2004), increasing to 55.4 by 2025 due to the increasing volume of transport.

The project will affect a large SAC (4,720 ha) DE7142301 Donauauen zwischen Straubing und Vilshofen. Likely significant impacts, both direct, indirect and in-combination, were identified on 7 fish species, 1 butterfly species and 1 mollusc species and 7 habitat types, including the priority 91E0* alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*.

Alternative solutions:

In addition to the selected project design, four other alternatives as well as zero alternative were thoroughly assessed. None of the alternatives would give rise to a significantly lower impact than the chosen option because they would either cover a larger area of the SAC than the proposed project or would significantly affect a larger habitat for protected species.

IROPI justification:

a) Meeting the objective of national and European transport policy: Deepening the Danube between Straubing and Vilshofen closes a gap in the existing waterway connection linking the North Sea to the Black Sea *via* the Rhine, the Main, the Main-Danube Canal and the Danube. Under the EU Regulation No 1315/2013 on Union guidelines for the development of the trans-European transport network, the Danube federal waterway forms part of the core network of the European TEN-T network, and is of high economic interest for Europe.

b) Better connectivity for inland ports: The project will improve navigation conditions in the project area when water levels in the Danube are low. Unlike other modes of transport, shipping on the Danube still has free transport capacity, which could be used more efficiently by deepening the ship fairway.

c) Safety and ease of navigation: The implementation of the project could reduce the frequency of accidents from anticipated 55.4 to 42.4 per year, despite the increase in traffic.

d) Predicted increase in transport: The freight volume is expected to increase from 7.0 million tonnes/year (2007) to 9.7 million tonnes/year by 2025 or to increase by 50% to 10.5 million tonnes/year.

Proposed compensatory measures:

All habitat types affected, including the priority one 91E0*, will be compensated by creation of new habitats at a ratio of 3:1. For *Maculinea nausithous*, new grassland habitats will be created, as well as new habitats for *Unio crassus* in a form of new river islands and river branches (the latter serving also the affected fish species). Long-term monitoring and conservation management of new habitats is envisaged.

Commission's opinion (full version published at:

https://ec.europa.eu/environment/nature/natura2000/management/opinion_en.htm):

3. COMPENSATORY MEASURES

3.1 Examples of compensatory measures under Article 6(4)

Plan or project	Long distance railway line between two nodes and renewal of a 100 yr old bridge in Baden-Württemberg (Germany). The project includes surface alignments mitigated with tunneling.
Natura 2000 site affected	The site affected is DE 7220-311 „Glemswald und Stuttgarter Bucht“ (3,813 ha, with 31 sub-fragmented areas).
Impact	Impacts result from land take and subsequent habitat loss and degradation including mature tree felling. The assets of Community interest affected are: <i>Species:</i> population of Habitats Directive Annex II priority species <i>Osmoderma eremita</i> in favourable conservation status. <i>Habitat:</i> 6510 Lowland hay meadows (<i>Alopecurus pratensis</i> , <i>Sanguisorba officinalis</i>)
Compensatory measures	- Designation as Natura 2000 of 50 ha of land near a national nature reserve (<i>Neuweiler Viehweide</i>). - Management of the designated area targeted to <i>*Osmoderma eremita</i> by regenerating the essential ecological features required for the species' survival. The managed designated land connects two existing core protected sites that were isolated, with ecological border effect on the priority species. The outcome of targeted management is expected to retain favourable conservation status for the priority species. <i>Source: C(2018) 466 final 30.01.2018</i>

Plan or project	Road B173 between localities in Bavaria (Germany)
Natura 2000 site affected	The site affected is DE 5833-371 Maintal von Theisau bis Lichtenfels SCI (872 ha), largely coincident with an SPA DE 5931-471.02 Täler von Oberem Main, Unterer Rodach und Steinach. The SPA area is more affected in area than the SCI. The site's functionality is linked to 9 other Natura 2000 sites in the Continental biogeographic region. The sites consist of floodplain habitats with stagnant and running waters.
Impact	The road alignment intersects the Natura 2000 network and impacts through land take (habitat loss) and disturbance/degradation to habitats and species during construction and operation of the road, mainly as a result of nitrogen deposition. In detail: Annex I habitat types affected by the project: 6, of which one priority (91E0*). Annex II species affected: 5, of which 3 also Annex IV.

