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Adapting Hydropower to European Union Water Law: Flexible Governance versus Legal Effectiveness in Sweden and Finland

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Abstract

In both Sweden and Finland, water law has traditionally provided strong protection for hydropower operations by issuing permanent environmental licences. This national protection has started to erode as a result of the requirement of the European Union (EU) Water Framework Directive (WFD) for permit reviews to improve the ecological status of rivers. In the light of this dynamic between European and national frameworks, this article compares the Swedish and Finnish implementation of the WFD regarding existing hydropower operations. Whereas Sweden has adopted comprehensive legislative and policy reforms that embrace a systemic perspective on reconciling hydropower with the current societal and ecological circumstances, Finland has relied on bottom-up collaborative processes at the grassroots level. The article shows that both approaches are problematic in so far as they push the boundaries of proper implementation of the WFD and, by extension, the achievement of the ecological objectives of the WFD in waters affected by hydropower. Our comparison highlights tensions between EU law requirements for formal legal effectiveness in national implementation, and the WFD's aspirations for adaptive river basin-based governance.

Keywords: Water Framework Directive; Hydropower; Multilevel governance; Legal effectiveness; River basin governance

1. Introduction

In both Sweden and Finland, harnessing rivers for hydropower has historically constituted a major source of energy.¹ While the number of hydropower installations in the two

¹ A. Lindström & A. Ruud, 'Swedish Hydropower and the EU Water Framework Directive', Stockholm Environment Institute, Project Report 2017–01, Dec. 2017, p. 4 (Lindström & Ruud (2017a)); A. Lindström & A. Ruud, 'Whose Hydropower? From Conflictual Management into an Era of Reconciling Environmental Concerns: A Retake of Hydropower Governance towards Win-Win Solutions?' (2017) 9(7) *Sustainability*, pp. 1–18, at 3–5 (Lindström & Ruud (2017b)); N. Soininen et al., 'Bringing Back Ecological Flows: Migratory Fish, Hydropower and Legal Maladaptivity in the Governance of Finnish Rivers' (2018) 44(3) *Water International*, pp. 321–36, at 324–5.

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countries diverges significantly – with approximately 1,800 facilities in Sweden² and 700 in Finland³ – the history of hydropower development in both is remarkably similar. In search of economic development and increasing energy demand after the Second World War, water governance in both countries prioritized hydropower development over environmental conditions of river ecosystems. This is underlined in the environmental requirements – or lack thereof – in the permits granted for the facilities. These past priorities continue to shape the countries' hydropower sectors, as most of the facilities operating today date from that era, predating the enactment of modern environmental legislation.⁴

In recent decades, however, the ecological, economic, and societal considerations surrounding hydropower have changed dramatically. It has become clear that hydropower is a major contributor to the deterioration of aquatic ecosystems and the endangerment of migratory fish species, which also has negative societal impacts.⁵ Despite recent renewed interest in hydropower during the European Union's (EU) energy crisis,⁶ its role in the Swedish and Finnish energy systems has changed fundamentally. The relative share of hydropower in both countries has decreased in favour of other renewable energy sources and nuclear power.⁷ Moreover, within the hydropower sector, a distinction must be drawn between large operations, which have the capacity to balance frequency variations in the electricity grid,⁸ and smaller facilities, which typically lack this ability.⁹ Considering these developments, there is an urgent call for Sweden, Finland, and other EU Member States where the hydropower sector consists primarily of operations that have been constructed and permitted in the past,¹⁰ to

² Havs- och Vattenmyndigheten (Swedish Agency for Marine and Water Management), 'Towards Sustainable Hydropower in Sweden', 7 Aug. 2023, available at: <https://www.havochvatten.se/en/eu-and-international/towards-sustainable-hydropower-in-sweden.html>.

³ Vesiläkytöryhmän mietintö, luonnos hallituksen esitykseksi vesilain tarkistamiseksi, 31 Mar. 2023, p. 14, available at: <https://www.lausuntopalvelu.fi/FI/Proposal/Participation?proposalId=1dfa153c-b521-411b-b6f9-3bb9e99b377c>.

⁴ Lindström & Ruud (2017a), n. 1 above, p. 4; Soininen et al., n. 1 above, p. 322.

⁵ See A. Kuriqi et al., 'Ecological Impacts of Run-of-River Hydropower Plants: Current Status and Future Prospects on the Brink of Energy Transition' (2021) 142(C) *Renewable and Sustainable Energy Reviews*, pp. 1–17, at 4–11; Å. Össbo & P. Lantto, 'Colonial Tutelage and Industrial Colonialism: Reindeer Husbandry and Early 20th-Century Hydroelectric Development in Sweden' (2011) 36(3) *Scandinavian Journal of History*, pp. 324–48, at 336, 340.

⁶ European Commission, 'REPowerEU Plan', 18 May 2022, COM(2022) 230 final, pp. 6–11 (which highlights the importance of accelerating the role of renewable energy production; yet, hydropower is not mentioned explicitly).

⁷ Tilastokeskus (Statistics Finland), 'Sähkö ja lämmön tuotanto 2021', 2 Nov. 2022, available at: <https://www.stat.fi/julkaisu/cku28dfkw805d0b9922uxoyep>; Energimyndigheten (Swedish Energy Agency), 'Fortsatt hög Elproduktion och Elexport under 2021 Nyhetsarkiv', available at: <https://www.energimyndigheten.se/nyhetsarkiv/2022/fortsatt-hog-elproduktion-och-elexport-under-2021>. See more specifically Sections 3 and 4 below on the role of hydropower in energy production in Sweden and Finland.

⁸ This regulation contribution has taken on growing importance with the increase in intermittent power sources, such as wind and solar power, when other storage solutions such as batteries are still at a developmental phase: A. Iho et al., 'Rivers under Pressure: Interdisciplinary Feasibility Analysis of Sustainable Hydropower' (2022) 33(2) *Environmental Policy and Governance*, pp. 111–218, at 114–5.

⁹ Ibid.

¹⁰ See J.-M. Glachant et al., *Regimes for Granting Rights to Use Hydropower in Europe* (European University Institute, 2014), pp. 18–120, available at: https://cadmus.eui.eu/bitstream/handle/1814/33653/2014_RR_Hydropower.pdf.

adapt their hydropower policies to align with the present societal and ecological standards.

At the EU level, Directive 2000/60/EC establishing a Framework for Community Action in the Field of Water Policy, the Water Framework Directive (WFD) provides a legal obligation for greening the hydropower sector.¹¹ The Directive sets substantive objectives for rivers harnessed for power production that call for measures such as reducing barriers to fish migration and restoring ecological flows.¹² The WFD has relied heavily on regional and local implementation, and granted Member States discretion in designing appropriate national or local governance arrangements.¹³ This serves as a textbook example of the principle of subsidiarity articulated in Article 5(3) of the Treaty on European Union (TEU).¹⁴ The principle guides the use of the Union's legislative powers in areas where the EU and the Member States have shared legislative competence.¹⁵ In parallel, particularly in the field of EU environmental law, the principle has also been recognized as guiding regulatory design and allocation of societal power. It requires public power to be attributed to the level of government (local, regional, national) where it can most effectively be exercised, and that decisions are taken as closely as possible to the citizen.¹⁶ This includes a strong focus on accounting for regional and local conditions in the legal formulation of, and Member States' autonomy in national legislative, institutional, and administrative arrangements in pursuit of implementing EU law.¹⁷ Moreover, the WFD includes flexible exemption clauses to

¹¹ [2000] OJ L 327/1.

¹² Arts 11(3)(e)–(i), 11(5) WFD. See also Common Implementation Strategy (CIS) for the Water Framework Directive, *Ecological Flows in the Implementation of the Water Framework Directive*, Guidance Document No. 31 (European Union, 2015) (WFD CIS 2015); Soininen et al., n. 1 above, pp. 326–8.

¹³ The Directive's take on water policies is that they should be formulated in regional river basin districts involving wide stakeholder involvement in the management process: Recital 13, Arts 13, 14 WFD; see generally A.L. Dimitrova & B. Steunenbergh, 'The Search for Convergence of National Policies in the European Union: An Impossible Quest?' (2000) 1(2) *European Union Politics*, pp. 201–26, at 207–8.

¹⁴ Lisbon (Portugal), 13 Dec. 2007, in force 1 Dec. 2009, available at: <http://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A12012M%2FTXT>.

¹⁵ In the policy fields that fall within the shared competence, both the Union and the Member States may legislate in the area, but Member States are to exercise their competence only to the extent that the Union has not exercised, or has decided to cease exercising its competence: J.H. Jans & H.H.B. Vedder, *European Environmental Law: After Lisbon* (Europa Law, 4th edn, 2012), p. 67. In this context, the principle of subsidiarity forms a test and necessary conditions for establishing that the EU is the appropriate and legitimate decision maker in the light of realizing the policy goals. It is generally seen to encompass two tests: a negative condition that the 'objectives of the proposed action cannot be sufficiently achieved by the Member States, either at central level or at regional and local level', and a positive condition that 'by reason of the scale or effects of the proposed action, the Union objectives can be better achieved at Union level'; see K.St.C. Bradley, 'Legislating in the European Union', in C. Barnard & S. Peers (eds), *European Union Law* (Oxford University Press, 2014), pp. 97–139, at 110–6.

¹⁶ N. de Sadeleer, 'Principle of Subsidiarity and the EU Environmental Policy' (2012) 9(1) *Journal for European Environmental & Planning Law*, pp. 63–70, at 64.

¹⁷ See, in the context of the WFD, Recitals 13 and 33; O. Green et al., 'EU Water Governance: Striking the Right Balance between Regulatory Flexibility and Enforcement?' (2013) 18(2) *Ecology and Society*; J. Söderasp, *Law in Integrated and Adaptive Governance of Freshwaters: A Study of the Swedish Implementation of the EU Water Framework Directive* (Luleå University of Technology (Sweden), 2018), pp. 51–2.

reconcile the ambitious ecological goals of the Directive with other national and local public interests related to water use.¹⁸

Yet, initially, the flexibility of the WFD led to significant legal uncertainty regarding the specific obligations imposed on Member States.¹⁹ Early on, legal scholarship voiced concerns that the lack of clear and enforceable rules would undermine the effectiveness of the Directive in compelling Member States to implement ambitious water management.²⁰ The national implementation of Sweden and Finland validated this concern: their focus on setting up procedural planning frameworks failed to include substantive changes in the laws regulating different water use activities, including hydropower.²¹

After prolonged ambiguity, the WFD and its implementation took a turn towards legal formalism to remedy these shortcomings. In 2015, the Court of Justice of the European Union (CJEU) confirmed that water management objectives are legally binding in permitting water use activities (Case C-461/13, the *Weser* judgment).²² Subsequent judgments have seen progressively stricter interpretations of the Directive.²³ Prompted by the Court's case law, the European Commission has increasingly utilized the formal compliance control mechanisms of EU law for the substantive content of the WFD. Notably, this resulted in Sweden facing a formal infringement procedure on the ground of flaws in the legal implementation of its obligations to review hydropower permits.²⁴ In the wake of this Swedish landmark case, the Commission has started inquiries into the permit review processes in a number of other Member States.²⁵ In response, initiatives have been put in place in both Sweden and Finland to fulfil the requirements of EU law and align the hydropower sector with current socio-economic and environmental concerns.²⁶

¹⁸ Art. 4(4)–(7) WFD.

¹⁹ A. Keessen et al., 'European River Basin Districts: Are they Swimming in the Same Implementation Pool?' (2010) 22(2) *Journal of Environmental Law*, pp. 197–221, at 199, 219–21.

²⁰ See, e.g., D. Moss, 'The Water Framework Directive: Total Environment or Political Compromise?' (2008) 400(1–3) *Science of the Total Environment*, pp. 32–41, at 39–40; W. Howarth, 'Aspirations and Realities under the Water Framework Directive: Proceduralisation, Participation and Practicalities' (2009) 21(3) *Journal of Environmental Law*, pp. 391–417, at 410–2, 416–7.

²¹ S. Kymenvaara et al., 'Variations on the Same Theme: Environmental Objectives of the Water Framework Directive in Environmental Permitting in the Nordic Countries' (2019) 28(2) *Review of European, Comparative & International Environmental Law*, pp. 197–209, at 201–3; Soininen et al., n. 1 above, p. 331; J. Söderasp & M. Pettersson, 'Before and After the *Weser* Case: Legal Application of the Water Framework Directive Environmental Objectives in Sweden' (2019) 31(2) *Journal of Environmental Law*, pp. 265–90, at 272–8.

²² Case C-461/13, *Bund für Umwelt und Naturschutz Deutschland eV v. Bundesrepublik Deutschland*, ECLI:EU:C:2015:433 (*Weser*), paras 43, 50–51.

