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How to Build Your Own Electrolyser

Pitfalls and Challenges of the Permitting Procedures in Finland

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13.1 INTRODUCTION TO THE RENEWABLE HYDROGEN PERMITTING REGIME IN FINLAND

In Finland, permitting practices for renewable hydrogen electrolysers are only just starting to develop. Permitting procedures are still fragmented and there is no so-called one-stop shop for hydrogen electrolyser permits.[1] Several different permits by different authorities are required and the permit procedures are usually independent of each other.[2] This chapter investigates the current permitting regime and makes suggestions for improvements.

Complicated permit procedures can be a challenge for setting up new hydrogen electrolysers to produce renewable hydrogen in Finland. They can take a considerable amount of time and the permitting process is one of the key factors that significantly impacts decisions on investment in renewable hydrogen, according to a Finnish government study on the opportunities and limitations of the hydrogen economy and its development in Finland.[3] Because of this, a seamless permit procedure would work as an advantage to Finland and is something envisaged by the Finnish government.[4] A well-functioning and relatively easy permitting procedure will be an advantage in attracting foreign investment for renewable hydrogen electrolyser projects and can help Finland in meeting its renewable hydrogen production goals.[5]

Luckily, most permitting applications can be done online and the authorities can also be contacted digitally.[6] The different authorities dealing with permits in Finland are mainly municipal authorities and the Regional State Administrative Agency; for energy projects like

[1] Karoliina Rytkönen, 'Green Hydrogen Finland' (Bergmann Attorneys at Law, February 2023) <https://bergmann.fi/pdf/green_hydrogen_finland_2023.pdf> accessed 30 January 2024.

[2] Ibid.

[3] Leena Sivill et al., *Hydrogen Economy – Opportunities and Limitations* (Publications of the Government's Analysis, Assessment and Research Activities 2022) 77.

[4] Ministry of Economic Affairs and Employment, 'Government adopts resolution on hydrogen – Finland could produce 10% of EU's green hydrogen in 2030' (Finnish Government, 9 February 2023) <https://valtioneuvosto.fi/en/-//1410877/government-adopts-resolution-on-hydrogen-finland-could-produce-10-of-eu-s-green-hydrogen-in-2030> accessed 30 January 2024.

[5] Ibid.

[6] Centre for Economic Development, Transport and the Environment, *Uusiutuvan energian tuotantolaitosten lupamenettelyt ja muut hallinnolliset menettelyt: Menettelykäsikirja hakijoille* (Etelä-Pohjanmaa Centre for Economic Development, Transport and the Environment 2023) 5.

hydrogen production the Energy Agency is also relevant.[7] Usually, the permit procedure for industrial plants, such as electrolysers, consists of an environmental permit under the Environmental Protection Act (527/2014), a water use permit under the Water Act (587/2011), a building permit and possible changes to zoning under the Land Use and Building Act (132/1999). Several other permits, such as those related to safety, are also needed for building an electrolyser, but they will not be covered in this chapter.

As an example of a currently ongoing renewable hydrogen project permitting procedure time frame, it is estimated that the permitting process for a 200-megawatt hydrogen and synthetic methane production plant in Kristinestad will take approximately 1–1.5 years.[8] This project has already received some of the permits, including for water use, but is still missing a handful of permits, such as environmental, chemical and change in the zoning plans, which is needed for the realization of the plant.[9] Another ongoing renewable hydrogen project is a 300-megawatt hydrogen production plant in Kokkola producing hydrogen from renewable electricity and ammonia.[10] The permit process for this hydrogen plant, which will be Finland's biggest hydrogen plant, is estimated to take a total of three years.[11]

Public hearings or obtaining statements are often also part of permit procedures and can take extra time.[12] In order to stay within the project schedule, it is therefore important to get well acquainted with the permit procedures and plan accordingly.[13] It is usually foreseeable how long processing a particular permit can take – for example, the maximum time for processing the environmental and water use permits should be twelve months, in accordance with the amended Act on the Handling of Environmental Protection and Water Matters in the Regional Administrative Agency (898/2009).[14] However, it is not possible to know in advance whether the authorities are satisfied with all the documentation. This is one of the reasons why it is good to become well acquainted with the permit process and requirements and also why authorities offer guidance in filling in the applications.[15] This includes both extensive guidance documents online for filling in particular permits as well as the ability to schedule a meeting where the authorities help you apply for a permit in person.[16] The permit authorities are usually very approachable and available for answering questions; at least many foreign investment companies have praised their interactions with Finnish public authorities.[17]

[7] Ibid.