	<p>Significant impacts on:</p> <p>Habitats Directive Annex I habitat types 3150, 6430, 6510, and 91E0*</p> <p>Birds Directive Annex I bird species <i>Circus aeruginosus</i></p>
Compensatory measures	<p>Proportionality in compensation to balance habitat loss within the overall coherence of the Natura 2000 network has been decided at:</p> <p>1:3 ratio for habitat types 3150, 6430 and 91E0*</p> <p>1:6 for 6510.</p> <p>Enlargement of the SCI by 2 ha.</p> <p>Creation of <i>reedbed</i> habitat area for <i>Circus aeruginosus</i>.</p> <p>Financial plan and monitoring and evaluation plan.</p> <p>The European Commission makes this compensation plan conditional on:</p> <ul style="list-style-type: none"> - Implementation according to the work plan presented to the European Commission by the German authorities. - Monitoring and evaluation reports according to the work plan presented as agreed by the German authorities. The report must be made available to the public on the internet. - The results of monitoring and evaluation for the Natura 2000 network must be taken into account in order to foresee evaluation and review of the compensatory measures and of the mitigation measures link to the project. - Germany fulfils the commitments concerning the Natura 2000 network for site DE 5833 - 371 as per Article 4(4) and Article 6(1) of the Habitats Directive. <p><i>Source: C(2015) 9085 final 18.12.2015</i></p>

Plan or project/	<p><i>National Road B 252/B 62; 17.56 km of new road to bypass the municipalities Münchhausen, Wetter and Lahntal (Hesse).</i></p> <p>North-south connection between the regions Paderborn-Korbach and Marburg-Gießen. The National Road B 62 links Biedenkopf via Cölbe to the long-distance axes Gießen-Marburg-Kassel.</p> <p>The new alignment entails resizing and relocation of public infrastructure, such as communal roads, energy grids, a railway and a gas pipeline.</p>
Natura 2000 site affected	<p>The scope of the appropriate assessment included several Natura 2000 sites. The conclusions were:</p> <p>Site DE 5017-305 „Lahnhänge zwischen Biedenkopf und Marburg“: not adversely affected by the project.</p> <p>Site DE 5018-401 „Burgwald“: positively affected by the project because the project will be further away from the site and will reduce</p>

	<p>most of the traffic load of the existing National Road B 252.</p> <p>Site DE 5118-302 "Obere Lahn und Wetschaft mit Nebengewässern": there will be significant impacts on this site.</p>
Impact	<p>The route alignment of the National Road B 252/B 62 intersects the Natura 2000 network at three locations. The direct pressures are habitat loss and habitat degradation; there are barrier effects and nitrogen deposition that have general effects on habitats and species through habitat disturbance and degradation. The assets subject to significant consequences out of these impacts are:</p> <ul style="list-style-type: none"> - Habitats Directive Annex I habitat types <p>91E0* (alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i>)</p> <p>3260 (water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation)</p> <ul style="list-style-type: none"> - Habitats Directive Annex II species <p><i>Cottus gobio</i> and <i>Lampetra planeri</i></p> <p>All Annex I habitat types and other habitats of species are subject to significant impact as a result of increased levels of nitrogen deposition. Increased sediment loads have adverse significant effects on all water-living species. The most significant damage, direct and indirect, is on habitat type 91E0* through fertilizing and acidifying by nitrogen gases.</p>
Compensatory measures	<p>Loss of habitat type 91E0* alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i>:</p> <p>Compensation of the direct impacts: ratio 1:3.</p> <p>Compensation of the indirect impacts: ratio 1:2.</p> <p>Source: C(2012) 3392 of 29.5.2012</p>

Plan or project/	<p><i>Deepening and widening of the ship fairway of the river Main at the sections Wipfeld, Garstadt and Schweinfurt (Bavaria/Germany)</i></p> <p>The main purpose of the project is to widen the existing fairway of the river Main between the floodgates Wipfeld (milestone km 316.12) and Ottendorf (milestone km 345.29) from 36 m to 40 m and to deepen the river's waterway from currently 2.50 m to 2.90 m. This will increase the physical manoeuvrability of boats.</p>
Impact	<p>The priority habitat type of Community interest 91E0* Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> and the habitat type 6510 Lowland hay meadows would be particularly affected. Both habitat types would be damaged directly involving a surface loss of 9.460 m² for 91E0* and 6.440 m² for 6510.</p>
Natura 2000 site affected	<p>The scope of the appropriate assessment included a sub-network of the Natura 2000 network neighbouring the watercourse. The AA conclusions per Natura 2000 site were:</p> <p>Site 'Maintal zwischen Schweinfurt und Dettelbach' (SPA): no</p>