²³ Cases C-535/18, *Land Nordrhein-Westfalen*, ECLI:EU:C:2020:391; and C-525/20, *Association France Nature Environnement*, ECLI:EU:C:2022:350.

²⁴ Case 2007/2239: see, e.g., Commission's Reasoned Opinion of 25 Jan. 2018 (dnr UD2018/01748/RS) (Infringement Case 2007/2239).

²⁵ See, e.g., the Commission's EU Pilot Inquiry to Member States addressing the question of control systems, including permit review systems, adopted pursuant to implementing Directive [2000/60/EC, the WFD]: EU Pilot (2020)9786 (on Finland) on the Operationalisation of Control Systems for Compliance with National Requirements Adopted pursuant to Implementing the Water Framework Directive.

²⁶ See Sections 3 and 4 of this article.

Despite clear legal and institutional similarities between Sweden and Finland, their governance approaches in response to the WFD differ markedly, which may be attributed to the very different number of hydropower installations in the two countries. In response to the Commission's formal infringement action,²⁷ Sweden has adopted major legislative changes and other initiatives led by the central government to reconcile the interests related to hydropower and gain a systemic control of the sector.²⁸ By contrast, Finland has relied primarily on funding schemes to prompt grassroots action and collaborative processes at the river basin level.²⁹ Accordingly, the Swedish approach can be characterized as being of a systemic nature, which relies on a legalistic, top-down framework, while the Finnish choice entails a context-specific, ad hoc approach with a bottom-up orientation.³⁰

This article argues that these differences relate to and illustrate the evolutionary phases of the WFD, as previously described. These phases have been shaped by a dynamic tension between some of the core principles of EU law: the general formalistic requirements of EU law for legal effectiveness of national implementation on the one hand, and aspirations for adopting a more flexible governance pattern shaped by the principle of subsidiarity found in the WFD on the other. To illustrate this tension, this article compares the approaches of both countries to regulating and governing their existing hydropower operations in implementing the WFD. By comparing these approaches, the article reveals how more flexible governance-oriented EU frameworks and the formal regulatory infrastructure governing the implementation of EU law clash and compete within the Member States, and how this friction might affect the outcomes of implementation at the national level. Methodologically, the article is based on a legal doctrinal analysis, complemented by the analysis of relevant policy developments in Sweden and Finland.

The article is structured as follows. Section 2 outlines the frames of EU law on governing hydropower, including general rules on national implementation in the EU legal context and the specific requirements of the WFD. The Swedish framework is analyzed in Section 3, while Section 4 delves into the Finnish system. Section 5 discusses and

²⁷ Infringement Case 2007/2239, n. 24 above.

²⁸ See, e.g., Regeringens proposition 2017/18:243 'Vattenmiljö och Vattenkraft' (Government Bill 2017).

²⁹ See, e.g., Maa- ja metsätalousministeriö (Ministry of Agriculture and Forestry), 'Vaelluskalakanhojen elvyttämishjelma NOUSU', 14 Oct. 2023, available at: <https://mmm.fi/vaelluskalat/vaelluskalaohjelma>. In this article we use the terms 'collaborative processes' or 'collaborative initiatives' to refer to collaborative governance processes in which a public sector institution engages other community stakeholders (i.e., other state and municipal agencies, interest groups, operators and resource users, stakeholders, citizens and their representative non-governmental organizations) in carrying out a strategic learning process aimed at framing public values, in formulating a shared understanding of community problems and outcomes, and in carrying out and overseeing the implementation of the agreed measures. See, e.g., C. Bianchi, G. Nasi & W.C. Rivenbark, 'Implementing Collaborative Governance: Models, Experiences, and Challenges' (2021) 23(11) *Public Management Review*, pp. 1581–9, at 1583–5; N. Pirsoul & M. Armoudian, 'Deliberative Democracy and Water Management in New Zealand: A Critical Approach to Collaborative Governance and Co-management Initiatives' (2019) 33(14) *Water Resources Management*, pp. 4821–34, at 4822.

³⁰ This has been characterized as governing v. 'governancing', or a shift from government to governance; see, e.g., D. Levi-Faur, 'From "Big Government" to "Big Governance"?' in D. Levi-Faur (ed.), *The Oxford Handbook of Governance* (Oxford University Press, 2012), pp. 3–18, at 9–11.

compares the two approaches with a particular focus on how the findings might inform implementation of the WFD more generally in EU Member States. Section 6 concludes.

2. The WFD Requirements on Hydropower

Adopted in 2000, the WFD sets ambitious objectives for the quality and functioning of all surface waters in Europe,³¹ and a system of river basin management plans (RBMP) that serves as a framework for water policies.³² The Directive's substantive and procedural elements form the principal framework for water governance in EU Member States, as EU law enjoys primacy over national law.³³ Directives such as the WFD need to be implemented by the Member States, a process which encompasses adopting national legislation and establishing the necessary governance arrangements to ensure that the full legal content of the Directive is realized.³⁴ Implementation efforts are subject to the Commission's oversight and, when necessary, judicial enforcement through infringement processes.³⁵ In such cases, the Commission can refer the matter to the CJEU to enforce compliance.³⁶ This section describes the WFD approach to water governance with a particular focus on its requirements for controlling the environmental impacts of existing hydropower operations and the enforcement of these requirements in the EU legal context.

2.1. The Ecological Objectives in Rivers Harnessed for Hydropower

The WFD sets two main substantive norms for natural surface waters management: preventing any deterioration of water status, and achieving 'good status' in all water bodies by 2015 or, in the case of exemptions, no later than 2027.³⁷ 'Good status' of surface waters includes good chemical quality,³⁸ as well as 'good ecological status' (GES). In general, GES is assessed according to a five-level classification system based on the status of relevant biological quality elements and considering other environmental conditions, such as hydromorphological elements, which affect the biological

³¹ Art. 4(1)(a) WFD. The Directive also contains objectives on the chemical quality and quantity of groundwater resources: Art. 4(1)(b) WFD.

³² Recital 18 WFD.

³³ This legal relation, referred to as the principle of primacy or supremacy of EU law, has developed over time in the case law of the CJEU; see, e.g., Cases C-6/64, *Costa v. ENEL*, ECLI:EU:C:1964:66; C-11/70, *Internationale Handelsgesellschaft mbH v. Einfuhr- und Vorratsstelle für Getreide und Futtermittel*, ECLI:EU:C:1970:114; and C-106/89, *Marleasing SA v. La Comercial Internacional de Alimentacion SA*, ECLI:EU:C:1990:395.

³⁴ Jans & Vedder, n. 15 above, p. 139.

³⁵ Art. 17(1) TEU; Arts 258 and 260 of the Treaty on the Functioning of the EU (TFEU), Lisbon (Portugal), 13 Dec. 2007, in force 1 Dec. 2009 [2012] OJ C 326/47.

³⁶ Art. 258 TFEU.

³⁷ Arts 4(1)(a)(i)–(ii) and 4(4) WFD. See *Weser* judgment, n. 22 above, paras 52–70 (on the scope of deterioration of surface water status).

³⁸ Chemical status is assessed based on compliance with environmental quality standards establishing maximum levels of concentration for chemical substances deemed harmful to the aquatic environment; see Directive 2008/105/EC on Environmental Quality Standards in the Field of Water Policy [2008] OJ L 348/84.

quality.³⁹ With regard to rivers, GES includes biological factors such as abundance and composition of fish fauna, with hydromorphological factors such as hydrological regime (river flows) and river continuity also figuring in the analysis.⁴⁰ Ecological status is assessed based on the extent to which the state of the biological elements deviates from the highest status class: ‘high ecological status’. GES marks only slight deviation from that condition.⁴¹

Hydropower operations have considerable impacts on the ecological status of rivers, which may result in the biological elements falling short of the standards for GES.⁴² Accordingly, achieving GES in water bodies harnessed for hydropower requires extensive mitigation measures or even the removal of dams, at least in principle.⁴³ In practice, the WFD allows Member States to designate rivers ‘heavily modified water bodies’ (HMWB), which are assessed in terms of a lower ecological status objective – ‘good ecological potential’ (GEP).⁴⁴ A water body may be designated an HMWB where hydropower activities have *substantially* changed it to the point where GES cannot be reached without a *significant adverse effect* on the water use in question (here, hydropower generation). An additional condition is that technical or economic reasons prevent the benefits of the activity being achieved by less environmentally intrusive methods.⁴⁵ Based on these conditions, waters affected by large-scale hydropower operations, specifically those with a maximum installed capacity exceeding 10 megawatts (MW) and involving water storage, are more likely to warrant a designation of HMWB.⁴⁶ However, waters affected by small-scale hydropower activities, with capacities below 10 MW and lacking storage capacity, do not.⁴⁷ The WFD’s objective setting thus reflects societal preferences. For larger, more societally important hydropower operations, there is the possibility to accommodate certain ecological requirements. In contrast, for smaller operations, it is presumed that ecological status interests prevail, which calls for the decommissioning of such facilities.

Clearly, efforts should also be made to improve the ecological state of HMWBs. The GEP objective describes ‘only a slight deviation from the highest ecological status and the point on an ecological continuum’ that would be achievable without causing

³⁹ Arts 2(18), (21), (22) and (24), and Annex V, ss. 1.1.1 and 1.2 WFD.

⁴⁰ *Ibid.*; WFD CIS 2015, n. 12 above, pp. 2–3, 27–8.

⁴¹ Annex V, s. 1.2.1 WFD.

⁴² The WFD classification system particularly captures the adverse impacts on fish stocks as a result of the barriers to fish migration caused by dam structures: WFD CIS 2015, n. 12 above, p. 34.

⁴³ WFD CIS 2015, n. 12 above, p. 12; Soininen et al., n. 1 above, pp. 322–3.

⁴⁴ Arts 4(1)(a)(iii) and 4(3) WFD.

⁴⁵ Arts 2(9) and 4(3)(a)–(b) WFD.

⁴⁶ WFD CIS, *Steps for Defining and Assessing Ecological Potential for Improving Comparability of Heavily Modified Water Bodies*, Guidance Document No. 37 (European Union, 2020), pp. 13, 17, 23 (WFD CIS 2020).

⁴⁷ *Ibid.* This is based on the fact that the renewable energy production benefit of small-scale hydropower can generally be achieved in other ways that are less damaging to the environment, such as wind power: T.H. Bakken et al., ‘Demonstrating a New Framework for the Comparison of Environmental Impacts from Small- and Large-Scale Hydropower and Wind Power Projects’ (2014) 140 *Journal of Environmental Management*, pp. 93–101, at 100–1.

significant adverse effects on the water use in question.⁴⁸ Depending on how ‘significant adverse effect’ is defined, achieving GEP may necessitate measures such as building fish passages and bypass channels or operating the hydropower facility in a way that maintains natural flow regimes and water levels. The scope of measures required depends on whether the ‘significant adverse effect’ is assessed in relation to the hydropower sector’s contribution to the Member State’s overall energy supply or at the level of the individual facility. In concrete terms, carrying out ecological measures often decreases the production of a hydropower plant. While this may be a significant adverse effect for the operator, the loss may not have any impact on the energy system and public interests at large, in cases where hydropower is provided by a large number of facilities. While Article 4(3) WFD does not unequivocally endorse the state- or facility-level interpretation, the Commission has maintained that only adverse effects on the general societal functions served by the facility can be taken into consideration, not harm to private interests of the operators.⁴⁹ In other words, a loss of production or storage capacity that causes a risk to energy security can be considered a ‘significant adverse effect’, but not losses for individual hydropower operators. Following this interpretation implies that Member States should systematically assess the overall societal function of the sector and the contribution of each facility to it, and steer operators to carry out the water management measures across the relevant HMWBs accordingly.

In addition to designating water bodies as HMWBs, the WFD contains an exemption regime which may be applied to further temper an operator’s water protection obligations. For example, Article 4(4) allows the deadline for implementing measures and attaining the environmental objectives to be extended to 2027 (or even beyond in the case of ‘natural conditions’).⁵⁰ Article 4(5) provides that Member States can set less stringent environmental objectives for certain water bodies if achieving GES or GEP would be infeasible or disproportionately expensive. This does not automatically mean that no measures will be required, as Member States are required to ensure that no deterioration occurs and that the highest possible ecological status is achieved.⁵¹ Yet, adopting less stringent objectives makes it possible to take into account the costs of measures and the interests of the operator, which are considerations that are not incorporated into the GES or GEP objectives.⁵² The precondition for setting less stringent environmental objectives is that the societal or ecological needs served by the activity cannot be achieved by less environmentally intrusive means.⁵³ Generally, this option does not apply to small-scale hydropower facilities.⁵⁴ Moreover, the

⁴⁸ Annex V, s. 1.2.5 WFD; WFD CIS 2020, n. 46 above, pp. 13, 30. See also H. Josefsson, ‘Good Ecological Potential: A Credible Objective for Water Management?’ (2016) 13(2) *Journal for European Environmental & Planning Law*, pp. 167–89, at 183–8.