[8] Visa Noronen, '10 reasons why Germans are investing in the hydrogen industry in Kristiinankaupunki' (BotH2nia, 9 November 2022) <https://both2nia.com/en/news/10-reasons-why-Germans-are-investing-in-the-hydrogen-industry-in-Kristiinankaupunki> accessed 30 January 2024.

[9] Ibid.

[10] Visa Noronen, 'Analysis: wind, industry and hydrogen pipeline to bring Finland's largest hydrogen plant to Kokkola' (BotH2nia, 15 November 2022) <https://both2nia.com/en/news/Analysis-wind-industry-and-hydrogen-pipeline-to-bring-Finland-s-largest-hydrogen-plant-to-Kokkola> accessed 30 January 2024.

[11] Ibid.

[12] Claudia Greiner, 'Procedures and permits for industrial building projects in Finland' (Bergmann Attorneys at Law, September 2022) <https://bergmann.fi/e/article/procedures_permits_building_projects> accessed 30 January 2024.

[13] Ibid.

[14] Act on the Handling of Environmental Protection and Water Matters in the Regional Administrative Agency (898/2009) art. 2a.

[15] Greiner, 'Procedures and permits for industrial building projects in Finland'.

[16] Centre for Economic Development, Transport and the Environment, 'Uusiutuvan energian lupaneuvonta' (7 June 2023) <https://ely-keskus.fi/web/uusiutuvan-energian-lupaneuvonta/etusivu> accessed 30 January 2024.

[17] OECD, 'Finland's business climate in the eyes of foreign investors' in OECD, *The Impact of Regulation on International Investment in Finland* (OECD Publishing 2021).

Because of these long permit processing times and their impact on investments, the government hopes for a smoother and faster permit process.[18] The National Climate and Energy strategy envisions a maximum one-year permit handling time for green projects.[19] This has already been passed by the government and introduced into legislation as a temporary amendment of the law on the handling of environmental protection and water matters in the Regional Administrative Agency (1144/2022).[20] It establishes a fast-track priority permit handling process for renewable energy projects that boost the green transition, including renewable hydrogen projects.[21] Section 13.4 of this chapter will cover the new fast-track procedure for renewable energy projects, which is also relevant for hydrogen electrolysers.

The following sections will detail which permits are necessary for renewable hydrogen electrolysers, starting with zoning, land use and building (Section 13.2) and then moving on to permits related to the environment (Section 13.3). At the end of this chapter, there will be a section covering the latest developments in the permitting regime relevant to renewable hydrogen electrolyser projects (Section 13.4). The following sections will also delve into the challenges of the permitting procedure which can act as pitfalls since they can deter investments in renewable hydrogen, and without investment new electrolysers cannot be built.

13.2 CHALLENGES OF THE PERMITTING PROCEDURES RELATED TO ZONING, PLANNING AND BUILDING

Land use planning in Finland is organized hierarchically.[22] At the top are national land use objectives that are set by the government.[23] The national land use objectives are binding, and the policy framework is established to offer guidance for land use for the whole country.[24] Regional land use plans are then created to guide regional development.[25] Based on the national objectives and regional land use plans municipalities will take the next steps in zoning and planning.

Municipalities are responsible for local master plans and local detailed plans.[26] Local master plans are made on the municipal level, which creates a general structure for the municipality.[27] Every municipality must prepare a local master plan.[28] Based on the Act on Municipalities (410/2015)[29] there exists the right to make a proposal for the municipality to draw up a plan.[30] So, for example, a renewable hydrogen production company could propose that the municipality draw

[18] Ministry of the Environment, 'Finland boosts green transition – in permit and appeal procedures priority given to investment projects' (8 September 2022) <https://ym.fi/-/vihrean-siirtyman-investointeja-vauhditetaan-etusijamenettelylla?languageId=en_US> accessed 30 January 2024.

[19] Ministry of Economic Affairs and Employment of Finland, *Carbon Neutral Finland 2035 – National Climate and Energy Strategy* (Ministry of Economic Affairs and Employment of Finland 2022) 29.

[20] Law on the temporary amendment of the law on the handling of environmental protection and water matters in the Regional Administrative Agency (1144/2022).

[21] Ibid., art. 2.

[22] OECD, 'The governance of land use: Country fact sheet Finland' (2017) <https://oecd.org/regional/regional-policy/land-use-Finland.pdf> accessed 30 January 2024.

[23] Ibid.

[24] Ibid.