	<p>significant effects.</p> <p>Site 'Mainaue zwischen Grafenrheinfeld und Kitzingen' (SCI): significant effects.</p> <p>Site 'Maintal bei Sennfeld und Weyer'(SCI): significant effects.</p> <p>The sites significantly affected have a dimension of 1,706 ha.</p>
Compensatory measures	<p>Proportionality was agreed at:</p> <p>Habitat type 6510: proportion of almost 1:7</p> <p>Habitat type 91E0*: proportion of almost 1:4</p> <p>In the latter case, the proportions take into account that the habitat re-creation period may last several decades.</p> <p>The compensation area is local, since the ecological functionality required is found nearby.</p> <p>The affected Natura 2000 sites will be enlarged by the proposed compensatory measures and subsequently designated and notified by the Member State. In total, 10 measures are foreseen in the flooding area Schweinfurt and Wipfeld.</p>

3.2 Time-related aspects of compensation measures

<p>Germany - Time-related aspects of compensation measures (extract from LANA 2004)⁴</p> <p>Measures to ensure coherence should, if technically feasible, already be executed and functional when the damage occurs. According to the EU Commission, the recreation of a suitable habitat for the affected species can only be accepted as a measure to ensure coherence if 'the created site is available at the time when the affected site loses its natural value' (EUROPEAN COMMISSION 2000:49).</p> <p>There is therefore broad consensus among experts that the measures to ensure coherence should be carried out already prior to the implementation of the project (start of construction), or at least prior to the commencement of the considerable impairment of the relevant Natura 2000 site, so that they are ready to use and as functional as possible at the time of the damage occurring (e.g. BAUMANN et al. 1999:470, AG FFH VERTRÄGLICHKEITSPRÜFUNG 1999:72, SSYMANK et al. 1998:39, WEYRICH 1999:1704, EUROPEAN COMMISSION 2000:49, SCHRÖDTER 2001:17, FGSV 2002:18, BERNOTAT 2003:25).</p> <p>In this regard, the Federal Administrative Court (judgement of 17.05.2002) also refers to the danger of a 'time-lag in functionality'. The EUROPEAN COMMISSION (2000:50) requires that the result of the measure must as a rule be operational when damage occurs on the site connected with the project, unless it can be proven that this simultaneity is not necessary to ensure the site's contribution to the Natura 2000 network.</p> <p>Certainly, these time-lags in functionality can only – if at all – be tolerated if it can be expected with certainty that the measures carried out will result in the required compensation and hence in the restoration of coherence (RAMSAUER 2000:608).</p>
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⁴ LANA / Permanent LANA committee "intervention regulation" (2004): Technical requirements for measures to ensure coherence pursuant to Article 34 para. 5 Federal Nature Conservation Act (BNatSchG). – Annex to TOP 4.6 of the 87th LANA meeting on 04/05 March 2004.

In each individual case, therefore, there must be an examination into whether, in the context of the ecological coherence of Natura 2000, these time-lags in functionality can be tolerated or not. The following describes the case constellations of this (case A: complete functionality of the measures for ensuring coherence necessary at the time of the impairment; case B: at the time of the impairment, full functionality of the measures not necessary).

If time-lags in functionality cannot be reconciled with the respective conservation objective, recognition as a measure for ensuring coherence must be withheld.

Case A: Complete functionality of the measures for ensuring coherence necessary at the time of the impairment.

The habitat type or the habitats needed by a species must be fully functional before the impairment occurs, especially if there is a danger of losing a relevant (partial) population of a species protected under Annex 2 of the FFH Directive or Annex 1 of the Birds Directive. In such cases, only measures implemented in advance which are already effective at the time of the intervention can be considered as sufficient measures for ensuring coherence. For reasons of nature conservation a time-lag in functionality cannot be tolerated.

Essentially, the length of time habitats of species need to develop depends, on the one hand, on the local development periods of the relevant habitats and, on the other, on the accessibility of areas in the framework of the necessary repopulation. The potential of species for repopulation is determined among others by the spatial distribution of the species, the occurrence of concrete centres of distribution and source populations in the geographical vicinity, species-specific mobility and ability to spread, and unhampered accessibility of the areas.

