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The role of science in environmental adjudication

Questionnaire

The Court of Justice of the European Union

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Introduction

Science and technology enter environmental adjudication in various forms ranging from competing science-based arguments to scientific evidence. These invite highly technical assessment from adjudicators and fundamentally impact the dynamic of the judicial process. Different national jurisdictions adopt divergent approaches to interpret such scientific input and employ different methods for *inter alia* scientific fact-finding, standards of review, as well as the standard and burden of proof.

This questionnaire seeks to map and better understand the various judicial tools with which different jurisdictions handle and engage with the techno-scientific aspects of environmental disputes. Our aim is two-fold: to appraise the differences and similarities in the judicial engagement with science of different national jurisdictions, and to evaluate whether such divergences in the treatment of science allow for preserving adequate judicial control over the resolution of scientific disputes on the one hand, and ensure uniform application of EU environmental law on the other hand.

Please answer the following questions by briefly illustrating them with specific examples from your practice where you deem appropriate.

Questions

1) Mandate of the court to review techno-scientific matters

- a)** In what forms do judges gather scientific advice (e.g. party-appointed experts, court-appointed experts, in-house experts, expert judges (legal adjudicators

¹ All views provided in this questionnaire are strictly personal and in no way represent the Court of Justice.

having a formal training in a certain scientific field), and/or expert assessors (scientific experts sitting with judges during the deliberation without the right to vote)? What is the task of these actors?

Article 25 of the statute of the Court of Justice allows the Court to entrust any individual, body, authority, committee or other organisation it chooses with the task of giving an expert opinion. Articles 70 et seq. of the rules of procedure of the Court (RP-C) and Articles 96 et seq. of the rules of procedure of the General Court (RP-GC) provide for details. Nevertheless, it appears that this option is of extremely limited practical relevance: The only cases that I am aware of are invitations extended to the European Data Protection Supervisor to participate in the hearings conducted in some preliminary reference procedures concerning data protection [cf. Opinion of Advocate General Cruz Villalón in Joined Cases Digital Rights Ireland and Others (C-293/12 and C-594/12, EU:C:2013:845, para 22)]. However, in these cases the EDPS does not provide scientific expertise on specific questions, but rather acts as *amicus curiae*.

In general, it is up to the parties to prove the scientific fact and hypotheses they rely on. In practice, they submit studies and/or – mostly in the case of EU institutions – they rely on broad discretion or a wide margin of appreciation that they enjoy if they need to conduct complex assessments [judgment of 18 July 2007, *Industrias Químicas del Vallés v Commission* (C-326/05 P, EU:C:2007:443, para 75)].

With regard to infringement proceedings under Article 258 and 260 TFEU a different standard could be imagined. However, in practice the facts are mostly undisputed because the Commission mostly relies on documented evidence from the Member State in question.

With regard to the preliminary reference procedure, it is for the Member State court to appreciate the facts, including scientific questions, under its own rules.

- b)** What forms of scientific references are acceptable as bases for making persuasive scientific findings (E.g. expert evidence, standards issued by competent international or national organizations, regulatory trends of other states, etc.)?

Scientific evidence and its form is of very limited relevance to the practice of EU courts.

The wide discretion/margin of appreciation granted to EU institutions results in them making the relevant scientific findings. EU courts will verify whether the relevant procedural rules have been complied with, whether the facts admitted by the Commission have been accurately stated and whether there has been a manifest error of appraisal or a misuse of powers (judgment of 18 July 2007, *Industrias Químicas del Vallés v Commission* (C-326/05 P, EU:C:2007:443, para 76)).

Scientific evidence could become relevant for the appreciation of the statement of facts and for the examination, whether there has been a manifest error.

Nevertheless, it is unlikely that any possible error would be considered manifest if it was necessary to rely on specific expressions of expertise to identify them.

Moreover, the Court recognises that the discretion of the institution also relates, to a certain extent, to the finding of facts underlying their action (judgment of 21 June 2018, Poland v Parliament and Council (C-5/16, EU:C:2018:483, para 151). This jurisprudence is probably based on the consideration that the establishment of specific facts and their relevance as well as scientific theories underpinning a decision are another area requiring complex assessments.

- c)** Can a higher court (e.g. appeal court, supreme court) in your jurisdiction investigate scientific questions, and/or review the scientific findings of lower courts? If so, to what extent?