[25] Land Use and Building Act (132/1999) art. 4.

[26] Ibid.

[27] Ibid.

[28] Ministry of the Environment, 'Land use planning' <https://ym.fi/en/land-use-planning> accessed 30 January 2024.

[29] Act on Municipalities (410/2015).

[30] Centre for Economic Development, Transport and the Environment, *Uusiutuvan energian tuotantolaitosten lupamenettelyt ja muut hallinnolliset menettelyt* 59.

up a local master plan to include zoning areas for hydrogen production. However, all decision power is still left to the municipality, which is responsible for drawing up such general plans.[31] The most specific form of planning is the local detailed plans, which outline which land plots can be used for certain activities and how buildings should be arranged.[32] It is also possible to request the municipality to make changes to the local detailed plans if necessary, but just as for local master plans, the municipality will have the power to decide to act on it or not.[33] The municipalities give planning permissions and issue building permits. They create building ordinances, which act as their primary tools to control construction.[34] Municipalities are therefore the most important actors regarding zoning and construction in Finland. The rules set out in the municipal building ordinances can vary significantly between different municipalities.

When creating the zoning plans, the zoning and planning authorities have to take into account various factors related to safety and environmental protection.[35] One condition is that industrial production plants are generally not allowed to be located near major groundwater areas,[36] due to concerns about pollution of the water supply.[37] Industrial areas are usually planned and zoned further from densely populated areas,[38] especially where hospitals and schools are located.[39] Additionally, proximity to areas important for nature is avoided.[40] This is due to possible hazards that the zoning authorities have to take into account.[41] The zoning authorities have to consider all these factors when they create their plans and therefore it is not up to the permit applicant. In zoning, the major decisions are made by the authorities and the applicant cannot usually choose a location that is not already designated for industrial purposes. The zoning plans in Finland are therefore quite rigid and it is important to consider them carefully: they need to allow the setting up of a new hydrogen production plant in the area.[42] Industrial production plants are only allowed in areas that are already reserved for industrial and storage operations.[43]

After permission from the municipality is received for the use of a plot of land dedicated to industrial purposes, a valid building permit under the Land Use and Building Act (132/1999) is always needed before any construction of the facility can take place.[44] The municipal construction authority will grant the building permit.[45]

When getting a zoning plan and a construction permit you mainly have to deal with the municipal authorities which are responsible for the local master plans and local detailed plans as

[31] Ibid. 58.
[32] Land Use and Building Act (132/1999) art. 4.
[33] Centre for Economic Development, Transport and the Environment, *Uusiutuvan energian tuotantolaitosten lupamenettelyt ja muut hallinnolliset menettelyt* 59.
[34] Ministry of the Environment, 'Land use planning'.
[35] Turvallisuus – ja kemikaalivirasto, 'Land-use planning' <https://tukes.fi/en/industry/land-use-planning> accessed 30 January 2024.
[36] Ibid.
[37] TUKES, *Tuotantolaitosten sijoittaminen* (Turvallisuus – ja kemikaalivirasto 2015) 25.
[38] Centre for Economic Development, Transport and the Environment, *Uusiutuvan energian tuotantolaitosten lupamenettelyt ja muut hallinnolliset menettelyt* 58.
[39] OECD, 'The governance of land use: Country fact sheet Finland'.
[40] Centre for Economic Development, Transport and the Environment, *Uusiutuvan energian tuotantolaitosten lupamenettelyt ja muut hallinnolliset menettelyt* 58.
[41] Turvallisuus – ja kemikaalivirasto, 'Land-use planning'.
[42] Ibid.
[43] Ibid.
[44] Land Use and Building Act (132/1999) art. 125.
[45] Ibid. art. 130.

well as the municipal building ordinance. Dealing almost exclusively with the municipal authorities can provide a couple of challenges that can hinder the setting up of electrolysers.

Firstly, many municipalities are quite small but still need to provide various and often specialized services.[46] This may lead to the municipal authorities being overloaded with tasks which can lead to longer permit approval and handling times.[47] Overdue permit processing times and long waits until approval is granted slow down investment projects and can lead to delays in investments because large amounts of capital are at a standstill.[48] Investors have felt that the processes taking a long time are particularly an issue with the approval of land use plans and with building permits.[49]

Another issue is that when things are decided on a municipal level, even when based on national objectives and guidelines, there will be large discrepancies between municipalities in what is permitted, and which conditions must be met, as well as how things are handled. This creates uncertainty for the investors.[50] Especially small and medium-sized enterprises view this uncertainty as a problem, and it is something that plays a negative role in their investment decisions.[51]