⁴⁹ WFD CIS 2020, n. 46 above, pp. 56–8.

⁵⁰ Art. 4(4)(c) WFD.

⁵¹ Arts 4(5)(b) and (c) WFD.

⁵² S.T. Puharinen, ‘Free Rivers or Legal Certainty? Review of Hydropower Permits under EU Water Law’ (2022) 33(1) *European Energy and Environmental Law Review*, pp. 54–67, at 63.

⁵³ Art. 4(3)(b) WFD.

⁵⁴ Puharinen, n. 52 above, p. 63.

exemption cannot be made permanent but must be reviewed every six years along with the RBMPs.⁵⁵

2.2. Implementing the Water Quality Aspirations: River Basin Governance and Formal Permit Review Obligations

Traditionally, EU environmental directives provide rather specific and detailed substantive rules that are to be implemented and administrated by the Member States.⁵⁶ This formalistic, top-down steering has proven problematic in addressing complex socio-ecological challenges such as improving the quality of aquatic ecosystems.⁵⁷ The WFD is an example of a shift towards more flexible governance patterns in EU law.⁵⁸ This so-called governance approach comes to the fore in allowing much of the substantive legal content to be decided at the national level and subsequently adjusted to accommodate local circumstances in each context.⁵⁹ This practice has been referred to as ‘applied subsidiarity’.⁶⁰

In keeping with the governance approach, the WFD sets common framework objectives, achieving GES and GEP, but gives Member States discretion in developing the substantive water policies through which this is accomplished in specific circumstances.⁶¹ The novelty of the WFD is its hydrology-based approach, in which river basin districts form the primary units of management for which customized policy is developed.⁶² The Directive’s regulatory orientation also shows proceduralization of EU law, in which, alongside more broadly worded substantive law, procedural elements are regulated in a specific, detailed and clearly binding manner.⁶³ In the case of the WFD, this applies to its river basin management planning process, which incorporates a cyclical decision-making mechanism that encourages the production and absorption of new knowledge in water management policy.

⁵⁵ Art 4(5)(d) WFD.

⁵⁶ I. von Homeyer, ‘The Evolution of EU Environmental Governance’, in J. Scott (ed.), *Environmental Protection: European Law and Governance* (Oxford University Press, 2009), pp. 1–26, at 10; M. van Rijswick & S. van Holten, ‘The Governance Approach in European Union Environmental Directives and its Consequences for Flexibility, Effectiveness and Legitimacy’, in M. Peeters & R. Uylenburg (eds), *EU Environmental Legislation: Legal Perspectives on Regulatory Strategies* (Edgar Elgar, 2014), pp. 13–47, at 14.

⁵⁷ See C. Sabel & J. Zeitlin, ‘Learning from Difference: The New Architecture of Experimentalist Governance in the EU’, in C.F. Sabel & J. Zeitlin (eds), *Experimentalist Governance in the European Union: Towards a New Architecture* (Oxford University Press, 2010), pp. 1–28, at 10–1.

⁵⁸ See Dimitrova & Steunenbergh, n. 13 above, pp. 207–8; K. Holzinger, C. Knill & A. Schäfer, ‘Rhetoric or Reality? “New Governance” in EU Environmental Policy’ (2006) 12(3) *European Law Journal*, pp. 403–20; von Homeyer, n. 56 above, p. 6.

⁵⁹ See Recital 13 WFD; European Commission, ‘European Governance: A White Paper’, 25 July 2001, COM(2001) 428 final, pp. 2–3.

⁶⁰ J. Newig, C. Pahl-Wostl & K. Sigel, ‘The Role of Public Participation in Managing Uncertainty in the Implementation of the Water Framework Directive’ (2005) 15(6) *European Environment*, pp. 333–43, at 335.

⁶¹ Case C-32/05, *Commission v. Luxembourg*, ECLI:EU:C:2006:749, paras 39–51; C. Sabel & J. Zeitlin, ‘Learning from Difference: The New Architecture of Experimentalist Governance in the EU’ (2008) 14(3) *European Law Journal*, pp. 271–327, at 273–4.

⁶² Recitals 13 and 33 WFD; Söderasp, n. 17 above, pp. 51–2.

⁶³ Howarth, n. 20 above, pp. 394–5; M. Lee, ‘Law and Governance of Water Protection Policy’, in Scott, n. 56 above, pp. 27–55, at 36.

Its flexibility notwithstanding, the WFD prescribes in Article 11(3) that Member States are to incorporate certain measures into national law.⁶⁴ One such measure is permit-based control for hydropower operations, which requires that permits be reviewed and updated when necessary.⁶⁵ However, the Directive does not lay down specific rules on how its instruments should be used in each water management context.⁶⁶ Moreover, it explicitly demands high-level involvement and engagement of non-state actors in its implementation, favouring participatory and collaborative governance arrangements in water management.⁶⁷ In the context of hydropower, water management could thus include a permitting system established in state-made ‘hard law’ but also involve other types of measure, such as collaborative governance processes and agreed voluntary actions by the operators that advance the WFD’s aims. As further evidence of the Directive’s flexibility, the provisions on achieving GES or GEP were first seen as aims for water management rather than strictly legal requirements.⁶⁸

The flexible approach of the WFD to substantive regulation was not exactly welcomed with open arms in legal scholarship. This flexibility was feared to be so extensive that it could undermine the Directive’s capacity to be backed up by the strong enforcement mechanisms that constitute an essential characteristic of EU law.⁶⁹ These mechanisms take the form of formal compliance control by the Commission and the CJEU, which addresses the sufficiency of Member States’ implementation efforts, including legal transposition and practical application.⁷⁰ A general challenge for directives invoking a governance approach in EU law is that the requirements of EU primary law⁷¹ for implementation highlight formalistic virtues such as legal effectiveness,

⁶⁴ See L. Baaner, ‘The Programme of Measures of the Water Framework Directive: More than Just a Formal Compliance Tool’ (2011) 8(1) *Journal for European Environmental and Planning Law*, pp. 82–100, at 84.

⁶⁵ Art. 11(3)(e) and (i) WFD.

⁶⁶ See in contrast to, e.g., Directive 2010/75/EU on Industrial Emissions (Integrated Pollution Prevention and Control) [2010] OJ L 334/17, which establishes a permit control system as a policy instrument and lays down specific rules on the operations that are to be subjected to permit control, the permit conditions that are to be set, and in which situations and according to which substantive rules permits are to be reviewed.

⁶⁷ Newig, Pahl-Wostl & Sigel, n. 60 above, pp. 339–40; Von Homeyer, n. 56 above, p. 15; D.M. Trubek & L.G. Trubek, ‘New Governance & Legal Regulation: Complementarity, Rivalry, and Transformation’ (2007) 13(3) *Columbia Journal of European Law*, pp. 539–64, at 550; Lee, n. 63 above, pp. 38–44; Howarth, n. 20 above, pp. 398–9.

⁶⁸ See, e.g., Howarth, n. 20 above, pp. 411–2.

⁶⁹ Moss, n. 20 above, pp. 39–40; Howarth, n. 20 above, pp. 410–2, 416–7.

⁷⁰ This marks a clear contrast to, e.g., international environmental law regimes that are often considered weak and entail rather high levels of non-compliance by the state parties; see B. Bohman, ‘Lessons from the Regulatory Approaches to Combat Eutrophication in the Baltic Sea Region’ (2018) 38 *Marine Policy*, pp. 227–36, at 230–2.

⁷¹ In the EU legal system, primary law consists of the foundational treaties – the TEU and TFEU – which establish the EU, its institutions, competences and functioning, as well as the fundamental duties of Member States. In turn, secondary law includes EU legal acts – mainly directives and regulations – adopted based on the primary law of the various policy sectors in which the EU has regulatory competence. Implementation of secondary law in Member States is governed by the general rules and principles of EU primary law, which include a duty to ensure proper fulfilment of the obligations arising from the acts of the Union: Art. 4(3) TEU.

legality, and legitimacy.⁷² Member States are required to transpose a directive's provisions with unequivocally binding force to ensure their full application. This prioritizes explicit statutory rules, as mere interpretations of existing domestic law, administrative practices or the jurisprudence of national courts will generally be insufficient to meet the conditions of EU law.⁷³ Moreover, particularly when natural or other persons are concerned, the legal situation resulting from national implementation must be sufficiently precise, clear, and transparent to enable the individuals affected to know the extent of their rights and obligations.⁷⁴

The WFD was perceived as fitting poorly into these formal frames of EU law because the Directive lays down only vague substantive norms, such as achieving GES or GEP, without specifying how these apply in specific instances, who the principal responsible actor is, and the legal obligations that apply to different actors.⁷⁵ Perhaps unsurprisingly, the transposition of the WFD in various Member States invited challenges.⁷⁶ Moreover, the Commission encountered difficulties in enforcing the Directive's substantive aspects. Infringement control focused mostly on the timely fulfilment of the procedural obligations.⁷⁷ Meanwhile, substantive questions, such as the need to carry out water protection measures in hydropower facilities, were addressed only in the Commission's feedback on the Member States' RBMPs and, even then, not in a very legally specific manner.⁷⁸

With the CJEU *Weser* judgment in 2015, the interpretations of the WFD took a sharp turn towards more traditional legal requirements, rules, and enforceable rights. The Court interpreted Article 4 as establishing binding, specific substantive rules on the permitting of new water-use activities.⁷⁹ The Court has since issued a number of judgments elaborating the substantive content of the WFD. These include the geographical and temporal scope of

⁷² J. Scott & S. Sturm, 'Courts as Catalysts: Re-thinking the Judicial Role in New Governance' (2007) 13(3) *Columbia Journal of European Law*, pp. 565–94, at 566, 568; Von Homeyer, n. 56 above, p. 20; D. Dimitrakopoulos, 'The Transposition of EU Law: 'Post-Decisional Politics and Institutional Autonomy'' (2001) 7(4) *European Law Journal*, pp. 442–58, at 453.

⁷³ Case C-361/88, *Commission v. Germany*, ECLI:EU:C:1991:224, paras 20–1; Case C-6/04, *Commission v. United Kingdom*, ECLI:EU:C:2005:626, para. 25; Case C-204/09, *Flachglas Torgay GmbH v. Germany*, ECLI:EU:C:2012:71, paras 60–1.

⁷⁴ Case C-217/97, *Commission v. Germany*, ECLI:EU:C:1999:395, paras 31–2; Case C-233/00, *Commission v. France*, ECLI:EU:C:2003:371, paras 66, 68, 76; *Commission v. Luxembourg*, n. 61 above, para. 34.

⁷⁵ Trubek & Trubek, n. 67 above, p. 549; Lee n. 63 above, p. 51; Keessen et al., n. 19 above, pp. 197–222; Van Rijswijk & Van Holten, n. 56 above, p. 15.

⁷⁶ Trubek & Trubek, n. 67 above, p. 552, Table 2.

⁷⁷ See, e.g., Case C-85/07, *Commission v. Italy*, ECLI:EU:C:2007:822; Case C-264/07, *Commission v. Greece*, ECLI:EU:C:2008:69; Case C-351/09 *Commission v. Malta*, ECLI:EU:C:2010:815; Case C-223/11 *Commission v. Portugal*, ECLI:EU:C:2012:379; Case C-366/11, *Commission v. Belgium*, ECLI:EU:C:2012:316; E. Korkea-aho, 'Watering Down the Court of Justice? The Dynamics between Network Implementation and Article 258 TFEU Litigation' (2014) 20(5) *European Law Journal*, pp. 649–66, at 664.

⁷⁸ See, e.g., European Commission, Communication, 'The Water Framework Directive and the Floods Directive: Actions towards the "Good Status" of EU Water and to Reduce Flood Risks', 9 Mar. 2015, COM(2015) 120 final, pp. 7–8.

