



Mass Timber Construction in Selected Jurisdictions

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by the Staff of the Global Legal Research Directorate

I. Comparative Summary

A. Introduction

This report provides an overview of global jurisdictions and their legislative and policy frameworks concerning the use of mass timber in construction. The foreign law specialists and analysts of the Law Library of Congress undertook a global survey, and the countries included here are those for which relevant legislation was identified.

B. Wood-first Legislation

A number of countries and their sub-national jurisdictions have adopted laws promoting the use of wood in new construction. In 2020, the **Austrian** parliament enacted the Forest Fund Act (Waldfondsgesetz) to promote the use of raw material wood for construction as an “active contribution to climate protection,” among other objectives. In 2009, the **Canadian** province of British Columbia’s legislature enacted the Wood First Act, with the purpose of “facilitat[ing] a culture of wood by requiring the use of wood as the primary building material in all new provincially funded buildings, in a manner consistent with the building regulations.” A bill promoting the use of wood in federal government buildings was also introduced in the **Canadian** senate. In **Switzerland**, the Forest Ordinance emphasizes that the use of timber and timber products must be promoted in the planning, construction, and operation of federal buildings and installations. In 2010, **Japan** enacted legislation to promote the use of timber in public buildings. In **Croatia**, in line with the Croatian Building Act, the national Chamber of Commerce issued special instruction on construction, which established the 30-percent wood requirements in public buildings as a formal legal provision.

While the **Norwegian** government is in favor of promoting the use of timber in buildings, no wood-first laws have been adopted. Similarly, **Sweden** has no legislation that specifically promotes the construction of buildings using timber. However, in 2020, the Swedish Government devoted SEK2 million (about US\$200,000) to promote increased construction of wood buildings, especially of multifamily buildings. The **United Kingdom** does not have any wood-first legislation, however its 25-year environmental plan, released in 2018, and clean growth strategies recognize the use of commercial woodlands as a key carbon-capture method. **Finland** has set a goal of using timber in 31% of its public buildings by 2022, and 45% of public buildings by 2045. The **Turkish** parliament recognized the use of timber in its 2019-2022 development plan, but has not legislated the use of wood in construction. In July 2022, it was reported that **Russia** developed a road map for development of wooden construction in the next two years.

Italy due to seismic conditions, generally discourages the use of wood for construction purposes.

C. Regulation of Mass Timber in Construction

A few countries have building codes or other regulations concerning the use of mass timber in constructions. In **Canada**, the National Building Code, a model code for provinces to adapt or adopt, allows for encapsulated mass timber construction for buildings up to 12 stories or 42 meters in height. Structures made of mass timber products in the **Czech Republic, Estonia, Hungary, Italy, Latvia, Lithuania, Malta, and Sweden** must comply with a number of criteria concerning elasticity and resistance standards, in accordance with European Union (EU) regulations. Likewise, **Norway**, as a member of the European Economic Area, must comply with EU standards. **Gibraltar**'s environmental legislation is also largely transposed from EU rules. **Germany** allows for mass timber construction in buildings up to 22 meters. **Ireland** currently limits the use of combustible materials to buildings 10 meters and under, which typically covers four floors. **Singapore** requires a minimum of 65% of the floor area of buildings constructed on specific sites on government-sold land to be made with pre-fabricated materials which include mass timber products. In **Ukraine**, the building regulations provide for the following requirements concerning the CLT panels: number of layers 3-12, thickness 6 -100 centimeters, width 60-400 centimeters, length 6-24 meters.

In 2017, **United Kingdom** revised its restrictions on the use of combustible building materials in tall buildings, but noted that the restrictions should not inhibit innovation in the field of cross-laminated timber technologies. **Ireland** has considered the use of CLT in multi-story buildings, but noted that its use is currently limited by its building regulations, which provide limits on the use of combustible materials in these buildings. The **Japanese** government set up a website to promote the use of fire resistant cross-laminated timber technology in tall buildings. **The Netherlands** is expected to amend its building code to promote the use of wood in building construction, including the use of cross-laminated timber. **Bermuda** does not appear to have any specific restriction on the use of mass timber in its building laws, and the building code provides for innovative or alternative materials to be used, provided they are "at least the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety" to other materials prescribed in the building code. **Malta** does not have specific restrictions on the use of CLT or mass timber, a government minister may, by order, prohibit the use of certain materials in the construction of buildings if he or she believes it will be a danger to public health or safety, or that it will contravene any provisions of the building regulations.

II. Jurisdictional Surveys

Australia

There are currently three proposals in Australia to construct hybrid timber buildings from 590 feet to 721 feet high (about 54 to 66 stories high).¹

Australia does not have legislation dealing specifically with cross-laminated timber (CLT). Rather, its existing regulatory framework, through the National Construction Code (NCC), is used to address concerns that may arise in using CLT. The NCC is a performance-based code, so what is

¹ Angus Mackintosh, *Timber Skyscrapers Reach for Record Heights and Sustainable Australian Cities*, ABC News (Aug. 5, 2022), <https://perma.cc/L6PM-8W6L>.

being tested with respect to such structures is whether they possess structural integrity and can withstand events like fire, moisture, and so forth.²

The Structural Engineering Society of New Zealand (SESOC), which considered the building codes of both Australia and New Zealand, stated that Australia's building code is lacking, in that the NCC fails to consider issues that may arise with respect to the use of particular materials such as CLT.³

It appears that, as the technology in this area develops, the regulatory framework will develop with it. Currently, standards with respect to timber use are regularly updated, but we were unable to find one specifically on CLT or one that addresses high-rise timber buildings.

The Australian government has developed policies to promote the use of mass timber, and local councils within Australia have adopted wood encouragement policies.⁴

Austria

In Austria, the nine provinces (states) are competent to enact building codes.⁵ Even though building regulations have been harmonized in the uniform building directives (OIB-Richtlinien), differences remain.⁶

The federal Forest Fund Act provides funding to promote, among other objectives, the construction of residential buildings, buildings for public use, or public infrastructures with wood containing a high proportion of renewable raw materials from sustainable sources.⁷ Eligible applicants may receive funding for up to 50% of their costs, with a maximum funding amount of 500,000 euros (about US\$501,000).⁸

² *National Construction Code (NCC)*, Australian Building Codes Board (2019), <https://perma.cc/5SWC-V3YN>.

³ *CLT and Mass Timber Structures: A SEAOC/SESOC Article Series*, Structural Engineers Association of California (SEAOC), <https://perma.cc/7DAB-JK3X>.

⁴ See Scott N. Milestone & Paul D. Kremer, *Encouraging Councils and Governments Around the World to Adopt Timber-First Policies: A Systematic Literature Review*, 1 *Mass Timber Construction J.* 8 (2019), <https://perma.cc/CXJ8-XYSC>.

⁵ Bundes-Verfassungsgesetz [B-VG], Bundesgesetzblatt [BGBl.] No. 1/1930, art. 15, para. 1, <https://perma.cc/Z8N5-NVAF> (original), <https://perma.cc/DSF5-GRUU> (English translation).

⁶ Vereinbarung gemäß Art. 15a B-VG über die Zusammenarbeit im Bauwesen sowie die Bereitstellung von Bauprodukten auf dem Markt und deren Verwendung, Nov. 12, 2012, Landesgesetzblatt für Wien [LGBl. Wien] No. 21/2013, <https://perma.cc/8ARA-RLYT>; OIB-Richtlinien 2019, Apr. 2019, <https://perma.cc/Q3RK-QPXY>. See also, as an example, the Structural Engineering Order for Vienna, which declares the OIB-Richtlinien binding: Wiener Bautechnikverordnung 2020 [WBTv 2020], LGBl. Wien No. 4/2020, as amended, § 1, <https://perma.cc/Q4K5-PJQZ>.

⁷ Waldfondsgesetz, BGBl. I No. 91/2020, as amended, <https://perma.cc/36ZN-V459>; Sonderrichtlinie Waldfonds, Jan. 25, 2021, reference no. GZ 2020-0.812.965, as amended, at 42, para. 10.2, <https://perma.cc/9JNT-RJ92>.

⁸ Sonderrichtlinie Waldfonds, at 43, para. 10.5.1.

In addition, the Austrian Forest Strategy 2020+ and the Working Programme for the Implementation of the Forest Strategy 2020 call upon federal, state, and municipal authorities to consider wood as a construction material for construction contracts with public financing.⁹

Bermuda

Bermuda does not appear to have a “wood first” policy, or regulate mass timber or cross laminated timber in any of its laws. Bermuda does provide a specific customs code for cross laminated timber products in its Customs Tariffs Act.¹⁰

The Development and Planning Act 1974 provides that regulations may provide for the materials to be used in the construction of buildings in Bermuda.¹¹ There appears to be no specific restriction on the use of mass timber in its building laws, and the building code provides for innovative materials to be used, providing they meet “the intent and provisions”¹² of the code, as follows:

[t]he provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternative material, design or method of construction shall be approved where the Building Official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety.¹³

Canada

The Canadian Commission on Building and Fire Codes issues the National Building Code as a model for the provinces and territories to use, modify, or adopt. The 2020 edition of the National Building Code provides at Part 3.2.2.48 that

A *building* classified as Group C is permitted to conform to Sentence (2), provided

- a) it is *sprinklered* throughout,
- b) it is not more than 12 *storeys* in *building height*,

⁹ BMNT, *Österreichische Waldstrategie 2020+* (Mar. 2018), at 48, <https://perma.cc/CQR8-FPSH> (original), <https://perma.cc/7QYF-8C45> (English translation); BMNT, *Arbeitsprogramm zur Umsetzung der Österreichischen Waldstrategie 2020+*, no. 3.2.1., <https://perma.cc/ZRQ7-W9FH>.