Also mentioned was that zoning plans created by zoning authorities are rigid and sometimes changing them can be difficult. Usually, industrial plants can only be set up on land that is already designated for industrial use in the zoning plans. There is a right to prompt the municipality to draw up specific plans or make necessary changes to already existing plans. But this is all at the discretion of the municipality and therefore there is no guarantee that they will decide to act on it. This could also be considered a factor that causes uncertainty, which can affect investment decisions – especially if the municipal authorities already have a lot on their hands due to their many responsibilities, which can negatively affect permitting and therefore investments. In such situations, it seems unlikely that the municipality would agree to change its original zoning plans. However, because large new investments also benefit the municipality and the local economy, municipalities should be willing to create space for industry and to draw up new plans if necessary. At least for some ongoing hydrogen projects, changes in the zoning plans were required and are now taking a long time to be approved.[52]

A further issue is that compared to zoning and planning in other countries, Finland has a high level of regulation and operational restrictions, which may constitute a barrier for investment.[53] However, this is less so for energy project development than for other industrial projects as in Finland there are no separate burdensome sector-specific regulations for energy projects, which exist in many other countries and can present a challenge.[54]

Long waiting times and bureaucracy are identified as particular issues in the Finnish zoning and construction permit regime by investors and are therefore the biggest challenge in the

[46] Jürgen Pucher, Haris Martinos and Wolfgang Schausberger, *Obstacles to Investments at Local and Regional Level* (European Union, the Committee of the Regions 2016) 39.
[47] OECD, 'Finland's business climate in the eyes of foreign investors'.
[48] Satu Räsänen, Jari Huovinen and Kati Ruohomäki, 'EK:n yrityskysely: Viranomaisprosessit nopeutuneet – silti 2,7 miljardin investoinnit kesken lupakäsittelyssä' (Confederation of Finnish Industries, 31 January 2019) <https://ek.fi/ajankohtaista/tiedotteet/ekn-yrityskysely-viranomaisprosessit-nopeutuneet-silti-27-miljardin-investoinnit-kesken-lupakasittelyssa/> accessed 30 January 2024.
[49] OECD, 'Finland's business climate in the eyes of foreign investors'.
[50] Ibid.
[51] Ibid.
[52] Noronen, '10 reasons why Germans are investing in the hydrogen industry in Kristiinankaupunki'.
[53] Pucher, Martinos and Schausberger, *Obstacles to Investments at Local and Regional Level* 46.
[54] Ibid.

permitting process.[55] Changes are currently being made to the system, which should bring some improvements. Based on a proposal that was adopted by the Parliament on 1 March 2023, the Land Use and Building Act (132/1999) will be amended and renamed the Zoning Act.[56] The amendments and new title come into force on 1 January 2025.[57] A new separate Building Act will also enter into force on 1 January 2025.[58] The new amendments aim at smoothing the construction process, boosting a circular economy and digitalization as well as improving the quality of construction.[59] Making the initial permitting process smoother would be an integral part of facilitating the construction process as a whole and it is hoped that when the amendments come into force they will have the desired effect.

13.3 PERMITS RELATED TO THE ENVIRONMENT AND THEIR CHALLENGING BUREAUCRACY

One of the most important types of permits needed for a hydrogen electrolyser is the environmental permit. Any activities that can negatively affect the environment require an environmental permit under the Environmental Protection Act (527/2014).[60] An environmental permit is needed for activities that affect water, air or soil, as well as activities that cause any noise or vibrations.[61] A precondition for receiving the environmental permit is that the activities do not cause health concerns or significant environmental pollution, or risk causing such pollution.[62] An environmental permit is necessary for energy projects as well as the production of steel and chemicals,[63] which are often tied together with renewable hydrogen production in Finland. The EU Industrial Emissions Directive (2010/75/EU)[64] is transposed to Finnish law mainly in the Environmental Protection Act (527/2014) and not as a separate act or decree, which is why considerations and assessments about emissions are part of the environmental permit.[65] Information about possible emissions, their effects and efforts at mitigation are required as part of the process of applying for an environmental permit; assessments on emissions are still required, but not under a separate permit. A renewable hydrogen electrolyser project also needs a water permit under the Water Act (587/2011) because large amounts of water are used for the electrolysis to produce renewable hydrogen and because a large hydrogen plant may have effects on water bodies on or surrounding the property where it is to be located.[66]