⁷⁹ *Weser*, n. 22 above, paras 50–1; H.F.M.W. van Rijswijk & C.W. Backes, 'Ground Breaking Landmark Case on Environmental Quality Standards? The Consequences of the CJEU "Weser-Judgment" (C-461/13) for Water Policy and Law and Quality Standards in EU Environmental Law' (2015) 12(3–4) *Journal for European Environmental & Planning Law*, pp. 363–77, at 375–6.

prohibited deterioration,⁸⁰ grounds for granting exemptions to new projects,⁸¹ and the rights of individuals to rely on Article 4 in judicial proceedings.⁸² As a result of this case law, the obligations under the WFD are now seen as strict substantive legal requirements imposed on the Member States, meaning that Member States are required to ensure by any means necessary that the objectives are achieved in all water bodies.⁸³

Since the *Weser* judgment, water management objectives have been interpreted as creating binding requirements on permit reviews as well.⁸⁴ Thus, unless an exemption applies, an updated permit should encompass all relevant mitigation measures to ensure that the activity does not cause deterioration of water status or jeopardize achievement of GES or GEP.⁸⁵ In cases where this is not feasible, the permit should be revoked.⁸⁶ In short, clear substantive norms have emerged in the WFD regarding the re-permitting of hydropower that can be enforced through EU law's formal compliance control mechanisms. Yet, as these mechanisms favour legalistic, top-down implementation, where the national central government bears responsibility for its effectiveness,⁸⁷ it is now harder for Member States to rely on river basin district-based and informal policies that hinge on bottom-up processes or voluntary measures.⁸⁸ Indeed, after the *Weser* judgment, the Commission initiated an infringement action against Sweden addressing the country's failures to ensure that hydropower permits would be reviewed in the light of water management objectives.⁸⁹ In the following sections, the evolution of the WFD dynamics is illustrated using the examples of Sweden and Finland.

3. Sweden: Legislative Reform and a Top-Down Framework

Hydropower plays a crucial role in Sweden's energy system. It is one of the main sources of electricity in the country, together with nuclear and wind power.⁹⁰ In 2021, it

⁸⁰ *Land Nordrhein-Westfalen*, n. 23 above; Case C-525/20, *Association France Nature Environnement*, ECLI:EU:C:2022:350.

⁸¹ Case C-346/14, *Commission v. Austria*, ECLI:EU:C:2016:322.

⁸² Case C-664/15, *Protect Natur-, Arten- und Landschaftsschutz Umweltorganisation* (2017) ECLI:EU:C:2017:987.

⁸³ Keessen et al., n. 19 above, pp. 206–8; J. van Kempen, 'Countering the Obscurity of Obligations in European Environmental Law: An Analysis of Article 4 of the European Water Framework Directive' (2012) 24(3) *Journal of Environmental Law*, pp. 499–533, at 524–6; Van Rijswijk & Backes, n. 79 above, pp. 374–5; Puharinen, n. 52 above, p. 58.

⁸⁴ Van Rijswijk & Backes, n. 79 above, p. 375; Puharinen, n. 52 above, p. 58. See also WFD CIS 2015, n. 12 above, p. 63.

⁸⁵ Puharinen, n. 52 above, p. 58.

⁸⁶ *Ibid.*

⁸⁷ E. Thomann & F. Sager, 'Moving Beyond Legal Compliance: Innovative Approaches to EU Multilevel Implementation' (2017) 24(9) *Journal of European Public Policy*, pp. 1253–68, at 1255; Holzinger, Knill & Schäfer, n. 58 above, pp. 403, 408–9.

⁸⁸ M. Haverland, 'National Adaptation to the European Union: The Importance of Institutional Veto Points' (2000) 20(1) *Journal of Public Policy*, pp. 83–103, at 92; B.H. Jacobsen, H.T. Anker & L. Baaner, 'Implementing the Water Framework Directive in Denmark: Lessons on Agricultural Measures from a Legal and Regulatory Perspective' (2017) 67 *Land Use Policy*, pp. 98–106, at 104.

⁸⁹ See Infringement Case 2007/2239, n. 24 above, Commission Reasoned Opinion.

⁹⁰ Energimyndigheten, 'Ökning av Förnybar Elproduktion under 2020', 10 Feb. 2021, available at: <https://www.energimyndigheten.se/nyhetsarkiv/2021/okning-av-fornybar-elproduktion-under-2020>;

accounted for 43% of the total electricity generated, with approximately 16,400 MW installed capacity.⁹¹ Sweden has committed to ensuring that 100% of its electricity will come from renewable sources by 2040. This goal relies heavily on hydropower for both its production and regulation capacity: that is, capacity to balance the grid by timing production based on the fluctuations of input from other sources.⁹² At the same time, hydropower operations entail significant adverse environmental impacts, with some 1,000 to 1,200 water bodies affected by hydropower generation.⁹³ Given that 208 of Sweden's roughly 1,800 to 2,000 hydropower facilities account for 94% of the annual electricity generation and grid frequency balancing capacity,⁹⁴ some 90% of the country's hydropower operations play a negligible role in its energy provision.⁹⁵ From 2019 onward, Sweden has adopted extensive legislative changes and new policy frameworks to carry out a systematic revision and transformation of the hydropower sector to meet the WFD obligations – as required by the Commission in its infringement case. These developments are analyzed in the following section.

3.1. Implementation of the WFD in the Hydropower Sector

Sweden transposed the WFD into its national legislation by incorporating general provisions relating to the Directive's water management objectives into the Environmental Code (1998:808)⁹⁶ and adopting a new decree on water management (Water Management Decree, 2004:660).⁹⁷ The competent authorities for water management

Statista, 'Hydropower Capacity in Sweden from 2008 to 2022', 7 Aug. 2023, available at: <https://www.statista.com/statistics/864429/total-hydropower-capacity-in-sweden>.

⁹¹ Ibid.

⁹² See, e.g., Statens Offentliga Utredningar (Government Official Report), 'Fossilfrihet på väg – Betänkande av Utredningen om fossilfri fordonstrafik', SOU 2013:84, 7 Aug. 2023, available at: <https://www.regeringen.se/contentassets/7bb237f0adf546daa36aaf044922f473/fossilfrihet-pa-vag-sou-201384-del-12>; Regeringen (Government of Sweden), 'Ramöverenskommelse mellan Socialdemokraterna, Moderaterna, Miljöpartiet de gröna, Centerpartiet och Kristdemokraterna', 20 June 2016 (Energy Agreement 2016) as referred to in Regeringen (Government of Sweden), Regeringens skrivelse 2018/19:153 Första kontrollstationen för energiöverenskommelsen, 13 June 2019, 7 Aug. 2023, available at: <https://www.regeringen.se/contentassets/b55a57ff5aad46bfaefcc9d51013c7/forsta-kontrollstation-for-energioverenskommelsen2.pdf>.

⁹³ Swedish Agency for Marine and Water Management (SWaM), 'Vattenkraften i vattenförvaltningen: Var finns den? Hur viktig är den? Vilka effekter på ekologisk status?', 2012, 7 Aug. 2023, available at: http://www.vattenmyndigheterna.se/SiteCollectionDocuments/sv/bottenviken/moten-och-seminarier/vattn%C3%A5dsdagar_2012/havochvattenjohan-klng.pdf.

⁹⁴ Energimyndigheten & SWaM, 'Strategi för åtgärder i vattenkraften: Avvägning mellan energimål och miljö kvalitetsmålet i Levande sjöar och vattendrag' Havs- och vattenmyndighetens rapport 2014:14, 7 Aug. 2023, pp. 13–4, available at: <https://www.havochvatten.se/download/18.7291b665146f54c15475548/1404461536553/rapport-hav-2014-14-strategi-for-atgarder-i-vattenkraften.pdf> (SEA & SWaM 2014).

⁹⁵ See Energimyndigheten, Svenska kraftnät (Swedish Power Grid Operator) & SWaM 'Vattenkraftens reglerbidrag och värde för elsystemet', Rapport från Energimyndigheten, Svenska kraftnät och Havs- och vattenmyndigheten ER 2016:11, 7 Aug. 2023, available at: <https://www.energimyndigheten.se/contentassets/0470e9ec1c58479093f161e614adb474/vattenkraftens-reglerbidrag-och-varde-for-elsystemet.pdf> (SEA et al. 2016).

⁹⁶ Miljöbalk (1998:808), available only in Swedish at: <https://rkrattsbasen.gov.se/sfst?bet=1998:808>.

⁹⁷ Vattenförvaltningsförordning (2004:660), available only in Swedish at: https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/vattenforvaltningsforordning-2004660_sfs-2004-660.

are county administrative boards (*Länsstyrelse*), five of which are responsible for conducting river basin management planning with the support of other boards. The Swedish Agency for Marine and Water Management (Havs- och vattenmyndigheten, SWaM) plays a supporting and coordinating role by providing national guidance on water management. At first, river basin management was considered predominantly as a procedural frame for planning, without substantive obligations to achieve the objectives prescribed by the WFD. This can be seen in the division of competence in the Directive's implementation: water management planning is conducted by county administrative boards, whereas permitting of water activities in most cases falls within the competence of land and environmental courts (*Mark- och miljödomstol*). On the side of substantive law, the Environmental Code employs a system of environmental quality standards (EQS) – that is, general norms on environmental quality that have legal implications in accordance with the Code's other provisions.⁹⁸ Initially, the ecological objectives of the WFD were not given binding legal status in the EQS system.⁹⁹ Instead, they were applied in permit proceedings in accordance with the Code's 'general consideration rules', meaning that operations need to undertake measures to prevent and mitigate adverse impacts on these EQS only to the extent that a cost-benefit assessment deems them reasonable.¹⁰⁰

Ecological objectives did not effect changes to existing hydropower permits, or have strong legal weight in the permit reviews that were possible in those otherwise initiated. Swedish water law contained a strong permanence doctrine for hydropower permits, which meant that they were granted for an indeterminate duration and were not automatically reviewed.¹⁰¹ This was a major challenge as about 90% of the hydropower operations in Sweden had been permitted prior to the adoption of the Environmental Code (1998) and the WFD (2000).¹⁰² Accordingly, the vast majority of the country's hydropower facilities operated with outdated – if any – requirements for environmental measures.¹⁰³

⁹⁸ For a comprehensive exploration see L. Gipperth, *Miljö kvalitetsnormer: en rättsvetenskaplig studie i regelteknik för operationalisering av miljömål* (Uppsala University (Sweden), 1999).

⁹⁹ The Code provides four categories of EQS, and only the WFD's chemical status objectives constituted 'limit values' that are binding on all permit decisions: Environmental Code, Ch. 5, s. 2. The obligation to prevent deterioration was neither categorized as an EQS nor recognized as a separate legal obligation; see Söderasp & Pettersson, n. 21 above, pp. 276–7.

¹⁰⁰ Environmental Code, Ch. 2, s. 7, prior to the amendments. See also Söderasp & Pettersson, n. 21 above, pp. 266–7, at 276.

¹⁰¹ Act on Entry into Force of the Environmental Code (1998:811), s. 6; Söderasp & Pettersson, n. 21 above, p. 273.

¹⁰² The most important pieces of legislation were the first comprehensive Water Act of 1918 and the subsequent Water Act of 1983, both of which prioritized rapid hydropower development over protection of fisheries and nature conservation: Lindström & Ruud (2017a), n. 1 above, p. 4; M. Pettersson & S. Goytia, 'The Role of the Precautionary Principle and Property Rights in the Governance of Natural Resources in Sweden' (2016) 1 *Nordic Environmental Law Journal*, pp. 107–21, at 116; Söderasp & Pettersson, n. 21 above, pp. 272–4.

¹⁰³ Statens Offentliga Utredningar (Government Official Report), 'Ny tid ny prövning – förslag till ändrade vattenrättsliga regler', SOU 2013:69, pp. 208–9, available at: <https://www.regeringen.se/contentassets/8b7f91f4777141529bf0119c79feaf0/ny-tid-ny-provning-forslag-till-andrade-vattenrattsliga-regler-sou-201369>; Pettersson & Goytia, n. 102 above, pp. 116–7; Lindström & Ruud (2017a), n. 1 above, p. 4; Söderasp & Pettersson, n. 21 above, pp. 273–4.

While, in principle, the Environmental Code provided authorities with some opportunities to review and update existing permits,¹⁰⁴ it contained several legal conditions that protected the interests of operators over the need to enforce the interests of environmental protection. Firstly, operators had no obligation to subject their permits to review; instead, authorities had to apply for a review from the environmental court. Secondly, a review was possible only if it did not significantly harm the particular hydropower operation: only a maximum of a 5% loss in production was accepted without the authorities having to pay compensation to the operator.¹⁰⁵ Thirdly, new or modified conditions could be introduced only if they were deemed reasonable based on a cost-benefit analysis.¹⁰⁶ Lastly, revoking a permit without the operator's consent was not possible in practice.¹⁰⁷

In 2007, the EU Commission initiated an infringement procedure against Sweden, which, among other aspects, addressed the lack of legally binding water management objectives in Swedish law.¹⁰⁸ Later, relying particularly on the *Weser* judgment, the Commission urged Sweden to change its legislation to ensure the binding impact of water management objectives on permit processes, specifically by amending the Environmental Code's EQS system.¹⁰⁹ The infringement procedure also addressed the situation of existing hydropower operations.¹¹⁰ Faced with the risk of being brought before the CJEU, Sweden adopted new legislation with considerable changes to the Code. These amendments entered into force on 1 January 2019.¹¹¹

The amended Environmental Code in force today sets a general obligation on hydropower operators to ensure that their operation is consistent with 'modern environmental conditions', meaning that a facility's permit conditions relating to the protection of human health or the environment are not older than 40 years.¹¹² If this requirement is not met, the operator is obliged to apply for a permit review. As the requirement applies to the majority of Sweden's roughly 1,800 hydropower facilities, to prevent applications from swamping the environmental courts the new legislation provides that the time frame for submitting an application is set for each operator in a new national plan adopted by the government. The plan provides a 25-year time frame for review groups in each watershed, with the first applications to be submitted by 1 February 2022 and the last by 1 February 2037.¹¹³ This time frame clearly exceeds that of the

¹⁰⁴ Environmental Code, Ch. 24, s. 5(1).