¹⁰ Customs Tariffs Act 1970, Sch.1, Ch. 44, ¶ 44.18, <https://perma.cc/DZH6-ACDG>.

¹¹ Development and Planning Act 1974, c. 51, § 54(o), <https://perma.cc/M2RH-4QQ9>.

¹² Department of Planning, *Bermuda Building Code 2014* (2014) ¶ 102.6, <https://perma.cc/8KV6-32DN>.

¹³ *Id.*

- c) it has a height not more than 42 m measured between the floor of the *first storey* and the uppermost floor level that does not serve a rooftop enclosure for elevator machinery, a stairway or a *service room* used only for service to the *building*, and
- d) it has a *building area* not more than 6 000 m². [Emphases in original.]¹⁴

Sentence 2 refers to buildings “permitted to be of encapsulated mass timber construction or noncombustible construction, used singly or in combination.” Encapsulated mass timber is defined as “that type of construction in which a degree of fire safety is attained by the use of encapsulated mass timber elements with an encapsulation rating and minimum dimensions for structural members and other building assemblies.”¹⁵ British Columbia, Ontario, and Quebec will also reflect the 2020 changes to their own building codes.¹⁶

British Columbia’s Wood First Act allows the government to prescribe best practices on the use of wood in provincially funded buildings and may promulgate regulations requiring reporting on the use of wood.¹⁷ To date, no regulations have been issued under the Wood First Act. A federal version of wood-first legislation was introduced in the Senate of Canada.¹⁸ The bill has only one clause, which states, that when constructing or maintain federal property, the use of wood must be considered as a way of reducing the greenhouse gas emissions.

Croatia

According to a statement made by the minister of Planning, Construction, and State Assets, the Croatian government is working on “creating possibilities for greater use of wood in construction,” and it is developing a “strategy for the transition to a low-carbon society and legal obligation to use 30 percent of wood in the construction of public buildings.”¹⁹ On December 13, 2021, in line with the Croatian Building Act, the national Chamber of Commerce issued special instructions on construction, which established the 30% wood requirements in public buildings as a formal legal provision.²⁰

¹⁴ Canadian Comm’n on Bldg. & Fire Codes, *National Building Code of Canada 2020, Volume 1* pt. 3.2.2.48, <https://perma.cc/8UAQ-EQVX>. For information on market trends, see: Natural Resources Canada, *The State of Mass Timber in Canada 2021* (2021), <https://perma.cc/9P9K-B322>.

¹⁵ Id.

¹⁶ Press Release, Office of the Premier, Code Changes Create Jobs, Opportunities in B.C. Forest Communities, British Columbia Gov’t (Mar. 13, 2019), <https://perma.cc/SP4E-4UUH>; Building Code, O. Reg. 451/22 § 16, <https://perma.cc/R3EF-ANUR>; Regulation to Amend the Construction Code, *Gazette officielle du Québec*, vol. 153, no. 47, Nov. 24, 2021, p. 4862, <https://perma.cc/3TG3-8JSE>.

¹⁷ Id. §§ 3, 4.

¹⁸ Bill S-222, An Act to Amend the Department of Public Works and Government Services Act (Use of Wood), 44th Parl., 1st Sess., <https://perma.cc/6PMP-FYKR>. See also, Economic Recovery in Canada’s Forestry Sector: Green and Inclusive, House of Commons Standing Comm. on Natural Resources, 3d Report, 43d Parl., 2d Sess., May 2021, <https://perma.cc/T2DM-983E>.

¹⁹ Lea Primožič, *Dr. Kutnar with Croatian Minister Darko Horvat at the Wood in Construction Conference*, InnoRenew.eu (Feb. 9, 2022), <https://perma.cc/GF26-QRRE>.

²⁰ Croatian Chamber of Commerce and Croatian Employers’ Association, Special Instructions on Construction (Dec. 13, 2021), Narodne Noviny No. 137/2021, <https://perma.cc/L9SF-Y9C9> (official gazette, in Croatian).

Czech Republic

The Czech Republic is among the industry leaders in the European cross-laminated timber (CLT) market. At present, the residential sector represents the largest segment, holding the majority of the total market share.²¹

As a member of the European Committee on Standardization (CEN), the Czech Republic is bound to comply with the CEN/CENELEC Internal Regulations, which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.²² According to a United Nations report, the legislation regulating Czech forestry and wood-processing industry incorporates the European Union (EU) legislation and other valid regulations.²³ Wooden construction products and wooden structures that are placed on the market in the Czech Republic must be assessed in conformity with Annex 2 of Government Regulation No. 163/2002 Coll., as amended by Government Regulation No. 312/2005 Coll., to ensure that they meet EU laws, regulations, and administrative provisions relating to construction products.²⁴ The European Technical Approval is issued by the Technical and Test Institute for Construction in Prague.²⁵

As of July 1, 2023, when the new Building Act will enter into force, there will be a new procedure for environmental impact assessment, and builders will have to meet new conditions for construction, land development, preparation of the public infrastructure, and records of planning activity.²⁶

Denmark

The Danish parliament has not adopted national mandates for the use of timber in building construction or “timber first legislation.” However, the Danish government has adopted a national strategy for sustainable construction that includes guidelines for the increased use of timber in building construction.²⁷ It specifically states, “We must also propagate knowledge about the options for the use of timber in construction and the positive climatic effects that this

²¹ Press Release, Imarc, European Cross-Laminated Timber Market Report 2022-2027 (2022), <https://perma.cc/PJ59-BFCL>.

²² CEN, EN 16351:2021, Timber Structures – Cross Laminated Timber – Requirements, <https://perma.cc/2EZ9-AA97>.

²³ UN Econ. Comm’n for Europe Comm. on Forests and the Forest Industry, Seventy-Eight Session, Market Statement of the Czech Republic 2020 (Nov. 4–6, 2020), at 5, <https://perma.cc/D2U3-GNH5>.

²⁴ Government Regulation, No. 163/2002 of Apr. 24, 2002, Setting Technical Requirements for Selected Construction Products, Annex No. 2, <https://perma.cc/E3X5-4QQJ> (in Czech).

²⁵ Technical and Test Inst. for Construction, European Technical Assessment 16/0542, June 27, 2016, <https://perma.cc/K2LH-BK9J>.

²⁶ Viktor Pakosta, *The New Czech Building Act*, Schoenherr.eu (Jan. 3, 2022), <https://perma.cc/3AAF-4PSB>.

²⁷ Ministry of the Interior and Housing, *National Strategy for Sustainable Construction* (Apr. 2021), <https://perma.cc/UK5P-Z724>.

can entail.”²⁸ The strategy also includes an effort to incorporate the construction industry’s voluntary sustainability standard in the Danish Building Code by 2023.²⁹

In an effort to lead the way in the use of wood, the Bygningssstyrelsen (the Danish Building and Property Agency) has commissioned the construction of a public building (to be used for national government agency offices in Odense) using cross-laminated timber (CLT) technology for its loadbearing structure.³⁰

Estonia

Estonia is the largest exporter of wooden houses in the EU. Estonian wooden houses have become a major export article for the country, with annual production volumes reaching over Euros 500 million (approximately US\$500 million). Products cover the full range of different types of wooden houses, including timber building materials. Approximately 90% of the houses are being exported to the foreign market. Nearly 170 companies operate in this sector in Estonia.³¹ There are no architectural restrictions on production of CLT panels. They are frequently used in construction of private houses and apartment, industrial, and office buildings.³²

The Estonian Woodhouse Association developed the standards for the production of CLT panels. They include requirements for the quality of materials.³³ General standards for designing timber buildings are based on European standards established by Eurocode 5: Design of Timber Structures accepted by Estonia as a part of its national standard.³⁴ The construction process should be in conformity with general building requirements and in line with guidelines for technical approval of the construction product issued by the European Organization for Technical Approvals. The Estonian Centre for Standardization is the government agency authorized to monitor the compliance.³⁵

No legislation providing for incentives to use mass timber technology or promoting “wood first” policies have been found.

²⁸ Id. at 34.

²⁹ Id. at 25.

³⁰ *Bæredygtigt Byggeri Godkendt af Folketingets Finansudvalg*, Bygningssstyrelsen (Dec. 2, 2021), <https://perma.cc/666G-A57D>; see also Ministry of the Interior and Housing, *supra* note 1, at 35.

³¹ Marta Tuul, *In Estonia, Your Dream Home Is Built as if from Lego Pieces*, Investinestonia.com (Aug. 2022), <https://perma.cc/SJ2E-Y99G>.

³² *Solid Timber Constructions (CLT and MHM)*, Estonian Woodhouse Ass’n, <https://perma.cc/3WL3-N9XX>.

³³ Estonian Woodhouse Ass’n, Standards of the Estonian Woodhouse Association for Log Houses, <https://perma.cc/GD8X-VXGJ>.