If an intervention affects heavily isolated occurrences of a species or species with little mobility, there is a very low potential for the habitat created by coherence measures to be newly populated or repopulated from outside. Here it is of key significance that the habitats are developed in advance as close as possible to the affected population and that the same individuals or populations can already populate the habitat prior to the intervention as an escape habitat. Repopulating the habitat at a later period can often no longer be absolutely guaranteed following the considerable impairment of the population.

In the case of habitat types, development times for the habitats are determined by their regeneration capacity and by the abiotic site conditions to be created and by colonisation by characteristic plant and animal species (cf e.g. RIECKEN et al. 1994:21ff). Full functionality in the sense of Case A can only be achieved for habitat types which have shorter development times.

Advance implementation of measures

In order, in case A situations, to remain able to act, it must already be possible to finance and implement the measures before final authorisation of the project (...). In practice, there is e.g. the possibility here of securing the area already before the planning approval decision by preparatory land acquisition or early land acquisition. In principle, step-by-step procedures offer more favourable conditions for this.

Because of the special legal security requirement of the later approval decision, in the preliminary procedure of an FFH impact assessment (e.g. for the line determinations or in spatial planning procedures), the main decisions on the subject, location and extent of the measures for ensuring coherence must often already be taken at the draft stage. (cf. e.g. KÜSTER 2001). If the structure of the project remains the same, these will not essentially

change in the course of the project authorisation; the measures can be implemented in advance as soon as the fundamental achievability of the project becomes apparent.

Instruments for stocking areas and compensation measures which have already been established in other contexts also show that an earlier implementation of the measures is possible and can be put into practice from a planning point of view (cf. e.g. AMMERMANN et al. 1998, BUNZEL & BÖHME 2002). As a supplementary possibility here, agreements could also be made between the project operator and the operator of a land reserve. These agreements would allow for the measures carried out to be taken over by the operator of the land reserve and financially compensated in the unlikely event that the project could not, for some unforeseen reason, be realised after all.

The following example of the planning of the A 26 also shows that, in addition to the possibility of preparatory land acquisition, it is also appropriate to use the planning and approval stages in phases of building for the advance implementation of measures.

Example: Advance implementation of measures in the case of the A 26

The bird protection area impacted by the project is affected and impaired by several connected construction sections. During authorisation of the current building phase, measures for ensuring coherence are already being established which in part are only due to impairments arising out of the two following phases, for which no planning approval decision has yet been made. To allow measures for the creation of new habitats to develop their effectiveness, verification that the extent of the measures as required under the appropriate assessment has been laid down must already be provided in the planning approval for this building phase. Implementation of the measures is in this way brought forward by around five years, thus avoiding a time lag between the impairment and the compensatory function.

The prerequisites for this are the availability of land areas on the scale designated necessary by experts, agreement of management restrictions for the farmers working there and where necessary the availability of funds for advance compensation paid well before the approval decision for the following building phase. The chances of such framework conditions for implementation occurring must certainly be interpreted on a case-by-case basis. In the A 26 project, such conditions are clearly present. A preparatory land acquisition made it possible to secure the areas. The approach selected in this procedure is welcome, as it prevents the threat of temporary functional deficiencies and ensures the uninterrupted coherence of the Natura 2000 network during the entire project without causing any delays to the project.

Where necessary, it is also possible to have separate planning approval for the measures to ensure coherence, which provides for their earlier implementation. Of course, the project promoters always have the option of voluntarily implementing the measures early at their own cost. If implemented well in advance, in the context of the provisions on intervention, measures for ensuring coherence could have a positive impact on the extent of compensation and replacement measures, since extra costs incurred for temporary functional deficiencies might be reduced.

Public sector project operators and project operators carrying out many or major projects, possibly in step-by-step approval procedures, have the largest scope for action here and therefore bear a special responsibility.

Case B: at the time of the impairment, full functionality of the measures to secure coherence not necessary

The type of habitat or the habitat of the species must not necessarily be fully functional prior to the onset of the considerable impairment. For certain technical reasons, which must be stated comprehensively, a time-lag in functionality is justifiable up to the full effectiveness of

the measure and must be compensated for by implementing the measures on a correspondingly larger scale. It is proven that the site's contribution to the Natura 2000 network is also guaranteed in this way.

In these cases too, advance implementation of the measures should be aimed for. Experience gained from implementing other nature conservation instruments allow the conclusion to be drawn that under certain circumstances, time-lags in functionality can be countered by increasing the scale of the measure. This is based among others on the fact that time lags can largely be offset in this way for certain habitat functions.