¹⁰⁵ Act on the Implementation of the Environmental Code (1998:881), s. 39. See P.M. Rudberg et al., 'Mitigating the Adverse Effects of Hydropower Projects: A Comparative Review of River Restoration and Hydropower Regulation in Sweden and the United States' (2015) 27(2) *Georgetown International Environmental Law Review*, pp. 251–74, at 263.

¹⁰⁶ Environmental Code, Ch. 2, s. 7; Rudberg et al., n. 105 above, p. 271.

¹⁰⁷ Rudberg et al., n. 105 above, pp. 257–8.

¹⁰⁸ Infringement Case 2007/2239, n. 24 above.

¹⁰⁹ *Ibid.*, reasoned opinion.

¹¹⁰ *Ibid.*, p. 25.

¹¹¹ Government Bill 2017, n. 28 above; Act on the Amendment of the Environmental Code (2018:1407).

¹¹² The requirement does not apply if the permit itself prescribes another timeline for revision of its conditions: Environmental Code, Ch. 11, s. 27(1).

¹¹³ SWaM, Energimyndigheten, Svenska Kraftnät, 'Energimyndigheten och Svenska Kraftnät, Förslag till nationell plan för omprövning av vattenkraft: Med beskrivning av vattenmiljö och effektiv tillgång till

WFD, which stipulates that measures aimed at achieving GES or GEP in the water bodies should be implemented no later than during the third RBMP, spanning the period from 2022 to 2027.¹¹⁴

The substantive law related to permit reviews was also amended to make the ecological requirements under the WFD binding under Swedish law. The current law provides that in permitting new activities or reviewing the permits of existing activities, the permitting authority must impose permit conditions and other requirements to ensure that the operation will not cause deterioration of water status or jeopardize the attainment of water management objectives.¹¹⁵ Furthermore, the limitation that a permit review may not significantly harm the operation no longer applies in situations where new conditions are necessary for complying with the water management objectives.¹¹⁶ What is more, it is now the permit holders who are responsible for applying for a review, whereby the burden of submitting the necessary information to the court, and the costs of the review process and meeting the new permit requirements, have been transferred to the operators.¹¹⁷ One accommodation for operators is that they can apply for compensation from a new Hydroelectric Environmental Fund established by the country's largest hydropower companies.¹¹⁸ This compensation may cover as much as 85% of the costs related to the permit review application process and implementation of the environmental measures, as well as lost revenue.¹¹⁹

It is now also possible to revoke a permit entirely without the operator's consent.¹²⁰ However, this amendment has limited impact: as the hydropower operator must apply for a permit review, it is the operator which determines whether it opts to pursue the continuation of the operation with a revised permit or to decommission the facility, with the possibility of receiving compensation from the Hydroelectric Environmental Fund. If a permit review application is made, the permit authority's discretion is bound to the substantive rules provided in section 5(4) of the Environmental Code. What is more, the permit authority lacks the competence to outline the water

vattenkraftsel samt identifierade behov för fortsatt arbete', 2019, available at: <https://www.havochvatten.se/download/18.1bd43926172bdc4d64881cc1/1593175482312/bilaga-2-nationell-plan-moderna-miljovillkor.pdf> (SWaM et al. 2019), accepted with Regeringsbeslut (Decision of the Government), 'Nationell Plan för Moderna Miljövillkor', 25 June 2020, available at: <https://www.havochvatten.se/nationellplan>.

¹¹⁴ As explained above, extending the deadline for achieving GES or GEP beyond 2027 is possible only as a result of 'natural conditions'; the extension has to be justified by environmental conditions, and not failures in meeting GES and GEP on the ground of lack of or delayed measures: Art. 4(4)(c) WFD.

¹¹⁵ Environmental Code, Ch. 5, s. 4(2).

¹¹⁶ *Ibid.*, Ch. 24, s. 10(2); Söderasp, n. 17 above, p. 91.

¹¹⁷ The right to compensation will be abolished with a 10-year transition period: Government Bill 2017, n. 28 above, pp. 77, 125–8, 137–40; Söderasp, n. 17 above, pp. 90–1.

¹¹⁸ The idea of the fund was introduced as part of the political agreement that established that the hydropower sector is to bear the costs related to implementing the EU law requirement: Energy Agreement 2016, n. 92 above. The Hydroelectric Environmental Fund was founded and is financed by nine Swedish energy companies: Vattenkraftens Miljöfond, 13 Oct. 2023, available at: <https://vattenkraftens-miljofond.se/in-english>.

¹¹⁹ It should be noted that the establishment of the fund fulfils the commitment of the hydropower sector to bear the costs of review established in the 2016 Energy Agreement (n. 92 above), which included a property tax reduction for hydropower facilities in return.

¹²⁰ Environmental Code, Ch. 24, s. 4.

management measures needed for achieving GES or GEP. Instead, it must rely on information provided in the programme of measures to the RBMP. This means that if mitigation measures are available, and if the programme of measures does not specify that the facility should be decommissioned, the permit authority must issue a revised permit, outlining those mitigation measures that enable the operation to continue.

All in all, in terms of formal legal transposition, Sweden's legislation now transposes the substantive rules on water use activities derived from Article 4 WFD. In practice, all of Sweden's hydropower facilities will undergo re-permitting to ensure the permits' compatibility with the permitting rules established in the *Weser* judgment.¹²¹

3.2. Other Governance Initiatives

The legislative amendments were not aimed solely at correcting deficiencies in the transposition of the WFD but formed part of a broader hydropower policy reform intended to transform the sector in line with its current socio-economic role and ecological footprint.¹²² The overarching aims of the policy were laid down in 2016 in a political agreement, which stated that EU law should be fully implemented but that, at the same time, continuing high hydropower production and preserving its regulation capacity are instrumental in achieving Sweden's target of 100% renewable energy by 2040.¹²³ The legislative amendments were coupled with several other policy actions to balance various interests related to hydropower – so-called 'energy policy strategies'.

In 2014, the Swedish Energy Agency (SEA)¹²⁴ and SWaM published a national strategy for hydropower, in which 'significant adverse effect' in relation to the GEP objectives for HMWBs was defined in terms of maximum allowable impacts on the national energy system.¹²⁵ The report suggested, as national thresholds for such an effect, an annual loss of more than 1.5 terrawatt-hour (TWh) (2.3%) in power generation or any adverse impact on the regulation contribution from hydropower.¹²⁶ This general outline was first applied and refined in the context of the river basin district. The 2014 strategy assessed the energy and environmental value of each major river basin, laying down strategic guidelines for each basin and determining in which basin power production could take priority over environmental measures, or vice versa.¹²⁷

¹²¹ At the moment, however, the Swedish government has paused the review processes and asked for a further analysis of the consequences of the review plan for the energy system before reviews can be resumed: Regeringen, 'Tidoavtalet: Överenskommelse för Sverige', 14 Oct. 2022, available at: <https://www.liberalerna.se/wp-content/uploads/tidoavtalet-overenskommelse-for-sverige-slutlig.pdf> (Government Agreement 2022), pp. 14–5; Miljödepartementet (Ministry of the Environment), 'Paus av omprövning för moderna miljövillkor', M2022/02251, 13 Oct. 2023, available at: <https://www.regeringen.se/rattsliga-dokument/departementsserien-och-promemorior/2022/12/promemoria-paus-av-omprovning-for-moderna-miljovillkor> (Ministry of the Environment 2022).

¹²² Lindström & Ruud (2017a), n. 1 above, p. 13.

¹²³ Energy Agreement 2016, n. 92 above. Yet, the 2040 objective has also been revised to mean 100% 'fossil free energy', so that it includes nuclear power: Government Agreement 2022, n. 121 above, pp. 13–5.

¹²⁴ Government agency responsible for official statistics and energy research: Energimyndigheten, 13 Oct. 2023, available at: <https://www.energimyndigheten.se/om-oss>.

¹²⁵ SEA & SWaM 2014, n. 94 above.

¹²⁶ *Ibid.*, p. 41.

¹²⁷ *Ibid.*, pp. 21–2, 42–4.

In the second phase of application, SEA, SWaM and Svenska Kraftnät (the Swedish power grid operator) jointly published a report in 2016, which introduced the concept of ‘relative regulation contribution’.¹²⁸ This concept aims to illustrate the contribution of each hydropower facility to the regulation of the national electricity system. The figure would be applied in designating HMWBs, which, according to the WFD, should be carried out for individual water bodies but based on national and regional energy security considerations.¹²⁹ Facilities were classified in terms of three categories: (i) operations with the highest value to the electricity system, which together account for 95% of the energy produced by the sector and 98% of the regulation contribution (255 facilities); (ii) operations where a case-to-case assessment is needed (78 facilities); and (iii) operations having the lowest value for the energy system and not contributing to the regulation of the electricity grid (approximately 1,700 facilities).¹³⁰ This categorization was intended to provide a basis for designating HMWBs and for assessing the significant adverse effect in defining the focal GEP objectives. The report also urged that when the WFD allowed for flexibility, this should be maximized for the most important operations, while water management interests should be prioritized for less important facilities.¹³¹ However, the Swedish government has recently paused the review of hydropower permits and instructed the energy and water management authorities to conduct further analysis of the repercussions of the reviews for the electricity system. The government will decide later if there are grounds to revise the previous energy policy strategies.¹³²

By nature, these energy policy strategies are not formally binding in water management or permit reviews. Yet, several informal and formal legal mechanisms were adopted as part of the 2019 legislative amendments to integrate them into water management. On the informal side, SWaM adopted new national water management guidance in 2016 in which it instructed water management authorities to adhere to the national thresholds for significant adverse effect as baselines in defining GEP for individual HMWBs affected by hydropower.¹³³ The guidance also emphasized setting less stringent environmental objectives for some water bodies in order to stay below those thresholds.¹³⁴ On the formal side, the 2019 legal reform included amendments to increase the flexibility of water management for the benefit of the hydropower sector. Firstly, permit reviews now depend on the national plan, which determines set timetables for reviews and formalizes the strategic guidelines adopted for each river basin.¹³⁵

¹²⁸ SEA et al. 2016, n. 95 above, pp. 11–5.

¹²⁹ *Ibid.*, pp. 7–8.

¹³⁰ *Ibid.*, pp. 32–3.

¹³¹ SEA & SWaM 2014, n. 94 above, p. 40; SEA et al. 2016, n. 95 above, pp. 32–3.

¹³² See Tidningen Energi, ‘Myndigheter kartlägger vattenkraftens miljöprovning’, 13 Apr. 2023, available at: <https://www.energi.se/artiklar/2023/april-2023/myndigheter-kartlagger-vattenkraftens-miljoprovning>.

¹³³ SWaM, ‘Vägledning för kraftigt modifierat vatten: Fastställande av kraftigt modifierat vatten i vattenförekomster med vattenkraft’ 2 June 2016, available at: <https://www.havochvatten.se/download/18.1200000e154e1ecc6e8ef337/1464873793806/vagledning-for-kraftigt-modifierat-vatten.pdf> (SWaM 2016).

¹³⁴ *Ibid.*, pp. 53–4.

¹³⁵ Environmental Code, Ch. 11, s. 28; SWaM et al. 2019, n. 113 above.