Questions of fact, including scientific facts, are reserved for the General Court, deciding in first instance. However, on appeal the Court will assess whether the clear sense of the evidence was distorted (judgment of 18 July 2007, *Industrias Químicas del Vallés v Commission* (C-326/05 P, EU:C:2007:443, para 60)). Moreover, the Court of Justice will assess whether the General Court correctly identified the margin of appreciation that the EU institutions enjoy. If the control exercised by the General Court was too strict (or too lenient), the Court of Justice will annul the judgment under appeal (judgment of 19. Juli 2012, *Council/Zhejiang Xinan Chemical Industrial Group*, C-337/09 P, EU:C:2012:471, para 589).

- d)** How would you handle evidence derived from geospatial (GIS) technologies (such as satellite images, aerial photography, drones, etc.) (see for instance the use of geospatial intelligence in the *Bialowieza* case, C-441/17 R)? In what type of cases and in what ways do you utilize them? How can they promote compliance monitoring and a more effective enforcement?

Such technologies were first employed in the context of agricultural cases to verify whether claims about cultured land were accurate. However, as in the *Bialowieza* case, the use of such data was not initiated by the Court, but by the Commission and the accuracy of the data obtained usually is not questioned by the relevant Member State authorities.

2) When do you gather expert advice?

- a)** How do you distinguish between technical/scientific questions and legal questions in fact-intensive disputes, where science and law are closely interlinked in the underlying legal rules and concepts?

With regard to fact-intensive disputes, the doctrine of the wide discretion / margin of appreciation allows the EU courts to rely mostly on the findings of the institutions.

- b)** Are there any types of cases and/or questions where gathering scientific evidence is mandatory under domestic law?

As far as I am aware, no cases arise in the EU courts where the court would need to gather scientific evidence. Conversely, many decisions of EU institutions require scientific evidence. They can be challenged in court, but scientific findings will mostly come under the wide margin of discretion.

- c)** To what extent are judges allowed to investigate the scientific dimensions of cases *ex officio*?

It is unlikely that an EU judge would be confronted with a manifest error of appreciation that is not raised by a party. In any case, the EU courts will only examine questions of competence and, sometimes, essential procedural issues such as the duty to give reasons *ex officio*, but normally they will not raise questions of substance *ex officio*.

3) Rules of expert appointment

- a)** What are the selection criteria of experts in your jurisdiction (e.g. having requisite training, being impartial, independent from the party, being enrolled on government-issued lists, etc.)?

Under Article 25 of the Statute, the Court can ask any individual, body, authority, committee or other organization for scientific advice. As this power is not employed in practice, with the exception of the EDPS, no further rules or conventions have been developed.

- b)** Whether and on what basis can a party challenge the appointment of a party-appointed/court-appointed/in-house expert?

Under Article 72 RP-C and Article 99 RP-GC, parties can object to an expert on the ground that he is not a competent or proper person to act as an expert or for any other reason. In the absence of practice it is unclear which objections would be accepted.

- c)** To what extent and in what ways do judges in your jurisdiction exercise control over the scientific fact-finding process (e.g. by defining precisely the scope of factual controversy needed to be addressed by experts)?

In the absence of judicial practice no response is appropriate.

4) Evidentiary issues: standard and burden of proof

- a) What is the applicable standard of proof for environmental cases in administrative, civil and criminal law (e.g. preponderance of the evidence, beyond reasonable doubt, etc.)? Is it set in domestic law, or are judges free to adjust the standard as they deem fit?

In general, the EU courts will only invalidate a scientific fact-finding by a competent authority in case of a manifest error of appreciation.

- b) What are the rules of allocating the burden of proof in science-intensive cases (maybe give one or two examples to indicate what is meant by science-intensive cases)?

In general, the burden of proof in EU courts is put on the party that relies on specific facts, at least if these facts are disputed. This rule is not formally modified for science-intensive cases. However, such cases, eg. the application of the REACH regulation or decisions by the office for the protection of plant varieties, typically involve complex assessments and therefore give rise to broad discretion of the competent authority. This means that the authority will not need to formally prove the facts underlying the decision, but only that all the relevant information was taken into account. Conversely, any substantial challenge to such findings will need to be based on evidence that demonstrates that the finding is vitiated by a manifest error of appreciation.