³⁴ European Standard EN 1995-1-2:2004 including its corrigendum AC: 2006 and the Estonian National Annex: 2006, Estonian Centre for Standardization, Dec. 11, 2004, <https://perma.cc/VPZ4-ESB3>.

³⁵ Building Act of the Republic of Estonia, adopted on May 15, 2002, last amended on Jan. 1, 2012, arts. 7(2), 8(2), <https://perma.cc/N96Q-YA7N>.

European Union

The European Union (EU) aims to “help turn the construction sector from a source of greenhouse gas emissions into a “carbon sink” by increasing the use of wood in construction.³⁶ However, the European Commission acknowledges that there is “considerable room for improvement” as wood materials are currently used for only 3% of building projects in Europe.³⁷ It pledges to develop a 2050 roadmap for reducing whole life-cycle carbon emissions in buildings as well as a methodology to quantify the climate benefits of wood construction products and other building materials.³⁸ Among other actions that need to be taken, the European Commission states that misconceptions about fire risks and durability of wood products must be combated, investors must be incentivized to build with wood, and that EU Member States must amend their regulations to favor long-lasting wood products.³⁹

In addition, the New European Bauhaus initiative and the Horizon Europe Programme provide funding for, among other things, promoting building with wood.⁴⁰ For example, “Build-in-Wood” is a Horizon 2020 project for sustainable timber construction “with the goal of drastically increasing the proportion of timber construction.”⁴¹

In general, timber construction products that are marketed in the EU must conform to the requirements of the directly applicable Regulation (EU) No. 305/2011 to ensure the safety of construction projects.⁴² In particular, Commission Delegated Regulation (EU) 2016/364 and Commission Delegated Regulation (EU) 2017/2293, which specify the requirements of Regulation (EU) No. 305/2011, deal with the reaction to fire performance of construction products in general and cross-laminated timber (CLT) products covered by the harmonized standard EN 16351 in particular. CLT products that fulfill the requirements are deemed to satisfy the classes of performance indicated without testing.⁴³

Finland

The Finnish parliament has not adopted national mandates for the use of timber in building construction or “timber first legislation.” However, the Finnish government has adopted a program, run by the Ministry of the Environment, to promote building construction using timber

³⁶ New EU Forest Strategy for 2030, COM (2021) 572 final (July 16, 2021), at 6, <https://perma.cc/DHB9-QSXD>.

³⁷ Id.

³⁸ Id.

³⁹ Id.

⁴⁰ *New European Bauhaus*, European Union, <https://perma.cc/E8Q9-Q7S2>; *Horizon Europe*, European Commission, <https://perma.cc/UAH2-MG6U>.

⁴¹ *EU-Project for Sustainable Timber Construction*, Build-in-Wood, <https://perma.cc/5HJC-VH7Q>.

⁴² Consolidated Version of Regulation (EU) No 305/2011, 2011 O.J. (L 88) 5, <https://perma.cc/4EJ7-UPX5>.

⁴³ Commission Delegated Regulation (EU) 2016/364, 2016 O.J. (L 68) 4, <https://perma.cc/P7BW-BNU4>; Commission Delegated Regulation (EU) 2017/2293, 2017 O.J. (L 329) 1, <https://perma.cc/YQ7S-39B9>.

(*Statsrådets gemensamma program för träbyggande*).⁴⁴ Specifically, the goal of the program is to “promote and develop the business operations within industrial manufacturing in Finland in order to increase exports. The program supports Finland’s bio-economic strategy by increasing the use of wood in construction and thus increasing the long-term storage of carbon.”⁴⁵ As part of the program, national goals for public building construction have been set at using timber for 31% of new public buildings by 2022 and using timber for 45% of new public buildings by 2045.⁴⁶ Additional targets have been set for specific types of public buildings, such as educational facilities (55% by 2022 and 65% by 2025) and health care facilities (25% by 2022 and 35% by 2025).⁴⁷ As of September 2021, the Ministry of the Environment had awarded a total of 5.5 million Euros (about US\$5.4 million) in support of projects using wood in building construction.⁴⁸ Moreover, together with the other Nordic countries, Finland has signed a declaration to reduce carbon emissions as part of building construction.⁴⁹

Germany

Germany does not have explicit federal legislation requiring or promoting the use of wood for buildings in general or for public buildings in particular. Each state has its own building code (*Landesbauordnung*), which sets out the requirements that construction projects need to satisfy. However, the German Conference of Ministers for Building and Urban Affairs (ARGEBAU) publishes a legally non-binding model building code (*Musterbauordnung*, MBO), which harmonizes the state building regulations.⁵⁰ The states generally adapt their building regulations to this model code. However, they are not required to do so, and differences therefore remain. As an example, with regard to building with wood, the state of North Rhine-Westphalia amended its state building code (*Landesbauordnung NRW*) in 2018 to, among other objectives, align it better with the model building code and facilitate building with wood.⁵¹ The explanatory memorandum states that wood is “a renewable resource which can make a major contribution to a resource-efficient and sustainable development of construction.”⁵² For that purpose, the

⁴⁴ *Programmet för träbyggande*, Finansministeriet, <https://perma.cc/HL5V-AJ9C>.

⁴⁵ *Åtgärdsprogram för träbyggande*, Miljöministeriet, <https://perma.cc/27J7-LP2E>.

⁴⁶ *Offentligt träbyggande*, Miljöministeriet, <https://perma.cc/UCE9-JVLN>; Press Release, Miljöministeriet, Halvtidsutvärderingen av Programmet för Träbyggande: Träbyggandet har Redan Starkt Stöd, men Ambitionsnivån får Gärna Höjas, (Mar. 22, 2021), <https://perma.cc/ZRK5-VJBY>.

⁴⁷ Miljöministeriet, *Nationella Mål för Offentligt Byggande i Trä: Åtgärdsprogrammet för Träbyggande 2016–2024* 5-6, (Sept. 2020), <https://perma.cc/8ZMB-XHTU>.

⁴⁸ *Utlysning: Stödprogrammet för tillväxt och utveckling med trä: Träets många möjligheter*, Miljöministeriet, <https://perma.cc/A5KQ-B4JT>; Press Release, Miljöministeriet, Miljöministeriet har Beviljat Understöd till Projekt som Utvecklar Träbyggande (Apr. 23, 2021), <https://perma.cc/6MCD-5HYS>.

⁴⁹ *Nordic Declaration on Low Carbon Construction and Circular Principles in the Construction Sector*, norden.org (Oct. 10, 2019), <https://perma.cc/DX3L-P8KF>.

⁵⁰ *Musterbauordnung [MBO]*, Nov. 2002, as last amended on Sept. 25, 2020, <https://perma.cc/N97N-QMPQ>.

⁵¹ *Baurechtsmodernisierungsgesetz [BauModG NRW]* July 21, 2018, *Gesetz- und Verordnungsblatt Nordrhein-Westfalen [GV. NRW.]* 2018, 421, <https://perma.cc/B35F-QRMN>; Landtag Nordrhein Westphalen Drucksache [LT-Drs.] 17/2166, at 2 & 93, <https://perma.cc/ZF5J-ZJ49>.

⁵² LT-Drs. 17/2166, *supra* note 2, at 93.

amendment allows mass timber constructions for building classes 4 and 5 (up to 22 meters in height (about 72 feet)) as long as construction complies with the fire safety requirements codified in the amended section 26, paragraph 3.⁵³

On a federal level, the coalition parties of the German government agreed in their coalition agreement to start a national wood building initiative.⁵⁴ In August 2022, German Federal Minister for Housing Klara Geywitz stated that the planned national wood building initiative would help reap the climate advantages of the construction material wood and remove existing barriers.⁵⁵ The actual initiative has not been made public yet. However, the federal government currently supports the use of wood in construction through several other projects and funding opportunities, such as by providing funding of 500 million euros (about US\$501 million) under Germany's recovery and resilience plan (Deutscher Aufbau- und Resilienzplan, DARP) for about 20 projects to implement the goal of climate-friendly construction by further developing building with wood.⁵⁶ As an example, one of the funded projects aims to develop a practical guideline for public authorities for the public procurement of wooden constructions.⁵⁷ In addition, funding is available from the Forest Climate Fund (Waldklimafonds) for projects designed to remove barriers to and increase the use of long-lasting timber products, in particular in the construction sector.⁵⁸

Gibraltar

Gibraltar does not appear to have implemented an “wood first” policy. There are different pieces of legislation that place a duty on the government to take steps to ensure sustainability, increase energy efficiency, and reduce emissions. Most of Gibraltar's environmental legislation is driven from the law of the European Union. Gibraltar has either transposed, or is close to transposing over 100 pieces of EU law into its domestic laws.⁵⁹

⁵³ Id.; BauModG NRW, art. 1, BauO NRW 2018, § 26, para. 3 in conjunction with § 2, para. 3.

⁵⁴ *Mehr Fortschritt wagen. Bündnis für Freiheit, Gerechtigkeit und Nachhaltigkeit. Koalitionsvertrag 2021-2025 zwischen der sozialdemokratischen Partei Deutschlands (SPD), Bündnis 90/Die Grünen und den freien Demokraten (FDP)*, at 31 & 71, <https://perma.cc/89CS-LB6S>.

⁵⁵ Press Release, FNR, Bundesbauministerin Klara Geywitz besucht die FNR (Aug. 18, 2022), <https://perma.cc/C96J-EA7N>.