The environmental permit needs to be applied for digitally, at the regional state administrative authority or a municipal environmental protection authority,[67] depending on the size of the project.[68] Because renewable hydrogen electrolysis projects need both a water use permit and an

[55] OECD, 'Finland's business climate in the eyes of foreign investors'.
[56] Environmental Committee, 'Valiokunnan mietintö YmVM 27/2022 vp – HE 139/2022 vp' (Parliament of Finland 2023).
[57] Ibid.
[58] Ibid.
[59] Ibid.
[60] Environmental Protection Act (527/2014) art. 27.
[61] Government Decree on Environmental Protection (713/2014) art. 3 (6).
[62] Environmental Protection Act (527/2014) art. 2.
[63] Ibid. art. 27 & Annex 1.
[64] Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) (Recast) [2010] OJ L 158/25.
[65] Environmental Protection Act (527/2014).
[66] Water Act (587/2011) art. 3.3(2).
[67] Environmental Protection Act (527/2014) art. 39.
[68] Government Decree on Environmental Protection (713/2014) art. 1 & art. 2.

environmental permit, the permit needs to be applied for at the Regional State Administrative Authority.[69] If both an environmental permit and a water use permit are needed for the project, they can be applied for together and as a result only one permit is provided.[70] The reason these particular permits can be applied for together is that they are handled by the same authority and have some overlapping elements, especially in terms of environmental protection of waters and waterways. As stated earlier, the permitting process is still very fragmented; however, as the environmental and water permits cover similar things to an extent, they are a special case of permits that can be applied for at the same time.[71]

The environmental permit application needs to include basic information about the operator, the name of the facility, its location and the industry it is part of.[72] Other information that must be provided as part of the permit application is, for example, an assessment of the activity's effects on the surrounding nature and environment,[73] as well as a summary of the activities for which the permit is intended; this information will be used for the purpose of presenting the application to the public as part of the public consultation process related to permit applications.[74] For electrolyser permits, information on the fuels used, their storage, preservation and consumption, as well as the energy used or produced and the use of water is also relevant,[75] as is information on the raw materials, chemicals and other materials needed for production.[76] The same goes for their storage, preservation and consumption,[77] along with an assessment of the efficiency of the usage of energy and materials.[78] The necessity for these items will depend on which specific type of electrolyser will be used, for example whether any chemicals are involved in the process.

What information the environmental permit application needs to include is quite comprehensive, but this only symbolizes the fact that Finland takes environmental protection very seriously. However, strict environmental protection also brings more bureaucracy. A lot of bureaucracy can act as a barrier to investment.[79] One reason suggested for why bureaucracy negatively affects investment is that bureaucracy is interested in maximizing its own scope and influence and therefore has adverse effects on the incentives for investment.[80] This is how it is modelled in public choice literature.[81] Another point of view, also from public choice literature, proclaims that governments' coercive activities, such as licensing or permitting, act as restrictions and divert efforts away from investment.[82] Therefore, economic theory shows that bureaucracy can deter investment so that increased bureaucracy regarding environmental permits can be considered a difficulty for building new renewable hydrogen electrolysers.

There are other concerns with environmental permits that may also influence investment decisions. The more thorough the permit application documentation the better the chances of the permit being granted the first time around; it also makes the process easier for the authorities, as they do not need to request additional materials and information, which could delay the

[69] Water Act (587/2011) art. 2.22.
[70] Ympäristö, 'Ympäristölupa' <https://ymparisto.fi/fi/luvat-ja-velvoitteet/ymparistolupa> accessed 30 January 2024.
[71] Ibid.
[72] Government Decree on Environmental Protection (713/2014) art. 3 (1).
[73] Ibid. art. 3 (8).
[74] Ibid. art. 3 (4).
[75] Ibid. art. 3 (2).
[76] Ibid. art. 3 (3).
[77] Ibid. art. 3 (3).
[78] Ibid. art. 3 (4).
[79] Eliezer B. Ayal and Georgios Karras, 'Bureaucracy, investment, and growth' (1996) 51 Economics Letters 233, 1.
[80] Ibid. 6.
[81] Ibid.
[82] Ibid.

permit process. A delayed permit is also a disadvantage for the investors,[83] as already discussed to some extent when the influence of zoning and building permits on investment decisions was covered. In general, the Finnish permit process seems to be mainly designed from the point of view of the authorities, making it as easy and efficient as possible for them, rather than for the stakeholders who need the permits. To promote the building of more hydrogen electrolysers, the permit process should consider the stakeholders more.