Secondly, the government imposed a duty on water authorities to declare water bodies as HMWBs and apply relevant exemptions whenever the appropriate conditions are satisfied.¹³⁶ The purpose of this command is to influence assessments of water managers on exemptions so that they would align with the top-down policy established in national strategies and plans. However, it has been assessed that the new policy runs the risk of leading to overly lenient application of the WFD exemptions.¹³⁷ Thirdly, the legislation now includes a new mechanism for contesting and revising the EQS that form the basis for water management objectives in permit review processes. If the information provided by the permit holder indicates that a certain aspect of the water environment deviates from the original assessment based on which the EQS were set, the permitting authority must obtain a statement from the relevant water authority, which is under an obligation to make the necessary decisions on the EQS.¹³⁸ The provision is designed to enable information generation in the process, as the assessments required for the permit application process are often more specific and comprehensive than those that the water management authorities are able to produce for the RBMPs.¹³⁹ However, there are also reasons for scepticism regarding the underlying motive for the provision. The law provides that if the water authority finds no reason to adjust the EQS, it has to forward the case to the government. If the latter arrives at a different conclusion, it has the authority to issue regulations that overrule the water authority's decision and change the EQS.¹⁴⁰ All in all, these mechanisms have the effect that, while the environmental courts will carry out permit reviews independently, there is increased governmental steering of the water authorities, which may have implications for permit review.¹⁴¹

¹³⁶ Government Bill 2017, n. 28 above, pp. 76, 148–57; Appropriation Directions addressed to the County Administrative Boards, 2018, Direction No. 31; Vattenmyndigheterna & Länsstyrelserna (Water District Authorities), 'Redovisning av uppdrag 25 i länsstyrelsernas regleringsbrev för 2017: Översyn av förutsättningarna för en ökad tillämpning av undantag inom vattenförvaltningen' 2018, available at: <https://www.vattenmyndigheterna.se/download/18.6e75aae16a5913048919e6d/1557917363402/%C3%96versyn%20av%20f%C3%B6rut%C3%A4ttingarna%20f%C3%B6r%20en%20C3%B6kad%20till%20C3%A4mpning%20av%20undantag%20inom%20vattenf%C3%B6rvaltningen.pdf>; Söderasp, n. 17 above, p. 91.

¹³⁷ H. Josefsson & V. Viklund, 'Legal Study on the Abusive Use of Exemptions to the Water Framework Directive in Sweden', WSP Advisory, 4 May 2022, pp. 21–5, available at: <https://www.wfse.cdn.triggerfish.cloud/uploads/2022/06/report-on-abusive-use-of-wfd-exemption-wsp-2022.pdf>.

¹³⁸ Environmental Code, Ch. 22, s. 13(1), point 1(a–b); Water Management Decree, s. 14(1). See also Söderasp, n. 17 above, p. 92.

¹³⁹ See Government Bill 2017, n. 28 above, p. 120.

¹⁴⁰ Water Management Decree, s. 14(2). In the Swedish system, EQS are normative and have binding legal effect, which is why their adoption is based on delegated legislative power. In accordance with s. 5(1) of the Environmental Code, the government may adopt governmental regulations establishing EQS. In the case of adopting EQS that relate to Sweden's obligations under EU law – such as water management objectives in the EQS – the government has delegated this power to water authorities in accordance with the second paragraph of that provision. This being the case, if the government arrives at a different conclusion from that of the water authority on the need to modify the EQS, the government can revoke the delegated power and issue renewed EQS based on the competence provided in s. 5(1) of the Environmental Code. The Governmental Bill also particularly emphasizes lowering the requirements of an EQS in this context: Government Bill 2017, n. 28 above, pp. 151, 211–4.

¹⁴¹ Söderasp, n. 17 above, pp. 91–4.

4. Finland: Legal Ambiguity and Bottom-Up Processes

Hydropower is a notable energy source in Finland, accounting for around 17% of the total electricity generated in the country, with an installed capacity of approximately 3,200 MW.¹⁴² In 2021, 86% of Finland's overall electricity generation was produced by renewable sources (53%) or nuclear power (33%).¹⁴³ Finland has established a legally binding objective of achieving climate neutrality by 2035.¹⁴⁴ In alignment with this objective, it has been recognized that the grid-balancing capacity of hydropower will play a central role in ensuring the functioning of the energy system.¹⁴⁵ Finland has around 230 commercially operated hydropower facilities, two-thirds of which are small-scale operations (<5 MW) with no grid-balancing capacity or other particular relevance to the sector's overall capacity. In addition, there is a striking number of plants (approximately 460 to 470) with a capacity of less than 0.1 MW.¹⁴⁶ Accordingly, fewer than 80 of the country's hydropower facilities provide a meaningful contribution to the national energy mix, to Finland's climate neutrality target, or to energy security. Despite this imbalance, Finland has not adopted substantive legal reforms to review existing hydropower permits. Instead, the country has relied mostly on bottom-up and collaborative actions between authorities, permit holders, and other stakeholders to facilitate environmental measures and, in rare instances, the removal of dams. This section analyzes this approach to water governance as it relates to the implementation of the WFD.

4.1. Implementation of the WFD in the Hydropower Sector

The WFD was transposed into Finnish legislation mainly through four pieces of legislation: the Act on Water and Marine Resources Management (WRMA, 1299/2004),¹⁴⁷ the Government Decree on Water Resources Management (Water Management Decree, 1040/2006),¹⁴⁸ the Water Act (WA, 587/2011),¹⁴⁹ and the Environmental Protection Act (EPA, 527/2014).¹⁵⁰ The WRMA sets out the requirements for RBMPs and the general water management objectives largely following the wording

¹⁴² Motiva, Vesivoima, 7 Aug. 2023, available at: https://www.motiva.fi/ratkaisut/uusiutuva_energia/vesivoima.

¹⁴³ Tilastokeskus, n. 7 above.

¹⁴⁴ Climate Act (Ilmastolaki 423/2022), Ch. 1, s. 2(1), unofficial translation in English, available at: <https://www.finlex.fi/fi/laki/kaannokset/2015/en20150609.pdf>.

¹⁴⁵ Työ- ja elinkeinoministeriö (Ministry of Economic Affairs and Employment of Finland), 'Hiilineutraali Suomi 2035: kansallinen ilmasto- ja energiastrategia', Työ- ja elinkeinoministeriön julkaisuja 2022:53, 7 Aug. 2023, p. 40, available at: https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/164321/TEM_2022_53.pdf?sequence=1&isAllowed=y.

¹⁴⁶ Vesiläikityöryhmän mietintö, n. 3 above, p. 14; Iho et al., n. 8 above, pp. 119–21.

¹⁴⁷ Laki vesienhoidon ja merenhoidon järjestämisestä (1299/2004), unofficial translation in English available at: https://www.finlex.fi/en/laki/kaannokset/2004/en20041299_20141263.pdf.

¹⁴⁸ Valtioneuvoston asetus vesienhoidon järjestämisestä (1040/2006), unofficial translation in English available at: <https://www.finlex.fi/en/laki/kaannokset/2006/en20061040.pdf>.

¹⁴⁹ Vesilaki (587/2011), unofficial translation in English available at: <https://www.finlex.fi/fi/laki/kaannokset/2011/en20110587.pdf>.

¹⁵⁰ Ympäristönsuojelulaki (527/2014), unofficial translation in English available at: https://finlex.fi/en/laki/kaannokset/2014/en20140527_20190049.pdf.

of the WFD, while water body-specific objectives are defined in the RBMPs. Hydropower operations are covered in the permit system of the WA. This division is also visible in the competences of the relevant state authorities. While Centres for Economic Development, Transport and the Environment (ELY centres) act as water management authorities, permitting falls within the competence of Regional State Administrative Agencies.

In the original transposition, the WFD objectives were not considered to have binding legal effect on water-use activities.¹⁵¹ Quite the contrary, the national preparatory materials underscored that RBMPs have *no direct effect on the granting of permits*, let alone the review of existing permits.¹⁵² The WA stipulates only that, in the permitting process for new projects, the competent authority must consider the factors established in the relevant RBMP.¹⁵³ Tellingly, the preconditions for reviewing and updating hydropower permits established in the WA make no reference whatsoever to RBMPs or water management objectives. Following the *Weser* judgment, the Finnish Supreme Administrative Court (SAC) established in its case law that the environmental objectives of the WFD are binding on the WA permit process for new projects.¹⁵⁴ However, no case law exists on the legal implications of these objectives for permit reviews.

Moreover, like Sweden, Finland's water law traditionally incorporates a doctrine of strong permanence for hydropower permits: permits are granted for an unlimited duration and cannot be revoked without the permit holder's consent.¹⁵⁵ Even a review of permit requirements is allowed under limited conditions related to material changes in circumstances.¹⁵⁶ Such circumstances have been argued potentially to encompass the need to mitigate the adverse effects of hydropower pursuant to Finland's obligations under EU law.¹⁵⁷ However, in the absence of any precedent from the SAC, it remains unclear whether this interpretation would hold up in court. The traditionally strong permanence doctrine calls for restrictive interpretation of any provisions that would deviate from the presumptive permanence of the original permit decision.¹⁵⁸ Remarkably, the

¹⁵¹ See Kymenvaara et al., n. 21 above, pp. 202–3.

¹⁵² Government Bill (120/2004), p. 52; Constitutional Law Committee Statement (45/2004), 'Perustuslakivaliokunnan lausunto 45/2004 vp'.

¹⁵³ Ch. 3, s. 6 WA.

¹⁵⁴ SAC 2017:87; SAC 2019:166.

¹⁵⁵ The only way to initiate the removal of a dam without the consent of the operator is to invoke the takings doctrine under the WA or the Act on the Redemption of Immoveable Property and Special Rights (Laki kiinteän omaisuuden ja erityisten oikeuksien lunastamisesta (603/1977)). So far, no such initiatives have been made and there is thus considerable legal ambiguity regarding the scope of this process as well as the amount of compensation that would need to be paid to the owner of the dam; see M. Hepola, A. Iho & A. Belinskij, 'Vesivoimalaitoksen arvon määrittäminen erityisesti pienvesivoiman kohdalla' (2023) 1 *Ympäristöjuridiikka*, pp. 7–33, at 9.

¹⁵⁶ Ch. 3, ss. 21, 22 WA.

¹⁵⁷ A. Belinskij & N. Soininen, 'Vaelluskalakantojen oikeudellinen elvyttäminen ja vesivoima' (2017) *Ympäristöpolitiikan ja -oikeuden vuosikirja*, pp. 89–148, at 128–30; S.T. Puharinen, 'Vesienhoidon ympäristötavoitteiden vaikutus ympäristöluvan ja vesitalousluvan pysyvyyteen' (2017) *Ympäristöpolitiikan ja -oikeuden vuosikirja*, pp. 153–224, at 193.

¹⁵⁸ Puharinen, *ibid.*, p. 206.

current permit review system requires authorities to conduct studies and apply for permit reviews, which are very burdensome and time-consuming processes.¹⁵⁹

Complicating implementation of the WFD further, the general rule in Finnish water law is that the water legislation that was in force when a project was initiated and permitted continues to apply to the operation even if the legislation has been revised or repealed, unless the new legislation specifically states otherwise.¹⁶⁰ As all hydropower operations currently active in Finland were permitted under older legislation, the current preconditions under the WA for reviewing permits do not automatically apply to any facility.¹⁶¹ Yet, the WA includes transitional provisions that allow its permit review provisions to be applied to older permits if certain additional preconditions are met, including the requirement that the review is considered necessary in the public interest.¹⁶² In practice, this means that when the authorities seek to initiate reviews for the oldest permits – those often most acutely in need of revision – they need to invoke extensive justifications for doing so. This being the case, it has proven almost impossible to introduce new requirements in a permit review for small and medium-sized hydropower plants that entirely lack river connectivity and fisheries measures (so-called zero-requirement permits).¹⁶³ Recently, however, a committee organized under the Ministry of Justice put forward a proposal to amend the WA in this respect.¹⁶⁴ It addresses only the most pressing issue in the sector – zero-requirement permits – and thus will not create a more agile system for permit reviews, although a comprehensive system is needed.

One underlying reason for the strong permanence accorded to hydropower permits in the Finnish water law tradition is that the power associated with water running in a river is considered private property.¹⁶⁵ While rights to this property originally belong to the riparian landowners, the WA permit process allows hydropower operators to purchase or lease these rights to utilize the river in energy production.¹⁶⁶ Accordingly, operators have legal protection based on the right to property for their use of the water flows within the limits of the permit. This being the case, a permit review is generally possible only when it will not significantly reduce the benefit gained from the facility or when the permit holder is fully compensated for other than minor financial losses.¹⁶⁷

¹⁵⁹ Ch. 3, ss. 21, 22 WA.

¹⁶⁰ S. 19(4) WA.

¹⁶¹ Notably, the 1902 Water Rights Act (Vesioikeuslaki (31/1902)) and the 1961 Water Act (Vesilaki (62/1961)).

¹⁶² S. 19(10) WA.

¹⁶³ Case No. 1160 of the Supreme Administrative Court, 4 Apr. 2013; Belinskij & Soininen, n. 157 above, pp. 133–4; Soininen et al., n. 1 above, p. 325.

¹⁶⁴ Oikeusministeriö (Ministry of Justice), 'Vesilain tarkistaminen', 7 Aug. 2023, available at: <https://oikeusministerio.fi/en/project? tunnus=OM039:00/2019>.