⁵⁶ Bundesministerium der Finanzen, *Deutscher Aufbau- und Resilienzplan (DARP)* (Apr. 2021), at 251, para. 1.3.1, <https://perma.cc/6KGJ-UMVR>; Richtlinie zur Förderung des klimafreundlichen Bauens mit Holz, Feb. 23, 2021, Bundesanzeiger Amtlicher Teil [BAnz AT], Mar. 3, 2021, at B2, as amended, <https://perma.cc/25KZ-GLVE>.

⁵⁷ *Berichtsblatt. Kurzfassung des Vorhabens. Handlungsleitfaden für die Ausschreibung und Vergabe von Holzbauleistungen (HAVE)*, <https://perma.cc/7VM2-5U9M>.

⁵⁸ Förderrichtlinie Waldklimafonds, Mar. 20, 2017, Banz AT, Mar. 24, 2017, at B5, as amended, at 4, para. 2.3.(a), <https://perma.cc/S82V-J7Y8>.

⁵⁹ *Policy and Legislation*, HM Government of Gibraltar, <https://perma.cc/8ZC5-KWC2>.

The priority of the government of Gibraltar, with regards to sustainable development, is to ensure that no unsustainable or illegal timber is used in the country.⁶⁰ The Climate Change Act placed a duty on the Minister to publish a plan to promote energy efficiency and, in preparing a plan, the Minister must consider what changes in building standards can help to reduce emissions.⁶¹ The Climate Change Strategy provided that Gibraltar aimed to have all new buildings be “nearly zero energy” by 2021.⁶²

The Building Rules 2017 provide extensive rules as to the use of timber in the construction of buildings, but makes no reference to mass timber or cross laminated timber.⁶³ Gibraltar has published examples where mass timber has been used in construction materials. The “first nearly carbon neutral building” constructed in Gibraltar used “solid laminated timber” produced in Austria.⁶⁴

Iceland

Iceland does not specifically require that public buildings be built using timber. However, the Icelandic Government and industry stakeholders have adopted a strategy for building a greener future (*Byggjum grænni framtíð*), published in June of 2022.⁶⁵ Among specific measures to be undertaken by 2030, it includes supporting “research on climate-friendly concrete and building materials from Icelandic organic wood”⁶⁶ and building more structures from Icelandic timber.⁶⁷ In addition, the Icelandic government requires that all new state-owned buildings meet the BREEAM standard (Building Research Establishment’s Environmental Assessment Method).⁶⁸

⁶⁰ Government of Gibraltar, *Green Procurement Policy* (Mar. 2012), <https://perma.cc/2NNC-8GKV>.

⁶¹ Climate Change Act 2019, No. 29, <https://perma.cc/333R-UVJM>.

⁶² Department of the Environment, Sustainability, Climate Change and Heritage, *Gibraltar Climate Change Strategy: The National Mitigation & Adaptation Plan* (2021), at 35, <https://perma.cc/2EAH-DH7H>.

⁶³ Building Rules 2017, LN 2017/17, <https://perma.cc/GS6V-GT6U>.

⁶⁴ Press Release, *Government and Ocean Village Agree a Way Forward: Massive Investment to Follow*, HM Government of Gibraltar (Feb. 17, 2014), <https://perma.cc/6UL8-25P5>.

⁶⁵ *Byggjum Grænni Framtíð - Vegvísir að vistvænni mannvirkjagerð 2030*, Byggjum Grænni Framtíð, <https://perma.cc/7ANF-HYFJ>.

⁶⁶ *Byggjum Grænni Framtíð, Vegvísir að Vistvænni Mannvirkjagerð 2030 II. Hluti Markmið og Aðgerðaáætlun 23*, <https://perma.cc/5TPJ-XHAF>.

⁶⁷ *Id.* at 26.

⁶⁸ Nordic Innovation, *Nordic Innovation Report 2012:10: Survey of Green Legislation and Standards in the Construction Area in the Nordic Countries 20* (June 2012), <https://perma.cc/M9UR-B3AN>.

Indonesia

According to an article published in 2020, CLT is not being utilized in Indonesia or in mid-rise building construction.⁶⁹ Where CLT is being used, it is being used in the construction of smaller residential homes.⁷⁰

In an article from 2017, the author noted that Indonesia's Wood Regulation (Indonesian Wooden Regulation (PKKI 1961)) had not changed in 52 years and argued it is outdated.⁷¹ Another article, from 2020, references this regulation (although as the Indonesian Wood Construction Regulations (PKKI NI 5-1961)).⁷² There do not appear to be plans for mass timber buildings. Codes, schedules, or authorizations that relate to CLT use in Indonesia have not been located.

Ireland

Ireland does not yet have a formal "wood first" policy, but it has made several moves indicating it is open to the creation of such a policy. The annex of actions in Ireland's Climate Plan 2019 included that the government should "consider a "think wood first" policy in green procurement where practical."⁷³ More recently, in 2021, a government minister encouraged the use of wood in all construction and called upon architects and the building industry to "think timber."⁷⁴

While Ireland has relatively low forest cover, its forests produce a substantial amount of material each year and contribute to Ireland's economy. Ireland has acknowledged that using scientific and technological developments can help to increase the contribution of its forests over the longer term.⁷⁵ It considers

[a] growing forest bioeconomy will not only boost economic growth but will also help meet national commitments to aid in food production, reduce greenhouse gas emissions, manage natural resources and ecosystem services sustainably, reduce reliance on imports while promoting rural development and has the potential to deliver significant public benefits.⁷⁶

⁶⁹ Ika Suyanto, *Perilaku Cross-Laminated Timber (CLT) Sebagai Material Utama Bangunan Tingkat Menengah Tahan Gempa di Indonesia*, 14 *Rekayasa Sipil* 204-10 (2020), <https://perma.cc/WH8Z-SSPJ>.

⁷⁰ *Rumah Papan Cililitan*, Woodlam Indonesia (2020), <https://perma.cc/2FWW-PM7M>.

⁷¹ Bambang Sudaryana, *Implementation of Wood Structure Engineering Policy in Indonesia*, 7 *J. Int'l Dev. Res.* 15025 (Sept. 2017), <https://perma.cc/E2SX-8GZG>.

⁷² James Rilatupa et al., *Escalation Quality of Wooden Beams as Building Construction with Densification Technology*, *IOP Conf. Series: Materials Sci. & Engineering* (2020), <https://perma.cc/2AFJ-DE84>.

⁷³ Government of Ireland, *Climate Action Plan 2019: Annex of Actions* at 61, <https://perma.cc/NWQ7-NB52>.

⁷⁴ Press release, *Minister Hackett Launches Series of COFORD Statements on Forests and Their Role in Climate Change Mitigation*, Department of Agriculture, Food and the Marine (Nov. 12, 2021), <https://perma.cc/8TVW-8Z2X>.

⁷⁵ COFORD Council, *Growing the Irish Forest Bioeconomy* (2017), <https://perma.cc/RX5L-VTTU>.

⁷⁶ *Id.*

The Department of Agriculture, Food and the Marine notes that engineered eco-construction materials are a significant area for the development of its forests and economy in the medium term.⁷⁷ The Department of Agriculture, Food and the Marine has funded various research projects into cross laminated timber (CLT), including how Irish Sitka spruce can be used in this product,⁷⁸ under the “Innovation in Irish Timber Usage” project.⁷⁹ COFORD Council, which is a body that advises the Minister for Agriculture, Food and the Marine on issues relating to Ireland’s forest sector,⁸⁰ funded the project “Commercialisation of Irish Cross-Laminated Timber,”⁸¹ which had the “objective of developing the necessary data to support the commercialisation of using Irish Sitka spruce to manufacture a cross laminated timber modular flooring system.”⁸²

Ireland has considered the use of CLT in multi-story buildings, but noted that its use is currently limited by its building regulations, which provide limits on the use of combustible materials in these buildings.⁸³ Ireland currently limits the use of combustible materials to buildings 10 meters and under, which typically covers four floors.⁸⁴ There are further limits on the use of non-combustible materials in separating walls and compartment walls of residential institutional buildings. The only exceptions to this are timber framed homes up to two floors high, or four floors if a sprinkler system is installed.⁸⁵ It was noted that while the Technical Guidance Document, published to guide the application of the building regulations, “allow[s] alternative approaches to their guidance, in practice it is difficult to get around these limits.”⁸⁶ A report into CLT use in multi-story construction found that some countries are moving towards a performance based design approach that will enable designers to demonstrate that fire safety targets can be achieved, and enable the construction industry to use CLT more extensively in building projects, but that this is “not likely in the short term” in Ireland.⁸⁷

⁷⁷ Id.

⁷⁸ Annette Harte et al., *Irish Timber – Characterisation, Potential and Innovation*, Civil Engineering Research Ireland 2014, <https://perma.cc/H8QM-TTF9>.

⁷⁹ *Innovation in Irish Timber Usage*, Department of Agriculture, Food and the Marine, <https://perma.cc/8RRM-PPDA>.

⁸⁰ *About COFORD*, COFORD Council, <https://perma.cc/HP28-D4VB>.

⁸¹ Department of Agriculture, Food and the Marine, *Commercialisation of Irish Cross Laminated Timber: Final Report* (Jan. 2017), <https://perma.cc/G65X-629G>.