Based on the time-lag in functionality, larger land additions should be selected, since while the measures (e.g. planting) cannot fulfil the functions adequately at the beginning, a significantly larger stock can nevertheless achieve approximately the same level of compensation overall. The larger scale of the measure also increases prediction security with regard to functional aspects.

Example: *By crossing a flowing water body, a road project leads to considerable impairment of the habitat *91E0 'ash-alder woods along running waters'. The loss of the habitat is to be compensated at other sites which are suitable in location and function by measures to ensure coherence; this will be achieved through appropriate planting and restoration of the habitat type. Since other accompanying measures, such as the development of old growth forests in existing similar habitat types are not possible, it is planned to implement the measure on an area many times larger, in order to offset the time-lag in functionality. It is a question here of a habitat type characterised by trees and which has a correspondingly long development time which cannot be accomplished even with an advanced implementation of measures.*

Nevertheless, this measure should in principle be recognised as a measure to ensure coherence provided that no specific aspects of the individual case speak against this.

4 LINKS BETWEEN ENVIRONMENTAL ASSESSMENT PROCEDURES: AA, EIA, SEA

4.1 Comparison of procedures under appropriate assessment (AA), EIA and SEA

	AA	EIA	SEA
<i>Which types of developments are targeted?</i>	Any plan or project which - either individually or in combination with other plans/projects - is likely to have a significant effect on a Natura 2000 site (excluding plans or projects directly connected to the conservation management of the site).	All projects listed in Annex I. For projects listed in Annex II the need for an EIA shall be determined on a case-by-case basis or through thresholds or criteria set by Member States (taking into account criteria in Annex III).	All plans and programmes , or amendments thereof, which: (a) are subject to preparation and/or adoption by an authority and national, regional and local level; (b) are required by legislative, regulatory or administrative provisions; (c) are prepared for agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land use and set the framework for future development consent of projects listed in Annexes I and II to the EIA Directive; or which, in view of the likely effect on sites, have been determined to require an assessment pursuant to Article 6 or 7 of Directive 92/43/EEC.
<i>What impacts need to be assessed relevant to nature?</i>	The assessment should be made in view of the site's conservation objectives (which relate to the species/ habitat types significantly present on the site). The impacts should be assessed to determine whether or not they will adversely affect the integrity of the site concerned.	Direct and indirect, secondary, cumulative, transboundary, short, medium and long-term, permanent and temporary, positive and negative significant effects on population and human health; biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC; land, soil, water, air and climate and landscape; material assets, cultural heritage and the landscape; and the interaction between these factors.	Likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors.

<p><i>Who is responsible for the assessment?</i></p>	<p>It is the responsibility of the competent authority to ensure that the AA is carried out. In that context the developer may be required to carry out all necessary studies and to provide all necessary information to the competent authority in order to enable it to take a fully informed decision. In so doing the competent authority may also collect relevant information from other sources as appropriate.</p>	<p>The developer supplies the necessary information to be duly taken into account, together with the results of consultations, by the competent authority issuing the development consent.</p>	<p>The SEA Directive leaves Member States with a wide margin of discretion in assigning the responsible authorities for SEA. These could either be the authorities in charge of making a plan/programme, the environmental authorities, who are consulted <i>ex lege</i> on the scope and level of detail of the information that must be included in the environmental report, as well as the draft plan/programme and the accompanying environmental report; or the authorities specifically entrusted with running the SEA procedure.</p>
<p><i>Are the public/ other authorities consulted?</i></p>	<p>The Habitats Directive does not contain an explicit obligation to obtain the opinion of the general public when authorising plans or projects requiring an appropriate assessment. According to the wording of Article 6(3) this has only to be done if it is 'considered appropriate'. However, the Court has clarified that, on the basis of the requirements of the Aarhus Convention, the public concerned, including recognised environmental NGOs, has the right to participate in the authorisation procedure (C-243/15 paragraph 49). This right involves in particular, 'the right to participate "effectively during the environmental decision-making" by submitting, "in writing or, as appropriate, at a public hearing or inquiry with the applicant, any comments, information,</p>	<p>Compulsory – consultation before adoption of the development proposal.</p> <p>Member States must take the measures necessary to ensure that the authorities likely to be concerned by the project (including environmental, local and regional authorities) are given an opportunity to express their opinion on the request for development consent. The same principles apply for consulting the public concerned.</p> <p>In case of likely significant effects on the environment in another Member State, the relevant authorities and the public in that Member State must be consulted.</p>	<p>Compulsory – consultation before adoption of the plan or programme.</p> <p>Member States must consult the authorities, which by reason of their specific environmental responsibilities are likely to be concerned by the environmental effects of implementing a plan/programme. The public, including the public affected or likely to be affected or having an interest in, the decision-making, including NGOs, should be consulted.</p> <p>The authorities and the public shall be given an early and effective opportunity within appropriate time frames to express their opinion on the draft plan or programme and the accompanying environmental report before the adoption of the plan or programme or its submission to the legislative procedure.</p> <p>In case of likely significant effects on the environment in another Member State, the relevant authorities and the public in that Member State must be consulted.</p>