5) Rules of evaluating expert evidence: standard (intensity) of review

- a) How do you choose between two competing or conflicting pieces of expert evidence?

Under the standard of broad discretion expert evidence supporting the competent authority will have more weight and normally override opposing evidence. The latter evidence needs to be much more convincing to persevere.

- b) Could you review the scientific assessments and justifications made by a competent domestic authority (by conducting a *de novo* review of the evidence)? Or is your judicial review deferential towards the scientific claims of domestic authorities?

The standard of broad discretion obviously is deferential.

- c) What is the applicable standard of review to scrutinize the scientific assessments of domestic authorities (e.g. scrutinizing 'manifest errors', or the reasonableness/consistency/coherence of their scientific conclusions, or interrogating the scientific validity and factual correctness of the evidence, or

reviewing the procedural aspects of science-based decision-making process at hand)?

See above – typically the EU courts apply the manifest error test to findings of EU institutions.

6) The role of science and technology in the courtroom – an overall assessment

- a)** To what extent do you consider the difficulties of scientific fact-finding to be a defining challenge in environmental adjudication compared to other difficulties?

The standard of broad discretion minimises the challenge of scientific fact-finding for EU courts.

- b)** Do you consider the domestic rules of expert involvement to be appropriate to secure judicial control/monopoly over deciding environmental disputes? Or do you think judges should exercise greater control over the scientific fact-finding process?

The standard of broad discretion is justified by the technical and scientific competence that the competent authority enjoys (or should enjoy). In comparison, the EU judiciary cannot develop similar competence in the relevant fields. Moreover, the competent authorities (should) enjoy stronger democratic legitimacy because, in contrast to independent courts, they are supervised by Parliament and because their task was given to them by the legislator.

However, the EU judiciary could verify more strictly whether all the relevant scientific knowledge was taken into account without encroaching onto the powers of the competent authority. Currently, EU courts extend a certain discretion in this regard because the appreciation of knowledge as being relevant requires a complex assessment.

- c)** Do you consider the limits of curial supervision of fact-intensive cases are appropriate for providing effective judicial protection and promoting uniform application of EU law?

Effective judicial protection controls whether the law has been respected. Of course, if a decision is based on incorrect facts the practical outcome will not be in accordance with the law's objectives. However, where fact-finding is difficult there is no guarantee that stricter judicial control would help to improve factual correctness. Therefore, at least the EU courts are not supposed to put themselves into the position of the competent authority.

Nevertheless, the principle of procedural autonomy allows Member States to provide for stricter judicial review of fact-finding. Resulting differences in the application of EU law are a necessary consequence of procedural autonomy.

- d)** Do you think it is necessary and if so, in what ways, to improve the scientific engagement of judges (E.g. would you improve the procedural rules of scientific fact-finding, enhance the scientific competence of the judges through training and capacity building, or develop new legal tests to review contradicting scientific evidence, etc.)?

Stronger scientific engagement of the EU judiciary would be very difficult to achieve in the context of the existing structures. At least for the Court of Justice the challenges resulting from the preliminary references by Member States courts, which are almost exclusively legal in nature, prevent the build-up of scientific expertise.

7) Case study

How would you delineate applicable questions of law and science in the following cases, what types of expert evidence would be gathered, and how would they be evaluated?

Choose one of the following cases, according to your field of expertise:

- a)** The case brought before you is about a proposed artificial groundwater production plant that might impact a nearby Natura 2000 -site, whose conservation values are contingent on groundwater levels, thus being of concern when authorizing artificial groundwater undertaking outside the protected area. The Natura 2000 site has e.g. the region's largest sinkhole that has wetland at the bottom of it, and is thus connected with the groundwater formations. It also has coniferous forests on glaciofluvial eskers, and the site is generally described as having calcareous fens and springfens (all listed as Natura 2000 habitats). Up until now the plant has gained the required approvals. The groundwater model used in the proposed undertaking's plans modeled the water currents in the ground. As typical of such models, it was more uncertain in the rims of the area than in its centre. Coincidentally, these rims of the area also included especially sensitive and small wetland formation. The administrative authority, in its statement of reasons, discussed the role of the precautionary principle and scientific uncertainty, noting that neither formed as such a reason to not allow the venture. They only obliged the administration to establish such permit conditions that they adequately curbed the harmful impact. However, an environmental NGO brings a claim against the permit arguing that the permit should not have been granted at all. They claim that since the scientific assessments presented before the administrative authority did not remove all justified scientific uncertainty on the undertaking's consequences, and since there are thus relevant risk of detrimental impact to the Natura 2000 -site, the plan should not be allowed to proceed.