⁸² COFORD Council, *Forests, Products and People – Ireland’s Forest Policy – A Renewed Vision* (2014), at 46, <https://perma.cc/DFD5-RJ6M>.

⁸³ Building Control Act 1990, No. 3/1990 (rev. ed. 2021), <https://perma.cc/4BV5-HKTF> and the regulations made under this Act. See further, Department of Housing, Local Government and Heritage, *Timber Frame Housing Report - Chapter 4 - Current Regulatory Regime* (last updated April 8, 2021), <https://perma.cc/AGF4-A22K>.

⁸⁴ Annette Harte et al., COFORD Council, *Timber in Multi-Storey Construction* (2017), at 3, <https://perma.cc/FC2X-L2HW>.

⁸⁵ Id. See further, Department of Housing, Local Government and Heritage, *Timber Frame Housing Report - Chapter 4 - Current Regulatory Regime* (last updated April 8, 2021), <https://perma.cc/AGF4-A22K>.

⁸⁶ Annette Harte et al., *supra* note 41, at 3.

⁸⁷ Id. at 4.

The Irish government has noted that the anticipated expansion of the Irish population will result in the requirement to build at least 500,000 new homes, which it considers “presents a massive opportunity for engineered timber construction.”⁸⁸ This intent is reflected in Ireland’s Climate Action Plan, in which the Irish government stated it intends to displace between 10-60% of embodied carbon in construction materials by using cross laminated timber as an alternative construction material.⁸⁹ A statement from COFORD found that if Ireland increased the use of timber framed housing, which currently only accounts for 24% of homes in Ireland, and uses CLT for high rise buildings, it could potentially reduce carbon dioxide emissions by 3.4 million tons by the year 2050.⁹⁰ The report called upon the government and local authorities to “promote the use of a wood first policy and . . . introduce whole life carbon reporting throughout the construction sector.”

Italy

No wood-first legislation and no national legislation or regulations on the use of wood in tall buildings were found in Italy. Most regulatory activity concerning the use of wood (including “mass timber” (*legno massiccio*) and “cross laminated timber” (*legno lamellare incrociato*)) takes place at the local level through construction ordinances.

In general, and due to seismic conditions, Italian legislation discourages the use of wood for construction purposes.⁹¹ At the national level, a Ministerial Decree of January 17, 2018 containing the consolidated text on Technical Standards for Construction, regulates the design, execution, and testing of buildings in order to guarantee public safety at established safety levels.⁹² Per the Decree, structural elements of glued laminated wood and glued solid wood must comply with the harmonized European standard UNI EN 14080,⁹³ on Timber Structures, Glued Laminated Timber and Glued Solid Timber.⁹⁴ They also must bear the CE mark.⁹⁵ Furthermore, individual

⁸⁸ Growing the Irish Forest Bioeconomy, *supra* note 32.

⁸⁹ Government of Ireland, *Climate Action Plan 2021: Securing Our Future*, ¶ 12.3.7, <https://perma.cc/6BFN-TG75>.

⁹⁰ COFORD, *Forests and Wood Products and their Importance in Climate Change Mitigation* (2022) at 8, <https://perma.cc/44XJ-RPEG>.

⁹¹ See *Cosa dice la Legge sulle Case Prefabbricate in Legno? Normativa e Approfondimenti*, Guida Case Prefabbricate (July 24, 2022), <https://perma.cc/U5YV-GHAU>, indicating that due to seismic conditions, as a general rule, it is not easy to obtain authorization to build wooden dwellings in Italy.

⁹² Decreto Ministeriale 17 gennaio 2018, aggiornamento delle “Norme Tecniche per le Costruzioni” (Decree of 2018), <https://perma.cc/D4SD-SNKX>.

⁹³ *Id.* § 11.7.4.

⁹⁴ We were unable to access BS EN 14080:2013, Timber Structures: Glued Laminated Timber and Glued Solid Timber: Requirements outside of paywalls but this harmonized standard falls under EU Regulation No. 305/2011 of the European Parliament and of the Council of 9 March 2011 Laying down Harmonised Conditions for the Marketing of Construction Products and Repealing Council Directive 89/106/EEC, 2011 O.J. (L 88) 5, <https://perma.cc/LV6B-C8KH>.

⁹⁵ Decree of 2018 §11.1 referring to the “*Marcatatura CE.*” The CE marking of a machine indicates that the machine complies with the essential safety requirements established in Annex I on “Essential Health and Safety Requirements relating to the Design and Construction of Machinery” of Directive 2006/42/EC of the

boards for the composition of laminated wood must meet the requirements of the harmonized European standard UNI EN 14081-1⁹⁶ in order to ensure correct attribution to a resistance class.⁹⁷

The production of solid wood structural elements must also comply with the harmonized European standard UNI EN 14081-1 and bear the CE marking.⁹⁸ When the CE marking is not required, producers of solid wood elements for structural use must be qualified according to specific procedures.⁹⁹ Also under the Decree, the design and verification of structures made with solid wood, laminated wood, or with products for structural use derived from wood must comply with the established resistance standards and the minimum criteria set forth in Table 11.7.1, which sets forth the resistance profile for wood-based materials and products.¹⁰⁰

Circular No. 7 of January 21, 2019 issued by the Ministry of Infrastructure and Transportation,¹⁰¹ contains instructions for the implementation of the Ministerial Decree of 2018. Specifically, the Circular provides that mass timber (solid wood products) with rectangular sections must be subject to a classification according to resistance, in order to receive a resistance class for each individual sawn timber, usually consistent with what is proposed by UNI EN 338.¹⁰² In default of a specific European Technical Assessment (ETA) for such products, the qualification procedure established in § 11.7.10 NTC applies.¹⁰³ Glued laminated wood and glued solid timber must be subjected to the CE marking in accordance to UNI EN 14080.¹⁰⁴

European Union legislation on construction is mandatory in Italy.¹⁰⁵ As a result, Eurocode 5 on the Design of Timber Structures¹⁰⁶ and Eurocode 8 on the Design of Structures for Earthquake Resistance¹⁰⁷ apply. In particular, Eurocode 5's National Appendix on "Design of Wooden Structures," contains a "National Parameter" on the use of "mass timber" (*legno massiccio*) and

European Parliament and of the Council of 17 May 2006 on Machinery, which also Amends Directive 95/16/EC (recast), <https://perma.cc/UD9C-ZXEL>.

⁹⁶ BS EN 14081-1:2016+A1:2019, Timber Structures. Strength Graded Structural Timber with Rectangular Cross Section: General Requirements, <https://perma.cc/V5NM-VTYW> (note that this link provides access to the 2016 document as we were unable to find the 2019 document outside of paywalls).

⁹⁷ Decree of 2018 §11.7.4.

⁹⁸ Id.

⁹⁹ Id. §§ 11.1(B) & 11.7.10.

¹⁰⁰ Id. § 11.7.1.1, Table 11.7.I.

¹⁰¹ Circolare 21 gennaio 2019, n. 7 C.S.LL.PP., Ministero delle Infrastrutture e dei Trasporti, Istruzioni per l'Applicazione dell'Decreto Ministeriale 17 gennaio 2018, <https://perma.cc/4KU2-V8AJ>.

¹⁰² Id. § C11.7.2.1.

¹⁰³ Id. § C11.7.2.2, para. 1.

¹⁰⁴ Id. § C11.7.4, para. 1.

¹⁰⁵ Decreto 31 luglio 2012, Ministero delle Infrastrutture e dei Trasporti, Approvazione delle Appendici Nazionali recanti i Parametri Tecnici per l'Applicazione degli Eurocodici, <https://perma.cc/9GJV-VQLW>.

¹⁰⁶ Eurocode 5: *Design of Timber Structures*, European Commission, <https://perma.cc/ZE7J-B6EM>.

¹⁰⁷ Eurocode 8: *Design of Structures for Earthquake Resistance*, European Commission, <https://perma.cc/73B9-SAMM>.

“cross laminated timber” (*legno lamellare incollato*), which applies to the “design of buildings and other civil engineering works in timber (solid timber, sawn, planed or in pole form, glued laminated timber or wood-based structural products) or wood-based panels jointed together with adhesives or mechanical fasteners.”¹⁰⁸ The National Appendix contains a table that sets forth the values for the coefficient Y_M , which is “the partial safety factor on the compressive strength, including model and geometry uncertainties,”¹⁰⁹ that applies, among others, to mass timber and cross laminated timber.

Japan

Japan enacted the Act on Promotion of Use of Timber in Public Buildings in 2010.¹¹⁰ The name of this act was changed to the Act on Promotion of Use of Timber in Buildings to Contribute to the Realization of a Decarbonized Society (Timber Promotion Act) in 2021.¹¹¹ Based on the Act, the Ministry of Agriculture, Forestry and Fisheries (MAFF) and the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) formulated the first basic policy on promotion of use of timber in public buildings in 2010.¹¹² It gives a significant and basic direction of promoting the use of wood in public buildings. Further, it addresses basic matters concerning measures to promote the use of timber in public buildings and goals for the use of timber in government-developed public buildings, among other things.¹¹³

The 2021 amendment of the Timber Promotion Act expands its coverage to private buildings. The amendment obligated the government to set up the Timber Utilization Promotion Headquarters within the MAFF, which issued a new basic policy on Promotion of Use of Timber in October 2021.¹¹⁴

The policy states that local governments use wood in the public buildings they maintain; and that local governments promote the use of timber in private buildings, disseminate the benefits of wooden buildings, provide technical information on the use of wood, develop human resources with knowledge and skills related to the design and construction of wooden buildings, and promote the systems of agreements regarding the use of wood in buildings.¹¹⁵

¹⁰⁸ *Id.*

¹⁰⁹ *Murature Pportanti: Atti Seminario Tecnico. Variabilità delle Tipologie Edilizie, Monitoraggio Strutturale, Comportamento Statico e Dinamico, Verifiche e Rinforzi in FRP*, at 8, <https://perma.cc/GR7W-622X>.