There have been already some improvements in this regard as the Confederation of Finnish Industries (EK) has conducted surveys on how investors feel about the Finnish regulatory and permitting regime.[84] The companies were also able to give their opinions on how the permitting regime should be improved and which improvements they considered the most significant.[85] Particular points of complaint by investors were the long permitting times and increased bureaucracy related to the environmental permits.[86] The potential investors who took part in the survey wished in particular for legislative changes.[87] The government took note of this and implemented some changes in the form of a temporary amendment to the existing law.[88] This will be discussed in the next section.

13.4 ACCELERATED PERMITTING PROCEDURE FOR GREEN TRANSITION PROJECTS: AN IMPROVEMENT OR A PITFALL?

The permitting process in Finland is generally rather fragmented; however, for hydrogen projects, Finland aims to have a seamless permitting process in place in order to attract renewable hydrogen production and especially investments in renewable hydrogen production.[89] Part of this aim is the temporary legislative amendment presented in this section. The new priority procedure for green transition projects will be applied to environmental and water permits for renewable hydrogen electrolysers,[90] according to which the processing time should be a maximum of twelve months.[91]

The Finnish Parliament has passed a law on temporary amendment of the law on the handling of environmental protection and water matters in the Regional Administrative Agency (1144/2022). The temporary amendment adds Article 2a to the Act on the Handling of Environmental Protection and Water Matters in the Regional Administrative Agency (898/2009).[92] This temporary amendment provides a fast-track procedure for investment projects accelerating the green transition.[93] The Finnish Ministry of the Environment defines green

[83] OECD, 'Finland's business climate in the eyes of foreign investors'.
[84] Räsänen, Huovinen and Ruohomäki, 'EK:n yrityskysely: Viranomaisprosessit nopeutuneet'.
[85] Satu Räsänen and Jari Huovinen, 'EK:n lupajärjestelmäkyselyn tulokset' (Confederation of Finnish Industries, January 2019) <https://ek.fi/wp-content/uploads/L ?upajarjestelmakysely ?_infografiikka.pdf> accessed 30 January 2024.
[86] OECD, 'Finland's business climate in the eyes of foreign investors'.
[87] Räsänen and Huovinen, 'EK:n lupajärjestelmäkyselyn tulokset'.
[88] Law 1144/2022.
[89] Ministry of the Environment, 'Finland boosts green transition'.
[90] Law 1144/2022 art. 2a (3).
[91] Regional State Administrative Agency, 'Vihreä siirtymä – nopeampaa käsittelyä ympäristö- ja vesitalouslupahakemuk sille Etelä-Suomen aluehallintovirastossa' (11 April 2023) <https://avi.fi/tiedote/-/tiedote/69972864> accessed 30 January 2024.
[92] Law 1144/2022 art. 2a.
[93] Ministry of the Environment, 'Hallituksen esitys eduskunnalle eräiden vihreän siirtymän hankkeiden väliaikaista etusijaa aluehallintovirastojen lupakäsittelyssä vuosina 2023–2026 ja hallintotuomioistuimissa vuosina 2023–2028 koskevaksi lainsäädännöksi' (Finnish Government, 2022) <https://valtioneuvosto.fi/hanke?tunnus=YM019:00/2022> accessed 30 January 2024.

transition as 'a shift towards economically sustainable growth and an economy that is not based on fossil fuels and overconsumption of natural resources'.[94] This definition is quite fitting for renewable hydrogen production by electrolysis.

The temporary amendment will be in place between 2023 and 2026 and it covers permits under the Environmental Protection Act (527/2014) and the Water Act (587/2011), which are handled by the regional state administrative agencies.[95] Overall, as well as permit handling, the fast-track procedure will also apply to appeals concerning the permits in administrative courts.[96] This amendment further brings the Finnish legislation in line with EU Regulation 2020/852[97] establishing a framework to facilitate sustainable investment.[98]

With regard to renewable hydrogen, the fast-track procedure will apply to permit applications concerning 'the production and utilization of hydrogen, with the exception of the production of hydrogen from fossil fuels'.[99] Therefore, it will cover projects installing electrolysers for renewable hydrogen production. This definition only singles out hydrogen production from fossil fuels, but not hydrogen produced by nuclear energy, which is also carbon neutral, despite not generally falling under the definition of renewable hydrogen. Therefore, even electricity from nuclear energy could be used to run the electrolyser and it could still be considered a renewable hydrogen project in the Finnish context.