Under Article 6(3) of the Habitats Directive, the authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned. The Court's jurisprudence on this provision, taken in isolation from Article 6(4), is not based on the standards laid out above.

The first issue in this regard is the concept of the integrity of a site. The Court has found that in order for the integrity of a site as a natural habitat not to be adversely affected, the site needs to be maintained at a favourable conservation status. This entails the lasting preservation of the constitutive characteristics of the site that are connected to the presence of a natural habitat type whose preservation was the objective justifying the designation of that site in the list of sites of Community interest [judgments of 11 April 2013, *Sweetman and Others* (C-258/11, EU:C:2013:220, para 39), and of 17 April 2018, *Commission v Poland (Białowieża Forest)* (C-441/17, EU:C:2018:255, para 116)]. If formation of sensitive wetlands at the rims of the groundwater model is part of the conservation objectives, any risk to them would be relevant for the integrity of the site.

As regards ascertaining that the project will not adversely affect the integrity of the site, we arrive at a point where complex assessments under uncertainty are necessary. Because our knowledge is limited, it may be possible to develop more or less substantiated hypotheses about effects, but in many cases there will also be reasonable scientific doubts or even equally substantiated alternative hypotheses. Under the general system, this uncertainty should indicate wide discretion of the competent authorities.

The Court, however, took a different turn and focussed on the condition that the authorities need to *ascertain* or make sure that the integrity of the site would not be affected. So, where doubt remains as to the absence of adverse effects on the integrity of the site, the competent authority will have to refuse authorisation [judgment of 7 September 2004, *Waddenvereniging and Vogelbeschermingsvereniging* (C-127/02, EU:C:2004:482, para 57)]. As regards the concept of doubt, the Court specifies that reasonable scientific doubt must be excluded [judgment of 7 September 2004, *Waddenvereniging and Vogelbeschermingsvereniging* (C-127/02, EU:C:2004:482, para 59)]. The instrument to achieve this is, of course, the appropriate assessment, and therefore the Court highlights that it must contain complete, precise and definitive findings capable of removing all reasonable scientific doubt as to the effects of the works proposed on the protected site concerned [judgments of 11 April 2013, *Sweetman and Others* (C-258/11, EU:C:2013:220, para 44), and of 17 April 2018, *Commission v Poland (Białowieża Forest)* (C-441/17, EU:C:2018:255, para 114)]. This criterion and its interpretation by the Court integrate a strongly precautionary approach into the rules on site protection [(judgment of 7 September 2004, *Waddenvereniging and Vogelbeschermingsvereniging* (C-127/02, EU:C:2004:482, para 58)]. Though there is some residual scope for discretion with regard to the question whether doubt can be qualified as reasonable this discretion is extremely limited if the jurisprudence of the Court is taken seriously. As soon as doubt is not completely hypothetical, but is a plausible

reading of scientific evidence it should be considered reasonable. And courts should be able to verify whether any doubt crosses this threshold.

As described in the case study, it appears unlikely that the groundwater model can remove all reasonable doubt. Although, in principle, a permit is possible if harmful impacts can be mitigated by appropriate measures an abstract obligation to adequately curb harmful impacts would not remove all reasonable doubt that the integrity of the site would be maintained. Therefore the permit appears to infringe Article 6(3) of the Habitats Directive. Whether Article 6(4) of the Habitats Directive would allow a permit does not seem to part of the case study.

- b)** The case brought before you is a case of illegal trade in birds protected under the EU CITES regulation Annex A (e.g. Red kite, Egyptian Vulture). Trade activities with respect to these birds are prohibited. There is an exception when one can prove that a specimen has been bred and born in captivity.

These birds can obtain a CITES-passport, which makes them marketable.

Through forgery of rings and breeder's declarations, the defendants obtained CITES-certificates for "captive-born and bred species", which allowed them to commercialise the birds in spite of the general prohibition to trade EU CITES Regulation Annex A species. A bird protection NGO becomes a party to the criminal proceedings and claims moral damages because of the loss of the birds. Would this be evaluated by an expert? If not, how would the court estimate the amount of the compensation?