¹¹⁰ Act on Promotion of Use of Timber in Public Buildings, Act No. 36 of 2002, <https://perma.cc/68RB-2QZ6> (in Japanese).

¹¹¹ Act to amend Act on Promotion of Use of Timber in Public Buildings, Act No. 77 of 2021, <https://perma.cc/N72Z-67TC> (in Japanese).

¹¹² Basic Policy on Promotion of Use of Timber in Public Buildings, MAFF & MLIT Notification No. 3 (Oct. 4, 2010), <https://perma.cc/22NT-74L5> (in Japanese).

¹¹³ Act on Promotion of Use of Timber in Public Buildings, Act No. 36 of 2002, art. 7.

¹¹⁴ Basic Policy on Promotion of Use of Timber (Timber Utilization Promotion Headquarters decision, Oct. 1, 2021), <https://perma.cc/9X9M-R4JG> (in Japanese).

¹¹⁵ Basic Policy on Promotion of Use of Timber, at 3; see also Timber Promotion Act art. 5.

Agreements to promote the use of wood in buildings¹¹⁶ are made between a person or business who seeks to build a building and the local or national government, or among such persons or business, a builder, and a government.

The Building Standards Act restricted mid to high-rise wooden buildings to avoid fires. However, the act has been amended to ease restrictions on the use of wood. Most recently, the 2018 amendment changed the height restriction for non-fire-resistant wooden houses from 13 meters (42.65 feet) to 16 meters (52.49 feet). For mid to high-rise buildings, it became possible to use timbers for main structures and expose them as long as fire resistant standards are satisfied.¹¹⁷

For mid to high-rise wooden buildings, development and use of strong and fire resistant timber is important. For such timber, the government has promoted cross-laminated timber (CLT) since 2014. The Cabinet Secretariat set up a unified website to promote CLT in 2016.¹¹⁸

Latvia

While expansion of business in the field of CLT and mass timber construction has been reported by media and professional organizations,¹¹⁹ it appears that this industrial development has not been addressed by legislation. The recently amended Latvian Construction Law states, concerning timber structures, that all regulations adopted after July 1, 2015 remain applicable.¹²⁰ In 2015, Latvia recognized all parts of the Eurocodes as national standards.¹²¹

Lithuania

While the mass timber industry is growing in Lithuania, and new enterprises producing CLT panels are being established, it appears that there are no separate national technical requirements for the design of wooden (CLT) buildings. The Ministry of the Environment issued Technical Regulations for Construction in 2005, which established structural standards for timber buildings. These standards apply to all types of wooden construction and designate timber products as regulated.¹²² A 2022 Environmental Ministry order subjected regulated construction products to

¹¹⁶ Timber Promotion Act art. 15.

¹¹⁷ Forestry Agency, Annual Report on Forest and Forestry in Japan, 181 (2019), <https://perma.cc/XV8B-QLVU> (in Japanese).

¹¹⁸ *Unified Window of the Government to Promote CLT*, Cabinet Secretariat, <https://perma.cc/2KQL-FQQU> (in Japanese).

¹¹⁹ See, e.g., Kristine Stalidzane, *Latvia's IKTK Invests 2 Mln Euro in Glued Laminated Timber Structures Plant*, Baltic Times (Nov. 13, 2019), <https://perma.cc/KJ9T-GAZB>; *Cross Timber Systems Started Producing CLT Panels in Latvia*, Lesprominform.ru (Apr. 14, 2015), <https://perma.cc/7T38-CXPK> (in Russian).

¹²⁰ Construction Law of the Republic of Latvia, adopted on Sept. 7, 2013, last amended on May 12, 2022, Transitional Provisions 2(10), <https://perma.cc/5AUC-ESJR>.

¹²¹ Silvia Dimova et al., *supra* note 15, at 37.

¹²² Republic of Lithuania Env'tl Ministry, Order No. D1-79 of February 10, 2005, on Approval of the Technical Regulation of Construction: Design of Wooden Structures, <https://perma.cc/WT52-L5HM> (in Lithuanian).

requirements of EU directives, regulations, and legal acts if not regulated by domestic legislation.¹²³

Malta

Malta does not appear to have a “wood first” policy, nor does it appear to have laws or regulations that restrict or provide incentives for the use of cross laminated timber in its buildings.

Most of Malta’s environmental legislation is driven by the law of the European Union, which it has transposed into its domestic law. Malta has incorporated EU Regulation No 995/2010 that sets out the “obligations of operators who place timber and timber products on the market.”¹²⁴ This regulation aims to ensure that timber placed on the market across EU member states is legally harvested.¹²⁵

The Environmental Protection Act 2016 places a duty on the government to protect the environment by “manag[ing] it in a sustainable manner by integrating and giving due consideration to environmental concerns in decisions and policies on land use, socio-economic, educational and other matters.”¹²⁶

In 2010, Malta’s Climate Change Adaption Strategy noted the legal framework should be reviewed to address technical gaps and constraints and that legal instruments should be introduced to “provide national funding programmes and/or financial incentives in individual sectors to address these constraints.”¹²⁷ One of the areas that the strategy noted should be considered was the construction industry, where it stated that it should be “worked closely with to identify technologies, materials, and approaches that could help Malta achieve its adaptation objectives and create new niches for the industry, assisted by legislative measures and incentives.”¹²⁸ It does not appear that any incentives have yet been introduced for cross laminated timber.

The Building Regulation Act 2011 does not provide for any regulation specific to mass timber, cross laminated timber, or timber in general.¹²⁹ The Development Planning Act provides that regulations may be made under it to regulate the construction of buildings that should take into account the safety, aesthetics, health and safety of any building.¹³⁰ The Development Planning

¹²³ Republic of Lithuania Env’tl Ministry, Order No. D1-15 of January 24, 2022, on the List of Regulated Construction Products, <https://perma.cc/C8FU-B2SQ>.

¹²⁴ Timber and Timber Products (Placing on the Market) Regulations, LN 79/2015, art. 2, <https://perma.cc/K6KL-ND6F>.

¹²⁵ Id. art. 9.

¹²⁶ Environment Protection Act 2016, No. 1/2016, art. 4, <https://perma.cc/9JKB-45C4>.

¹²⁷ Climate Change Committee for Adaptation, *National Climate Change Adaptation Strategy* (2010), ¶ 03.4, <https://perma.cc/3ACH-CLCQ>.

¹²⁸ Id.

¹²⁹ Building Regulation Act 2011, No. 12 of 2011, <https://perma.cc/J3WL-9A2E>.

¹³⁰ Development Planning Act, cap. 552, art. 60, <https://perma.cc/3BSQ-HM9G>.

Act does not specify an approved list of materials, but it does provide that a government minister may, by order, prohibit the use of certain materials in the construction of buildings if he or she believes it will be a danger to public health or safety, or that it will contravene any provisions of the building regulations.¹³¹ The Building and Construction Act 2021 requires all individuals undertaking work on buildings to do so according to best industry practices and to set standards that include respecting and protecting the environment. All building and construction works must also “give due regard to and respect the principles of sustainability, structural integrity, their quality and energy efficiency at its inception, during construction and use.”¹³²

Netherlands

The Netherlands does not have explicit legislation requiring or promoting the use of wood for buildings in general or for public buildings in particular. However, in October of 2021, the Metropolitan Region of Amsterdam (MRA),¹³³ private partners, and knowledge institutions signed the “Green Deal Timber Construction Covenant” (Green Deal Covenant Houtbouw), which aims to construct at least 20% of new housing projects in the MRA annually (approximately 3,000 homes) out of wood or other bio-based materials by 2025.¹³⁴ To make this possible, the parties will identify sufficient locations and projects for timber construction, in particular, using different types of timber construction such as cross-laminated timber (CLT), timber frame construction, or laminated veneer lumber (LNV); develop and share knowledge about all aspects of timber construction; and aim to remove legal barriers.¹³⁵ The Dutch government is expected to amend building regulations in favor of timber construction.¹³⁶ The MRA is also one of the “Early Adopter Cities” of the “Build-in-Wood” project, a European Union funded Horizon 2020 project for sustainable timber construction.¹³⁷

New Zealand

New Zealand has used mass timber in the construction of buildings, but only in buildings under six stories high. The government is investing in the use of mass timber through its Mid-Rise Wood Construction Partnership, but it seems that, for the most part, buildings will be lower than six stories (at least for the moment).¹³⁸

¹³¹ Id. art. 90.

¹³² Building and Construction Act 2021, No. 14 of 2021, art. 3, <https://perma.cc/8LK5-RV83>.

¹³³ The MRA is comprised of 32 municipalities, the provinces of North Holland and Flevoland, and the Transport Authority Amsterdam (Vervoerregio Amsterdam). See *About the Metropolitan Region Amsterdam*, metropool regioamsterdam, <https://perma.cc/6BD3-RDRR>.