¹⁶⁵ Belinskij & Soininen, n. 157 above, pp. 96–7; M. Hepola, *Oikeusvoimaopin transformaatio: siviiliprosessioikeudellisen oikeusvoimaopin muuttuminen ja siirtyminen hallinto- ja ympäristöoikeuteen ympäristöluvan pysyvyyden kannalta* (Edita, 2005), pp. 423–4; M. Hepola, 'Kalatalousvelvoite muutoksen tuulissa', in J. Eklund (ed.), *Vesi, ympäristö ja oikeus: Jublakirja Pekka Kainlaurille* (Vaasan hallinto-oikeus, 2007), pp. 209–55, at 254.

¹⁶⁶ S. 2(13) WA.

¹⁶⁷ Case No. 1160 of the Supreme Administrative Court, 4 Apr. 2013; Belinskij & Soininen, n. 157 above, pp. 133–4; Soininen et al., n. 1 above, p. 325.

Although the European Commission has repeatedly urged Finland to review hydropower permits,¹⁶⁸ permit review has received little attention in the Finnish RBMPs. In the current programmes of measures, certain measures, such as dam bypasses and improved ecological flows, have been put forward at the general level.¹⁶⁹ However, apart from a few exceptions, the required facility-level permit review processes have not been specified in the programmes or initiated in practice. As a result of the extensive legal hurdles described above, only a few hydropower permit reviews have been initiated during implementation of the WFD. The Kemijoki and Iijoki rivers – which accommodate eight and five large hydropower dams, respectively – are two prominent cases where conditions of fisheries are being updated, albeit in a process that started in 2017 and is still ongoing.¹⁷⁰ More recently, a permit review application has been submitted regarding two hydropower operations on the Kymijoki river in South-East Finland.¹⁷¹ While these will probably be trailblazer cases, the Kemijoki and Iijoki examples also illustrate how much time and effort permit reviews require of the Finnish authorities.

Given the stagnation in the legal framework on permit review, Finnish water management has leaned towards attempts to justify the lack of progress in the sector. Many of the riverine water bodies dammed for hydropower generation have been classified as heavily modified. The legal challenge from a WFD perspective is that there is no clear national definition for what constitutes a ‘significant adverse effect’ for the energy system in defining GEP objectives.¹⁷² Moreover, the actual decision making in designating a given water body an HMWB and establishing its GEP objectives is handled primarily by ‘expert judgment’ in the preparation of RBMPs.¹⁷³ However, these typically lack a thorough review of alternative electricity generation methods or any overall perspective on the needs of the national energy system. Finally, the assessment of a ‘significant adverse effect’ is carried out on a case-by-case basis for each hydropower operation, with a primary focus on the operator’s financial situation and the

¹⁶⁸ European Commission, ‘Report on the Progress in Implementation of the Water Framework Directive Programmes of Measures’, 9 Mar. 2015, SWD(2015) 50 final, pp. 60–8, 108–9; European Commission, ‘Second River Basins Management Plans – Member State: Finland’, 26 Feb. 2019, SWD(2019) 46 final, p. 140.

¹⁶⁹ See P. Räninä et al. (eds), ‘Kemijoen vesienhoitoalueen toimenpideohjelma vuosille 2022–2027’, Lapin ELY-keskus (Lapland Centre for Economic Development, Transport and the Environment), 15 Nov. 2022, available at: <https://www.doria.fi/bitstream/handle/10024/185061/Kemijoen%20vesienhoitoalueen%20toimenpideohjelma%202022-2027.pdf?sequence=3&isAllowed=y>.

¹⁷⁰ Iho et al., n. 8 above, p. 117.

¹⁷¹ Kaakkois-Suomen ELY-keskus (Southeast Finland Centre for Economic Development, Transport and the Environment), ‘Kalatalousviranomaisen hakee muutosta Kymijoen länsihaaran vesivoimalaitosten kalatalousvelvoitteisiin’, 27 Apr. 2023, available at: <https://www.sttinfo.fi/tiedote/kalatalousviranomaisen-hakee-muutosta-kymijoen-lansihaaran-vesivoimalaitosten-kalatalousvelvoitteisiin?publisherId=69817877&releaseId=69975960>.

¹⁷² Ympäristö.fi (joint website of Finland’s environmental administration), ‘Keinotekoiseksi tai voimakkaasti muutetuksi nimettyjen vesimuodostumien luokittelun ohjeistus vuosille 2022–2027’, 26 Aug. 2021, available at: <https://www.ymparisto.fi/fi/luonto-vesistot-ja-meri/vedet-ja-vesistot/vesien-ja-merensuojelu/vesien-ja-merenhoidon-suunnitteluoppaat-asiantuntijoille#vesimuodostumien-tilan-arviointi-2022-2027>.

¹⁷³ Ibid.

costs of mitigation measures, rather than considering the facility's broader societal benefits.¹⁷⁴

RBMPs in Finland have also made use of the exemptions allowed under the WFD. At present, notwithstanding the less-demanding ecological quality criteria for HMWBs, 66% of Finland's HMWBs fail to comply with GEP.¹⁷⁵ Thus far, Finland has applied extensions to the deadline for reaching GES and GEP until 2027, but it has chosen not to set less stringent environmental objectives.¹⁷⁶ However, Finland will presumably be forced to invoke the latter option from 2027 onwards, as the third cycle of RBMPs contains rather few concrete measures to mitigate the pressure from hydropower and the legal setting poses challenges in taking any measures. There are, however, no national policy guidelines on applying less stringent environmental objectives in the case of hydropower that would ensure that the overall energy system and alternative energy generation methods are given due consideration.

4.2. Other Governance Initiatives

Because of the limitations of the current legal framework on implementing the WFD, the past decades have witnessed other policy efforts to revitalize migratory fish stocks and restore ecological flows to Finnish rivers. Firstly, in 2012, the Finnish government issued a National Fishway Strategy, which was designed to restore the natural reproductive cycle of migratory fish populations and prioritize watersheds with the highest potential in this respect.¹⁷⁷ The Strategy includes both funding and guidance for the public authorities to aid river restoration projects and to take on re-permitting processes. Overall, the ambitious goals of the strategy remain largely unrealized even a decade after its introduction, not least because of the legal challenges associated with initiating permit reviews.

Secondly, in the spirit of the 2012 Strategy, the current NOUSU Programme, funded by the government, focuses on removing barriers to fish migrations.¹⁷⁸ To date, the programme has already succeeded in removing several dams and in funding measures to create bypass channels and enhance ecological flows.¹⁷⁹ Among other things, the NOUSU Programme provides leverage funding for collaborative processes that aim to remove small hydropower dams. The programme is voluntary for hydropower facility owners. It makes use of a specific, science-based hydropower value assessment tool

¹⁷⁴ *Ibid.*; Rääinä et al. (eds), n. 169 above, pp. 105, 129–30.

¹⁷⁵ Suomen ympäristökeskus, 'Suuret järvet kunnossa, rannikkovesien tila kehno', 2 Oct. 2013, available at: https://www.syke.fi/fi-FI/Ajankohtaista/Tiedotteet/Suuret_jarvet_kunnossa_rannikkovesien_til_26640.

The figure is still valid today.

¹⁷⁶ Ympäristö.fi, 'Vesienhoidon toimenpiteiden suunnittelu vuosille 2022–2027, Ympäristötavoitteiden asettaminen ja ympäristötavoitteista poikkeaminen', 17 Sept. 2020, p. 15, available at: https://www.ymparisto.fi/sites/default/files/documents/Ymp%C3%A4rist%C3%B6tavoitteiden_asettaminen_ja_ymp%C3%A4rist%C3%B6tavoitteista_poikkeaminen_ohjeistus_vuosille_2022_2027%20%281%29.pdf.

¹⁷⁷ Valtioneuvosto, 'Kansallinen kalatiestrategia: valtioneuvoston periaatepäätös 8.3.2012', 8 Mar. 2012, available at: https://mmm.fi/documents/1410837/1516655/1-4-Kansallinen_kalatiestrategia2012.pdf/fac1c9f2-2908-4859-82ce-0b46c612f179.

¹⁷⁸ Ministry of Agriculture and Forestry, n. 29 above.

¹⁷⁹ Hepola, Iho & Belinskij, n. 155 above, p. 24.

to establish the present net value of the facility.¹⁸⁰ Determining the value of a hydropower facility is an essential element of negotiations for dam deconstruction, and the removal of a dam can often be timed to coincide with major environmental or technical investments in hydropower to minimize the use of public funding for removal.¹⁸¹

Thirdly, Watershed Visions – a set of collaborative governance processes to reconcile conflicting interests concerning the use of rivers – is another example of a governance initiative that extends beyond formal law.¹⁸² The processes are typically initiated by regional authorities and engage with hydropower operators and civil society actors.¹⁸³ The objective is to design a long-term programme for the achievement of shared water use and protection interests. Processes of this nature may also facilitate measures to improve river connectivity.¹⁸⁴ One of the most notable examples of a Watershed Vision process enhancing hydropower adaptation in Finland is the initiative implemented on the Iijoki river between 2016 and 2018.¹⁸⁵ As the Iijoki has five large hydropower facilities, migratory fish protection measures were one of the central elements in the process. The vision is that solutions that enable migratory fish to move upstream and downstream will enable natural reproduction of migratory fish by 2030. To this end, fish passes and downstream migration solutions need to be built, spawning areas must be restored, and energy production and fish migration must be balanced. To support these solutions, an advisory committee has been set up with representatives of the municipalities and organizations in the Iijoki region.¹⁸⁶ Surprisingly, the vision for the Iijoki does not address the permit reviews needed, even though a review process was under way in the region at the same time as the vision was elaborated.

To sum up, the Finnish framework includes some promising voluntary processes that may enhance fish migration. In particular, the NOUSU Programme has led to concrete dam removals and mitigation measures, while Watershed Visions have provided a promising avenue to balance various river uses and protection interests in the long term. These voluntary processes are often driven by the government or regional authorities. They can be described as collaborative, bottom-up processes in that they are voluntary and participatory, and their governance objectives are decided in a collective decision-making process instead of being set out in the law.¹⁸⁷ Nevertheless, these processes also clearly operate in the shadow of the law, as the current permit conditions, the possibilities and limitations of permit

¹⁸⁰ Ibid., pp. 24–5.

¹⁸¹ Ibid., p. 25.

¹⁸² See L. Halonen & J. Similä, ‘Ympäristösääntely ja itseorganisoituminen – tapaus vesistökuunnostukset’ (2020) 1 *Ympäristöjuridiikka*, pp. 7–38, at 31.

¹⁸³ See, e.g., Oulujoen vesistöalueen vesistövisio (Watershed Vision for the Oulujoki watershed), 7 Aug. 2023, available at: <https://oulujokivisio.com>.

¹⁸⁴ Halonen & Similä, n. 182 above, pp. 31–2.

¹⁸⁵ Pohjois-Pohjanmaan liitto (Council of Oulu Region), ‘Iijoen vesistövisio 2030’, 7 Aug. 2023, available at: <https://www.pohjois-pohjanmaa.fi/wp-content/uploads/2020/09/B96.pdf>.

¹⁸⁶ Ibid.

¹⁸⁷ See generally C. Ansell & A. Gash, ‘Collaborative Governance in Theory and Practice’ (2008) 18(4) *Journal of Public Administration Research and Theory*, pp. 543–71, at 544.

reviews provided in the law, and the legal weight of the water management objectives may influence their results.¹⁸⁸

5. Discussion

Although Sweden and Finland have both been characterized as model students in the implementation of EU law in general,¹⁸⁹ the WFD requirements on hydropower have posed a major challenge for both countries. The Directive's review requirement for existing hydropower permits ran against the water law frameworks of both countries, which had incorporated a strong permanence for hydropower permits that shielded permits from revision.¹⁹⁰ Interestingly, despite having clearly similar legal and constitutional frameworks, as well as administrative and institutional structures,¹⁹¹ the two countries are remarkably different in the changes that they instituted in order to implement the substantive requirements of the WFD for hydropower.

Sweden has conducted a comprehensive regulatory overhaul, introducing a systemic approach to renewing hydropower permits. In practice, it has abandoned its former permanence doctrine: it now requires permit holders to apply for re-permitting and it is the hydropower sector, rather than the government, that compensates individual operators for subsequent financial losses. Driven by the Commission's infringement actions, these developments significantly improve the legal transposition of WFD requirements on re-permitting hydropower. Yet, while this top-down, government-led model contributes to the effective implementation of the Directive, little or no discretion is left for formulating policies at the regional and local levels or for collaborative initiatives, processes that initially were to be the core of the river basin governance approach of the WFD.¹⁹²

Finland, for its part, still faces considerable challenges in the formal transposition and implementation of the WFD, as legislation concerning the re-permitting of hydropower operations has shown a conspicuous lack of progress during the Directive's

¹⁸⁸ See generally T.A. Börzel, 'Governance without Government: False Promises or Flawed Premises?', DFG Research Center (SFB), *SFB-Governance Working Paper Series*, No. 23, Mar. 2010, pp. 17–8, available at: https://www.sfb-governance.de/en/publikationen/sfb-700-working_papers/wp23/SFB-Governance-Working-Paper-23.pdf.