The main reason for proposing this amendment is that the biggest hindrance to large renewable energy and infrastructure development, such as renewable hydrogen projects, is usually the permitting process, which can take a considerable amount of time.[100] Another benefit of the law is that while projects supporting a green transition get priority, projects that cause harmful environmental impacts will not benefit from the fast-track permit handling.[101] This means that green energy projects can be realized more quickly than carbon-intensive energy projects.[102]

To qualify as an investment project boosting a green transition, the project has to follow the 'do no significant harm' principle.[103] The obligation not to cause significant harm is a key principle of international environmental law,[104] but it is new to Finnish environmental legislation.[105] The do no significant harm principle is part of the EU taxonomy for sustainable financing and is used as a condition of receiving funding under the EU Recovery and Resilience Facility.[106] Under the do no significant harm principle the project cannot cause harm to any of the six objectives of the EU taxonomy on environmental sustainability, laid down in Article 17 of the EU Regulation 2020/852: (1) climate change mitigation; (2) climate change

[94] Ministry of the Environment, 'What is the green transition?' (2022) <https://ym.fi/en/what-is-the-green-transition> accessed 30 January 2024.
[95] Law 1144/2022.
[96] Ministry of the Environment, 'Finland boosts green transition'.
[97] Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment and amending Regulation (EU) 2019/2088 [2020] OJ L 198/13.
[98] Law 1144/2022 art. 2a.
[99] Ibid. art. 2a(3).
[100] OECD, 'Finland's business climate in the eyes of foreign investors'.
[101] Ministry of the Environment, 'Hallituksen'.
[102] Ibid.
[103] Law 1144/2022 art. 2a.
[104] Pierre-Marie Dupuy and Jorge E. Viñuales, *International Environmental Law* (2nd ed., Cambridge University Press 2018) 140.
[105] Marius Schultén, 'The Finnish government proposes fast-tracking of green transition projects – How will this impact the renewable energy sector in Finland?' (HPP Attorneys, 22 November 2022) <https://hpp.fi/en/articles/the-finnish-government-proposes-fast-tracking-of-green-transition-projects-how-will-this-impact-the-renewable-energy-sector-in-finland/> accessed 30 January 2024.
[106] Regulation (EU) 2020/852 amending Regulation (EU) 2019/2088 [2020] OJ L 198/13, art. 1.

adaptation; (3) the sustainable use and protection of water and marine resources; (4) circular economy; (5) pollution prevention and control; and (6) the protection and restoration of biodiversity and ecosystems.[107]

However, in the context of Finnish permit applications, the do no significant harm principle is applied in a context that is outside the EU reporting obligation.[108] This means that the technical evaluation criteria established by the EU regulation for the do no significant harm principle does not have to be applied here. Instead, a different assessment method will be applied.[109] This will include assessing the permit application in the context of the do no significant harm principle through different technical, scientific and legal questions.[110] This means that while the do no significant harm principle can be found in the EU taxonomy and largely follows the same definitions in the Finnish permitting context, the technical criteria used for the assessment are different to what is in place at the EU level.

The use of the do no significant harm principle and having a separate assessment criterion for it is new in the permitting context and adds an additional layer of assessment to the permitting process because before the permit application is processed the applicant must prove it complies with the do no significant harm principle. The permit authorities also have to determine that the application meets the do no significant harm criteria as well as the other criteria that qualify the permit for prioritized permit processing, which is all on top of the normal permit procedure for environmental and water permits.[111] As this needs to be done on a project-by-project basis, it might initially delay the permit process rather than speeding it up; this is a new layer of assessment, and standardized interpretation of such assessment criteria usually takes time to be established in practice.[112] This has created concerns among legal professionals, as they fear that the application of the do no significant harm principle could create a bottleneck and water down some of the positive impacts of the fast-track procedure and its effect on the timelines for the realization of renewable energy projects.[113]

A key benefit of the fast-track procedure is to ensure that investments can proceed without delay. To do this, the maximum permit processing times are shortened. If the time to get the necessary permits is shorter, the projects can be realized faster. If projects can be up and running faster, that means production can start sooner, and the investment will be recouped faster. This will be a benefit for the investors, who have complained of long permit processing times with the result that investments are at a standstill.[114] However, some legal professionals are already wary about how fast-track procedure will play out in reality as the concept is new, and it adds two additional assessment steps:[115] an assessment on whether the project is eligible for the fast-track