¹³⁴ Metropool regioamsterdam, *Convenant. Green Deal Houtbouw*, Oct. 2021, <https://perma.cc/YZY5-EL96>; Press Release, AMS Institute, *Signed and Sealed: Green Deal Timber Construction* (Oct. 21, 2021), <https://perma.cc/S5TY-N3VF>.

¹³⁵ *Convenant. Green Deal Houtbouw*, at 8, 9.

¹³⁶ Id. at 9.

¹³⁷ *Amsterdam, Netherlands. Cooperation with Build-in-Wood*, Build-in-Wood, <https://perma.cc/5L3P-A49Z>.

¹³⁸ *NZ Government Design Funding for Large-Scale Mass Timber Buildings*, Built Offsite (Sept. 12, 2021), <https://perma.cc/WS8N-JBF2>.

The existing building regulatory framework applies to mass timber construction. SESOC concluded that New Zealand's building code also fails to consider issues that may arise with respect to the use of CLT.¹³⁹

New Zealand has implemented "wood first" policies, and these apply at the state and local level.¹⁴⁰

A number of standards apply to the use of timber, but we were unable to locate any that applied specifically to CLT.

Norway

There is no outright requirement that buildings be built using CLT technology but the use of Norwegian timber and CLT technology is encouraged as per Norwegian government strategy documents. In 2019, the Ministry of Agriculture and Food published a strategy for how the lumber and forestry industries can work as drivers for a green transition, noting in particular the potential of CLT technology to create a more environmentally friendly building industry.¹⁴¹ The current Norwegian government (made up of Arbeiderpartiet and Senterpartiet) has expressed that it wants to continue to prioritize the use of Norwegian timber in building construction, specifically stating that it wants to "take necessary measures to prioritize Norwegian timber in all public building projects when possible, both for new construction and renovations."¹⁴² In addition, the Norwegian government wants to create a development program that would focus on building timber houses and making the building industry more climate friendly and innovative.¹⁴³ The government also wants to focus on public procurement measures via Statsbygg, the Norwegian Directorate of Public Construction and Property, to increase the demand for Norwegian timber overall.¹⁴⁴ Statsbygg has not adopted any standards or recommendations for the use of Norwegian timber in public procurement of public buildings.

The timber industry itself has adopted national goals for increasing the use of timber to represent 1m³ (one cubic meter) per Norwegian inhabitant.¹⁴⁵ In 2019, the figure was 0.9m³ per

¹³⁹ Martin Feeney, *Mass Timber Structures: Design for Fire Resistance – Current Status in New Zealand*, SESOC (2020), <https://perma.cc/9ABX-EKXP>.

¹⁴⁰ NZ Has a Plan for Timber First, Daily Timber News (June 18, 2021), <https://perma.cc/B9QG-YMGX>; Govt Adopts "Timber-First" Policy for Building Industry in Bid to Combat Climate Change, WoodWorks (June 15, 2021), <https://perma.cc/X4V2-JHRS>.

¹⁴¹ Landbruks- og matdepartementet, *Skog- og Trenæringa – ein Drivar for Grøn Omstilling, Strategi for Auka Forskings-, Utviklings- og Innovasjonsaktivitet i Skog- og Trenæringa, Strategi for å Stimulere Eiterspørselen Etter Grøne, Trebaserte Produkt 38* (2019), <https://perma.cc/7KL2-5249>.

¹⁴² Arbeiderpartiet og Senterpartiet [Regjeringen], *Hurdalsplattformen for en Regjering Utgått fra Arbeiderpartiet og Senterpartiet 2021-2025 36*, <https://perma.cc/U2YA-SMYS>.

¹⁴³ Id.

¹⁴⁴ Id. at 21.

¹⁴⁵ *Trebruk*, Statsforvaltaren for Inlandet, <https://perma.cc/F5Y2-F5XA>.

inhabitant.¹⁴⁶ Innovation Norway, a government agency that by law acts on behalf of the national and local governments to support innovation,¹⁴⁷ financially supports the innovative use of timber in building construction.¹⁴⁸ Nevertheless, Norwegian law does not currently require that timber be used over other building materials.

Poland

Amendments to Poland's Building Law, which allow the construction of houses up to 70 square meters in size without the need for a permit, were adopted on September 17, 2021. Instead of the previously required construction permit, an individual willing to construct a small wooden building needs to submit a construction notification only.¹⁴⁹ According to the experts, the amendments may contribute to changes in the wooden construction industry leading to "an increased interest in rapid construction, which is based on prefabrication or modules. It is expected that in the future, the number of timber houses handed over will increase up to three times."¹⁵⁰

According to experts, wooden buildings are being built in quite small numbers, and they constitute only 2% of all houses built. Annually, about 900 to 950 new wooden houses are built using timber frame technology in Poland. The experts hope that new technologies will boost the development of the wooden house market, and will allow the building of multistory buildings primarily from wood.¹⁵¹

In 2020, the National Fund for Environmental Protection and Water Management and the bank *Ochrony Srodowiska* founded *Polskie Domy Drewniane* [Polish Wooden Houses], a development company that constructs energy-efficient residential and commercial buildings using wood technology, thus utilizing the domestic potential of the wood and construction industries. The representatives of the industry expect that the number of buildings constructed will increase to approximately 2,500 buildings per year.¹⁵²

¹⁴⁶ Id.

¹⁴⁷ 1 ch. 1 § Lov om Innovasjon Norge (LOV-2003-12-19-130), <https://perma.cc/PY48-8W2E>.

¹⁴⁸ *Tilskudd til innovativt bruk av tre*, Innovasjon Norge, <https://perma.cc/5ADS-T9T8>.

¹⁴⁹ Act of September 17, 2021 Amending the Act on Construction Law and the Act on Spatial Planning and Development, art. 1, para. 2(a), (b), *Dziennik Ustaw* [Journal of Laws], 2021, item 1986, <https://perma.cc/P92C-7WGP> (in Polish).

¹⁵⁰ *Building Law 2022. House up to 70 Square Meters Without a Building Permit. The President Signed the Law*, Polish News (Oct. 30, 2021), <https://perma.cc/GAS6-DHB4>.

¹⁵¹ *Wooden Buildings – A Revolution in the Construction Market?*, *Constructionmarketexperts.com* (Dec. 8, 2021), <https://perma.cc/NBL9-TXDY>.

¹⁵² *In 10 Years the Timber Stock in Polish Forests Has Increased by 15%*, *Constructionmarketexperts.com* (Mar. 16, 2021), <https://perma.cc/3L5R-VJWW>.

Romania

Romania has a long-established tradition of using wood as a building material. Scholars report, “contemporary techniques in responsible forestry and cross laminated timber have enabled ways of building which are both efficient in implementation and environmentally responsible, if not beneficial.”¹⁵³ In 2021, the first multistory office building was constructed using cross-laminated timber.¹⁵⁴ It appears that there is no specific policy developed by Romanian authorities to support the building sector. EU standards are used by builders.

Russian Federation

Through 2040, production of CLT panels, which must consist of no less than three layers and have a density of no less than 500 kilograms per cubic meter, is recognized as a modern technology for the purpose of engaging in special investment contracts. By government order, this recognition allows builders to request special financing and other subsidies. Specific technological details for production of these panels are established by National Building Standards.¹⁵⁵

In July 2022, Russia’s government newspaper *Rossiiskaia Gazeta* reported that the federal Ministry of Construction Industry and Utilities and the Ministry for Emergency Situation have created a road map for development of wooden construction in the next two years. It is expected that pilot projects for public and residential CLT buildings from three to 12 stories high will be initiated. Technological requirements, including fire, mechanical, and seismic safety norms for wooden structures and new rules for obtaining building permits must be created by 2024. According to the article, it is not expected that the CLT technology will be used widely, and it is expected that the price of real estate in mass timber buildings will be expensive.¹⁵⁶

According to industry analysts, all the technical documentation in the field appears to be a simple description of the technology.¹⁵⁷ The first set of related building design and construction rules was approved by the minister of Construction Industry and Utilities in April 2022. It addressed buildings from glued wooden bars (logs).¹⁵⁸

¹⁵³ John Arnaud, *Analyses of Responsible Construction in Romania* 3 (Mar. 22, 2018), (M.Architecture thesis, University of Cincinnati), <https://perma.cc/YEK5-ESW6>.

¹⁵⁴ Irina Marica, *Eco-Passive Office Building Built near Cluj-Napoca* (Sept. 28, 2021), *Romania-Insider*, <https://perma.cc/J5NH-82N4>.

¹⁵⁵ Russian Fed’n Gov’t, Order No. 3143-r of Nov. 28, 2020, on the Approval of the List of Technologies Recognized as Modern Technologies for the Purpose of Concluding Special Investment Contracts, paras. 183, 185, 186, & 189(1), <https://perma.cc/7GG3-X26U> (in Russian).

¹⁵⁶ Marina Trubilina & Svetlana Zadera, *The Ministry of Construction Will Prepare Projects for 12-Storey Wooden Houses*, *Rossiiskaia Gazeta* (July 7, 2022), <https://perma.cc/9JN5-GSCW> (in Russian).