	analyses or opinions that it considers relevant to the proposed activity” (C-243/15, paragraph 46).		
<i>How binding are the outcomes of the assessment?</i>	<p>Binding.</p> <p>The competent authorities may agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site.</p>	<p>The results of the consultations and the information gathered as part of the EIA ‘shall be duly taken into account’ in the development consent procedure.</p> <p>The decision to grant development consent shall incorporate at least the reasoned conclusion (i.e. the EIA decision) and any environmental conditions attached to the decision.</p>	<p>The environmental report and the opinions expressed ‘shall be taken into account’ during the preparation of the plan or programme and before its adoption or submission to the legislative procedure.</p>

5 STRATEGIC PLANNING - ASSESSMENT OF PLANS

5.1 Example: Planning of highways in Austria

Highways Planning in Austria – Screening and appropriate assessment

The planning of highways in Austria follows three different project phases, which determine the need of an appropriate assessment iteratively.

Phase 1 (“*Voruntersuchung*“ or “*Korridoruntersuchung*”) identifies potential conflict-bearing zones within the investigated area, to exclude corridors with intolerable effects and high risk of not being approved, respectively. Special attention is given to protected areas, including Natura 2000 areas. Results of phase 1 are a preliminary selection of possible variations of the project and the investigation programme for phase 2. The requirement of carrying out an appropriate assessment is normally recognized in this stage (screening phase).

Phase 2 (“*Vorprojekt*“ or “*Varianteuntersuchung*”) identifies the sensitivity of habitats and species in the different possible variations of the project and predicts the possible effects of these on the environment. According to internal national requirements (RVS*⁵) detailed surveys regarding an appropriate assessment are required in this phase. This intends to guarantee the earliest possible consideration of species and habitats under EU protection. At the end of that phase one possible variation of the project is chosen.

Phase 3 (“*Einreichprojekt*”) contains the planning for the approval procedures. The potential effects of the chosen route on the environment are further specified and possible negative effects are mitigated by appropriate measures. The goal is an environmentally responsible, without impacts on site’s conservation objectives or protected species and legally approvable project plan.

The advantages of early screening are the timely recognition of necessary legal procedures, in this case of an appropriate assessment or – in other cases – of a derogation procedure. Procedural risks are thus recognized early enough and avoidance strategies can be implemented.

For the localization of potential areas of conflict, the standard data forms of the Natura 2000 sites, together with data from the national atlas of breeding birds, regional and local habitat surveys (as far as they are available and current) are used. The evaluation of the current situation and the possible effects also considers the Red Lists (national or provincial), data from the Article 17 report, national and provincial regulations regarding nationally protected species and other data available in the region. Additional monitoring data can be used where available, e.g. from species conservation projects or LIFE projects implemented in the region.

Source: case study provided by ASFINAG

⁵ RVS=Guidelines and Regulations for the Planning, Construction and Maintenance of Roadways (RVS) www.fsv.at

5.2 Example: Strategic planning of new hydropower developments in the Danube

Strategic planning of new hydropower station in the Danube basin

Guiding Principles on Sustainable Hydropower development in the Danube Basin were developed by the International Commission for the Protection of the Danube River (ICPDR) and were adopted by the Danube countries in June 2013. The guiding principles were drafted as part of a broad participative process involving representatives from energy and environment administrations, the hydropower sector, NGOs and the scientific community.

They recommend a strategic planning approach for the development of new hydropower stations. This approach should be based on a two-level assessment (including lists of recommended criteria), the national/regional assessment followed by the project specific assessment.