[107] Ibid. art. 17.
[108] Satu Pohja and Netta Skön, 'Vihreän siirtymän hankkeiden etusija lupamenettelyissä – kuka mahtuu mukaan?' (*Fondia*, 23 January 2023) <https://fondia.com/fi/fi/ajankohtaista/artikkelit/vihreaen-siirtymaen-hankkeiden-etusija-lupamenettelyissae-kuka-mahtuu-mukaan> accessed 30 January 2024.
[109] Ibid.
[110] Ibid.
[111] Schultén, 'The Finnish government proposes fast-tracking of green transition projects'.
[112] Ibid.
[113] Ibid.; Matias Wallgren et al., 'Plan to speed up green transition investing by providing temporary priority processing and expedited appeals – statements can be issued' (Castrén & Snellman, 3 June 2022) <https://castren.fi/blogandnews/blog-2022/Plan-to-speed-up-green-transition-investing-by-providing-temporary-priority-processing-and-expedited-appeals-statements-can-be-issued/> accessed 30 January 2024.
[114] OECD, 'Finland's business climate in the eyes of foreign investors'.
[115] Schultén, 'The Finnish government proposes fast-tracking of green transition projects'; Wallgren et al., 'Plan to speed up green transition investing'.

process in the first place – does it meet the criteria of a renewable energy project that boosts green transition – and whether it meets the technical and scientific criteria of the do no harm principle, which is new in the context of the Finnish permitting landscape. As there is no standardized practice for these assessments and they are both new, it will take some time for the authorities to get used to them and create their assessment standards. This is why it is likely that when the fast-track procedure is first in place, it might in effect lead to further delays instead of, as intended, speeding up the permit process for environmental and water permits.

However, if the faster procedure for environmental and water permits works as intended and ends up benefiting investors and therefore attracting more investment in renewable hydrogen electrolysers it can be deemed a welcome improvement in the challenging permit procedure. It will, though, take some years before any actual results can be seen on whether the amendment was beneficial or not in terms of investments into renewable hydrogen production, and this will be a point for future research on this topic.

13.5 CONCLUSION

To conclude, there are a couple of essential points that need to be made. The Finnish permitting landscape remains fragmented and many different permits are needed. Positive notes are that most permits can be applied for easily online, but a number of attachments in the form of different assessments, plans and statements are required, which is deemed bureaucratic by investors. Long permit approval times are also named by investors as barriers to investment and are a problem for both building and environmental permits. Issues with the permitting regime influence the investment decisions of small and medium-sized enterprises in particular, as the long waiting times and bureaucracy affect them the most.

One of the main types of permits that are necessary for renewable hydrogen electrolyser projects and that are covered in this chapter are zoning permissions and building permits under the Land Use and Building Act (132/1999). This process mainly takes place on the municipal level, which can have some drawbacks for efficiency and negatively influence investment decisions. This is because small municipalities are responsible for many specialized tasks which can lead to long permit approval times for building permits.

Another important group of permits that are necessary for the realization of renewable hydrogen electrolyser projects are permits related to the environment. These are environmental and water permits. If a new production plant is set up that only produces renewable hydrogen, a separate emissions permit is not necessary. That is only needed in cases where the same installation also produces something else that falls under the requirements. Obtaining an environmental permit is highly bureaucratic, which can be a barrier to investment into renewable hydrogen.

Recently a law on the temporary amendment of the law on the handling of environmental protection and water matters in the Regional Administrative Agency (1144/2022) was passed which aims at easing the permit procedure for green investment projects, including hydrogen electrolysers, and addresses some of the issues with the permitting regime. The most important takeaways from the amendment are that it applies to environmental and water permits and it sets the maximum permit processing time at twelve months. This is a step in the right direction to improve the permitting process for renewable hydrogen electrolysers, and it is hoped that it will have the intended effect on boosting investments in this area.

Despite some improvements, a number of potential issues remain that may influence investment decisions in renewable hydrogen in a negative way have been identified in this study.

FURTHER READING

Centre for Economic Development, Transport and the Environment, *Uusiutuvan energian tuotantolaitosten lupamenettelyt ja muut hallinnolliset menettelyt: Menettelykäsikirja hakijoille* (Etelä-Pohjanmaa Centre for Economic Development, Transport and the Environment, 2023)

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OECD, 'Finland's business climate in the eyes of foreign investors' in *OECD The Impact of Regulation on International Investment in Finland* (OECD Publishing 2021)

Jürgen Pucher, Haris Martinos and Wolfgang Schausberger, *Obstacles to Investments at Local and Regional Level* (European Union, the Committee of the Regions 2016)

Leena Sivill et al., *Hydrogen Economy – Opportunities and Limitations* (Publications of the Government's Analysis, Assessment and Research Activities 2022)