¹⁸⁹ G. Falkner et al., *Complying with Europe: EU Harmonisation and Soft Law in the Member States* (Cambridge University Press, 2015), pp. 319–25; T. König & B. Luetgerdt, 'Troubles with Transposition? Explaining Trends in Member-State Notification and the Delayed Transposition of EU Directives' (2008) 39(1) *British Journal of Political Science*, pp. 163–94, at 172–3, 175.

¹⁹⁰ In general, the level of harmony between the WFD and the existing national administrative structures and policy instruments affects the level of compliance in implementing EU law; see F. Duina, 'Explaining Legal Implementation in the European Union' (1997) 25(2) *International Journal of the Sociology of Law*, pp. 155–79, at 175–6; C. Knill, 'European Politics: The Impact of National Administrative Traditions' (1998) 18(1) *Journal of Public Policy*, pp. 1–28, at 24–5.

¹⁹¹ Both countries are characterized as centralized states, as opposed to systems with high levels of regional autonomy; see A. Héritier, "'Leaders" and "Laggards" in European Clean Air Policy', in B. Unger & L. van Waarden (eds), *Convergence or Diversity: Internationalization and Economic Policy Response* (Avebury, 1995), pp. 278–306, at 278–9; R. Thomson, 'Same Effects in Different Worlds: The Transposition of EU Directives' (2009) 16(1) *Journal of European Public Policy*, pp. 1–18, at 9.

¹⁹² See also Söderasp, n. 17 above, p. 133.

implementation. In stark contrast to the Swedish system, it seems that Finland has adopted a more bottom-up, case-by-case approach, which relies on governmental programmes, funding, and guidance to promote the achievement of the WFD objectives. While strong on subsidiarity, the Finnish framework hardly qualifies as appropriate implementation of the WFD, as it lacks the necessary safeguards to ensure effective and proper fulfilment of its requirements. The Finnish approach also contains a paradox in that its interest in bottom-up governance has been sparked by the ineffectiveness of the national government. However, the effectiveness of that governance depends ultimately on the involvement of the government, not the least by providing sufficient legal regulation to enable taking measures to address the challenges.¹⁹³

From a comparative perspective, some specific elements in the implementation of the WFD merit a closer look. The Swedish governance framework constitutes a systems approach. Ecological requirements and the needs of the energy system are reconciled top-down, and the outcome of this process is then translated into individual water management decisions and permit reviews. With respect to implementation of the WFD, the country's central government aims to ensure that ecological objectives may be relaxed only to serve the society's general interests. In Finland, the case-by-case approach followed at the river-basin level, which lacks clear guidance from central government, has failed to generate a comparable systems perspective on hydropower governance. This shortcoming can undermine implementation of the WFD, including in designating water bodies as HMWBs, defining GEP objectives, and applying exemptions to accommodate operators' interests over the general interests of society. This bias also risks creating yet another policy construct that shields hydropower from change.

Yet, Sweden's formalized thresholds for establishing the significant adverse effect that warrants the designation of a water body as a HMWB also protect the stability of operations and may prevent their adaptation in response to future developments in the energy system.¹⁹⁴ The structure of energy supply will presumably evolve as production from other renewable sources increases and power grid-balancing technologies further develop during the 25-year implementation period of the national plan. Nevertheless, it is unclear whether policy can be adapted to the developments envisaged. This entails the risk that Sweden will still not meet the demands of the WFD for adaptive, periodic assessment of HMWBs, GEP definitions, and less stringent environmental objectives.¹⁹⁵

In Finland, these parameters are updated, if necessary, every six years in the RBMPs. They could – at least in theory – keep pace with technological developments and new knowledge, but the lack of a systems perspective threatens to undermine these aspirations. What is more, the Finnish governance model is perhaps more susceptible to short-term disruptions than is the Swedish model, as illustrated by the energy crisis following the Russian invasion of Ukraine. The threat of a power shortage and the rising price of electricity made hydropower more profitable and reduced the willingness of

¹⁹³ See Börzel, n. 188 above, pp. 17–8.

¹⁹⁴ SWaM 2016, n. 133 above, p. 37; Lindström & Ruud (2017b), n. 1 above, pp. 13–4.

¹⁹⁵ Arts 4(3)(b) and 4(5)(d) WFD.

hydropower owners to engage in negotiations under the NOUSU Programme about the government purchasing and deconstructing facilities.¹⁹⁶ Yet, the energy crisis has had an impact on the Swedish regime, too, as the government has recently proposed suspending permit reviews for at least a year because of the situation of the energy market.¹⁹⁷ However, it is now evident that this concession was only a short-term response to what was an instantaneous shock, as electricity prices have now stabilized in both countries. In the bigger picture, the energy transition predominantly entails developing other sources of renewable energy.¹⁹⁸ In turn, the hydropower sector continues to face calls for structural changes and adaptation based on the urgency of addressing biodiversity loss and degradation of aquatic ecosystems.¹⁹⁹

For numerous water bodies affected by hydropower in both countries, the attainment of GES or GEP is unlikely within the 2027 time frame required by the WFD. After that deadline, Member States cannot legitimately extend the deadlines for achieving the WFD objectives to postpone the necessary water management measures – such as permit reviews – as further extensions are allowed based only on natural conditions prevailing in the water bodies. In practice, this leaves Member States with two options: (i) taking the risk of non-compliance and infringement actions by continuing water management efforts without proper justification for the delays in water management measures and realizing the water management objectives, or (ii) invoking Article 4(5) of the Directive and setting less stringent environmental objectives for all water bodies, in cases where the 2027 deadline was not met based on failure to implement the necessary measures on time.

In Sweden, the permit reviews will take approximately 25 years, according to the national plan, which means that some measures to reach GES or GEP will not be implemented until the period between the 2030s and 2050s.²⁰⁰ This approach appears to illustrate the first option in addressing the 2027 deadline. At the same time, however, Sweden is moving towards a large-scale application of Article 4(5) WFD, as less stringent environmental objectives will be set for several water bodies to protect the power generation and regulation contribution of the largest hydropower facilities. In Finland, the measures necessary to mitigate the pressure from hydropower and to achieve GES and GEP were not outlined in the third cycle of RBMPs. Furthermore, these measures will not be implemented before 2027 as a result of the inadequate legal framework and the slow pace of the few ongoing review processes. Although Finland has not set less

¹⁹⁶ Hepola, Iho & Belinskij, n. 155 above, pp. 27–8.

¹⁹⁷ Ministry of the Environment 2022, n. 121 above, p. 18.

¹⁹⁸ See, e.g., European Commission, n. 6 above, pp. 6–11.

¹⁹⁹ Most notably, the EU Biodiversity Strategy emphasizes restoring freshwater ecosystems and the natural functions of rivers in order to achieve the objectives of the WFD by removing or adjusting barriers that prevent the passage of migrating fish and improving the flow of water and sediments. In addition, it sets a target that at least 25,000 kilometres of rivers will be restored into free-flowing rivers by 2030 by the removal of primarily obsolete barriers: European Commission, 'EU Biodiversity Strategy for 2030: Bringing Nature Back Into Our Lives', 20 May 2020, COM(2020) 380 final, p. 12. These ambitions were proposed to be translated to legal requirements in the Commission's proposal for the EU Nature Restoration Law; see European Commission, 'Proposal for a Regulation of the European Parliament and of the Council on Nature Restoration', 22 June 2022, COM(2022) 304 final, proposed Art. 7.

²⁰⁰ SWaM et al. 2019, n. 113 above.

stringent environmental objectives for any river system to date, the next RBMPs are most likely to exercise the second option in accommodating the WFD's 2027 deadline. This approach includes a large-scale application of less stringent environmental objectives as a result of the slow and virtually non-existent progress in enhancing water status in water bodies affected by hydropower. It is questionable, however, whether the European Commission agrees that the grounds for applying Article 4(5) WFD are met if and when few efforts have been made to mitigate the pressures during the previous three river-basin management cycles.

In both countries, the effectiveness of existing governance arrangements in protecting riverine ecosystems remains unclear. Although Swedish policy ensures that all hydropower permits will be reviewed, the reviews still have to be carried out. While Swedish law now allows revocation of permits, it is still uncertain whether this option will be utilized to free at least some rivers completely. Merely amending existing permits to include mitigation measures – the effectiveness of which is not guaranteed – might not produce the most effective ecological or economic outcome.²⁰¹ Conversely, in Finland, there is significant uncertainty regarding the effectiveness of the governance model. While the NIOUSU Programme and Watershed Visions can target the most important watersheds, which makes it possible to free smaller rivers completely, the outcome of those efforts depends on the cooperation of hydropower operators, and the availability of public and private funding. Currently, it is unclear whether mitigation measures can be incorporated into (m)any permits because of the vagueness of the legislation and the lengthy duration of permit review processes.

6. Conclusion

Despite the ambitions of the WFD, thus far it has not been entirely successful in promoting transformative changes in key water-use sectors, and its implementation has produced little improvement in the aquatic environment.²⁰² In general, the difficulties that legal instruments such as the WFD face in trying to reconcile aspirations of more flexible and adaptive governance approaches with traditional legal requirements are well known.²⁰³ This article has provided an analysis of the challenges faced by the WFD in this respect both in relation to the national constitutional and water law traditions of two EU Member States and in fitting the Directive into the general EU legal system frames in the context of one of the key pressure sectors, hydropower.

²⁰¹ See Iho et al., n. 8 above, pp. 193, 195.

²⁰² European Commission, 'Report from the Commission to the European Parliament and the Council on the Implementation of the Water Framework Directive (2000/60/EC) and the Floods Directive (2007/60/EC)', 26 Feb. 2019, COM(2019) 95 final, p. 3.

²⁰³ See, e.g., T.H. Profeta, 'Managing Without a Balance: Environmental Regulation in Light of Ecological Advances' (1996) 7(1) *Duke Environmental Law and Policy*, pp. 71–103, at 86; A.S. Garmestani & M.H. Benson, 'A Framework for Resilience-based Governance of Social-Ecological Systems' (2013) 18(1) *Ecology and Society*; J.B. Ruhl, 'Regulation by Adaptive Management: Is It Possible?' (2006) 7(1) *Minnesota Journal of Law, Science and Technology*, pp. 21–57; J.B. Ruhl, 'Thinking of Environmental Law as a Complex Adaptive System: How to Clean Up the Environment by Making a Mess of Environmental Law' (1997) 34(4) *Houston Law Review*, pp. 933–1002; T. Paloniitty, *Law, Ecology, and the Management of Complex Systems: The Case of Water Governance* (Routledge, 2023), pp. 100–47.

Based on our analysis, we argue that the innovative governance approach of the WFD has met considerable challenges in forging a transformation in conventional legal settings at the national level in both Finland and Sweden. Finland's experiences highlight challenges to the Directive's bottom-up policy aspirations: its governance approach and aspirations of flexibility have met expectations but have failed to trigger notable changes in traditional legal structures or improvement in water status. As the example of Sweden shows, the WFD has responded to these realities and developed towards being a more traditional, formalistic legal instrument, enabling it to increase the legal enforceability of its requirements through EU infringement proceedings. While now more effective in transforming hydropower policy, the implementation of the Directive, however, has lost certain crucial characteristics of a governance approach in EU law, including adaptive capacity and policy formulation at the river-basin district level.

Member States are confronted with somewhat contradictory mandates in the formulation and implementation of water management policies, which are not easily reconciled. On the one hand, they have to meet the WFD's initial demands for flexible, bottom-up management policies while, on the other hand, they must fulfil the general EU law requirements of legal effectiveness and formalism. In both Sweden and Finland, this impasse has resulted in extensive use of exemptions from the water management objectives, but for different reasons.

In Sweden, the hydropower policy is attempting to effectively implement the WFD by stipulating strict legal requirements for permit reviews. Simultaneously, the government is employing strategic and extensive use of the exemptions to reduce the sector's overall responsibilities. Conversely, legislators and policy-makers in Finland have failed to make the legislative and other reforms necessary to implement measures on hydropower. Because of the limitations of national legislation, water management authorities do not really have the necessary tools to tackle the problem and need to resort to exemptions to justify the lack of progress. Accordingly, the comparison shows concretely how the legal challenges shaping the WFD's implementation have created a structural problem: the overuse of exemptions, which has become one of the main reasons for the lack of progress in realizing the Union's ecological ambitions.²⁰⁴ It remains to be seen whether the Commission will try to remedy this by pushing Member States towards more formal implementation outcomes, including by initiating infringement proceedings against Finland for its failure to ensure reviews of hydropower permits, as it did with Sweden.

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²⁰⁴ European Commission, n. 202 above, pp. 4–5.

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