A first step identifies river stretches where hydropower development is forbidden by national or regional legislation/agreements (exclusion zones). Criteria, which are in place in some European countries for this category include: protected areas, high ecological value stretches, reference stretches, catchment size.

A recommended list for national/regional criteria include the following:

- *Naturalness*. Status of river stretches/water body in relation to the deviation from type-specific natural conditions regarding hydrology, morphology, biological and sediment continuity as well as biological communities.
- *Status of water body with regard to rarity and ecological value*. Rarity of the river type, ecological status of a river stretch and sensitivity.
- *Specific ecological structure and function of the river stretch also with regard to the whole catchment/sub-basin and in relation to ecosystems services*. E.g. particular habitats for sensitive/valuable fish species or other biological quality elements in the riverine ecology (e.g. red list species).
- *Conservation areas and protected sites*. E.g. Natura 2000 areas, Ramsar sites, UNESCO Biosphere Reserves, National, Regional and Nature Parks, etc.

In a second step, all other stretches will be assessed using the assessment matrix and classification scheme.

As many river stretches and floodplains in the Danube basin are protected under the Birds and Habitats Directives, the provisions and requirements according to the management and protection of Natura 2000 sites and the need for an appropriate assessment of impact of possible projects in the concerned areas need to be taken into account.

The national/regional assessment is an instrument to help administrations direct new hydropower stations to those areas where minimum effects on the environment are expected. Danube-basin-wide or trans-border aspects need to be taken into account where appropriate. The national/regional assessment benefits both the environment and water sector but also the hydropower sector since it increases the predictability of the decision-making process and makes transparent where licences for new projects are likely to be issued.

While the assessment at national/regional level is more of a general nature, the project specific assessment classifying the appropriateness of river stretches for potential hydropower use provides a more detailed and in-depth assessment of the benefits and effects of a concrete project. This helps in assessing whether a project is appropriately tailored to a specific location. The project-specific assessment is carried out in response to an application

for issuing the licence for a new hydropower plant and therefore depends on the specific project design.

Mitigation measures then have to be set to minimise the negative effects of hydropower installations on aquatic ecosystems. Ensuring fish migration and ecological flows are priority measures for maintaining and improving the ecological status of waters.

Other mitigation measures such as improving sediment management, minimising the negative effects of artificial water level fluctuations (hydropeaking), maintaining groundwater conditions or restoring type specific habitats and riparian zones are important for riverine ecology and wetlands directly depending on aquatic ecosystems. These measures should therefore be considered in the project design, taking into account cost-effectiveness and security of electricity supply.

The guiding principles acknowledge the application of the procedure laid down in Article 6(3) and 6(4) of the Habitats Directive when new hydropower developments might affect Natura 2000 site.

<https://www.icpdr.org/main/activities-projects/hydropower>

5.3 Example: Spatial plan for offshore wind farms and grid connections in the German North Sea EEZ

Spatial Offshore Grid Plan for the German Exclusive Economic Zone of the North Sea

The Offshore Grid Plan defines the offshore wind farms which are suitable for collective grid connections. Along with the stipulation of the necessary cable routes and sites for the offshore wind farms' grid connections, the Offshore Grid Plan contains the cable routes for interconnectors and descriptions of possible cross connections.

Priority areas have been designated for shipping, pipelines, and offshore wind energy production in German EEZ; other uses are prohibited in these areas unless they are compatible. In Natura 2000 sites wind turbines are not allowed. At the transition to the territorial sea and to the crossing of the traffic separation schemes submarine cables for the transport of power generated in the EEZ must be routed along designated cable corridors. With the establishment of the plan a SEA has been carried out.

To minimise possible negative impacts on the marine environment when laying pipelines and cables, the plan states that sensitive habitats should not be crossed during periods of high vulnerability of particular species.

Damage to or destruction of sandbanks, reefs and areas of benthic communities of conservation concern, which constitute particularly sensitive habitats are to be avoided during the laying and operation of pipelines and cables, and best environmental practices according to the OSPAR Convention are to be followed. The plan has also sought to overlap designation for pipeline and wind farm priority areas.

Planning principles such as maximum bundling of cables and avoiding routes through Natura 2000 sites are aimed at reducing the area needed for grid infrastructure and lowering potential impacts on the marine environment. The plan, which was subject to a SEA set out the capacity and expected timing of offshore grid connections to be built over the next 10 years.

https://www.bsh.de/EN/TOPICS/Offshore/Maritime_spatial_planning/maritime_spatial_planning_node.html