¹⁵⁷ Maxim Berlovich, *When Will Russia Start Building Multi-Storey Buildings from CLT panels?*, *Rbc.ru*, Dec. 4, 2019, <https://perma.cc/RE6L-Y4GQ> (in Russian).

¹⁵⁸ Russian Fed’n Ministry of Construction, Order on Approval of Rules for Construction of Buildings from Glued Wooden Logs (Design and Construction Rules), Apr. 8, 2022, <https://perma.cc/9BXK-G6RH> (in Russian).

Singapore

In Singapore, the government is promoting the use of Mass Engineered Timber (MET), which includes cross-laminated timber and glued laminated timber.¹⁵⁹ Buildings and structures using MET must comply with the Building Control Regulations 2003, Eurocode SS EN 1995 (2018), and the fire safety requirements stipulated by the Singapore Civil Defence Force.¹⁶⁰ In March 2022, the Building and Construction Authority (BCA) issued an advisory on good practices for the design, inspection, and maintenance of MET structures.¹⁶¹

In addition, Singapore's Building Control (Buildability and Productivity) Regulations mandate the use of "specified prefabricated structural systems" in selected sites in government land sale programs.¹⁶² For buildings on those sites, the minimum level of use of the specified prefabricated structural system is "65% of the total structural floor area of the building works."¹⁶³ Specified prefabricated structural systems include, but are not limited to, a prefabricated structural system using MET that is: (1) made of wood engineered to improve its structural integrity over its natural form, (2) constructed or manufactured outside the premises of the building works, and (3) then "installed in a building under building works."¹⁶⁴

Slovenia

According to a research article, "there is no production of CLT in Slovenia, but Slovenian manufacturers have a close cooperation with producers, mostly in Austria. The CLT products are expected to play an important role in the future construction of single and multi-story timber buildings." Presently, "the predominant methods of timber construction include wood-panel, timber-frame, and cross-laminated timber (CLT) systems."¹⁶⁵ However, it appears that no specific legislation regulating or incentivizing the use of CLT technologies in particular has been passed. The focus in promoting green construction has been on ensuring the efficient use of energy in buildings. The recently updated government-issued technical guidance on efficient use of energy in buildings establishes the minimum technical requirements and guidelines for constructing low-energy houses.¹⁶⁶ Lower interest rate loans or subsidies are offered by the government to builders of passive or very low-energy houses or for implementation of energy-saving measures.

¹⁵⁹ *Mass Engineered Timber*, BCA (Mar. 6, 2020), <https://perma.cc/LM3A-RCPL>.

¹⁶⁰ *Id.*

¹⁶¹ BCA, *Advisory on Good Practices for the Design, Inspection and Maintenance of Mass Engineered Timber (MET) Structures for I) Building Owners, Responsible Parties, and II) Professional Engineers* (Mar. 1, 2022), <https://perma.cc/W3G2-C3EZ>.

¹⁶² Building Control (Buildability and Productivity) Regulations 2011, s 4B(7), <https://perma.cc/XP7F-JMV7>.

¹⁶³ *Id.* 15th sched.

¹⁶⁴ *Id.* § 2.

¹⁶⁵ Manja Kitek Kuzman & Dick Sandberg, *Comparison of Timber-House Technologies and Initiatives Supporting Use of Timber in Slovenia and in Sweden – The State of the Art*, 10 *iForest* 930-38 (2017), <https://perma.cc/G434-5Y3F>.

¹⁶⁶ Rules on Efficient Use of Energy in Buildings, Republic of Slovenia Official Gazette, July 1, 2010, No. 52/10, 61/17, 70/22, <https://perma.cc/27HG-BW34> (in Slovenian).

“Nowadays, most timber houses built in Slovenia meet the requirements of the international passive house standard.”¹⁶⁷

Sweden

The Swedish Parliament has not adopted “wood first legislation.” However, the government publicly supports the use of timber in public buildings. In 2004, it adopted a plan for the use of more wood in building construction.¹⁶⁸ In his 2018 government declaration (*regeringsförklaring*), Swedish Prime Minister Stefan Löfven specifically mentioned the increased use of timber in building construction.¹⁶⁹ Similarly, in his government declaration of 2021, Prime Minister Löfven highlighted the importance of reducing emissions from construction, which has been perceived as advocating for increased use of timber in building construction because CLT timber is considered more climate friendly than other building materials.¹⁷⁰

The government has published a policy document for direction on the use of timber in buildings.¹⁷¹ Moreover, government representatives have stated that an increase in the use of timber in buildings must be promoted through climate declarations and the creation of procurement criteria.¹⁷² Boverket, the government agency responsible for building construction standards in Sweden,¹⁷³ has been tasked with implementing measures for a more harmonized and integrated Nordic construction market by working with the other Nordic countries and focusing on climate smart solutions to limit the climate effects associated with the building industry.¹⁷⁴

In 2020, the Swedish Government devoted SEK2 million (about US\$200,000) to promote increased construction of wood buildings, especially of multifamily buildings.¹⁷⁵

By law, building plans are decided on the municipal level (*kommun*).¹⁷⁶ An example of one municipality that has adopted a policy for the use of wood in building construction is the Järfälla

¹⁶⁷ Kitek Kuzman & Sandberg, *supra* note 31, at 936.

¹⁶⁸ Regeringskansliet, *Näringsdepartementet, DS 2004:1 Mer trä i byggandet: Underlag för en nationell strategi att främja användning av trä i byggandet*, <https://perma.cc/NZ9W-T7Q5>.

¹⁶⁹ Stefan Löfven, *Regeringsförklaringen* den 21 januari 2019 (Jan. 21, 2019), <https://perma.cc/X6NL-VZ6H>.

¹⁷⁰ Stefan Löfven, *Regeringsförklaringen* den 14 september 2021 (Sept. 14, 2021), <https://perma.cc/C56H-S3ZX>.

¹⁷¹ Regeringskansliet, *Inriktning för Träbyggande*, <https://perma.cc/A9KV-SDZR>.

¹⁷² Press Release, Regeringskansliet, Per Bolund deltar vid invigningen av byggnationen av Stockholms första innerstadskvarter i trä (Oct. 12, 2020), <https://perma.cc/BAV2-SWF8>.

¹⁷³ Regeringen, *Regeringsbrev för budgetåret 2022 avseende Boverket* (Dec. 22, 2021), <https://perma.cc/V3RA-URZZ>.

¹⁷⁴ *Id.*

¹⁷⁵ Press Release, Regeringskansliet, Regeringen beslutar om 2 miljoner kronor för att öka byggandet i trä (June 12, 2020), <https://perma.cc/85FH-ABXV>.

¹⁷⁶ 1 ch. 2 § PBL.

municipality.¹⁷⁷ Specifically, Järfälla specifies that wood and timber should be highlighted as beneficial and promoted as part of public procurements, including requiring bidders to disclose and prioritize low climate impact.¹⁷⁸

Switzerland

The Swiss Constitution provides in article 77 that “[t]he Confederation shall ensure that the forests are able to fulfil their protective, commercial and public amenity functions.”¹⁷⁹ The Forest Act and the Forest Ordinance specify this goal.¹⁸⁰ They provide that the federal government must promote the marketing and use of sustainably produced timber, in particular, by supporting innovative projects, and “encourage the use of sustainably produced timber where appropriate in the planning, construction and operation of its own buildings and installations.”¹⁸¹ The federal Forest Policy 2020 and the federal Wood Resource Policy 2030 as well as action plans based on them set out several policy objectives, objective indicators to measure success, concrete strategic guidelines and measures, and target values.¹⁸² Financial assistance for projects that further the objectives of the Wood Action Plan is available.¹⁸³

Other relevant provisions with regard to using timber as a construction material may be found in public procurement law and the fire code.¹⁸⁴ In particular, a revision of the fire code in 2015 gave equal status to timber constructions with robust, non-combustible cladding and non-combustible construction, such as steel and concrete.¹⁸⁵ With regard to building codes, the Swiss cantons (states) have jurisdiction, resulting in a variety of different buildings codes. The federal government has a coordinating function only with regard to spatial planning but is not competent to adopt a federal building code.

¹⁷⁷ Järfälla, *Trähusstrategi För Järfälla kommun och dess bolag*, Dnr: Kst 2019/510, <https://perma.cc/4Q7F-9QPH>.

¹⁷⁸ Id. at 5.

¹⁷⁹ Bundesverfassung [BV], Apr. 18, 1999, Systematische Rechtssammlung [SR] 101, as amended, art. 77, <https://perma.cc/VHG2-VMA4> (original), <https://perma.cc/6CGK-PUTM> (English translation).

¹⁸⁰ Waldgesetz [WaG], Oct. 4, 1991, SR 921.0, as amended, <https://perma.cc/Z4Q5-8767> (original), <https://perma.cc/WNU2-6SMB> (English translation); Waldverordnung [WaV], Nov. 30, 1992, SR 921.01, <https://perma.cc/VX8E-JKVF> (original), <https://perma.cc/4ADD-RKRS>.

¹⁸¹ WaG, arts. 34a, 34b.

¹⁸² Waldpolitik 2020, Aug. 31, 2011, Bundesblatt [BBl.] 2011, 8731, <https://perma.cc/582M-A9RV>; *Wood Resource Policy 2030. Strategy, Objectives and Wood Action Plan 2021–2026* (FOEN et al. eds., 2021), <https://perma.cc/5LE9-KEMU>.

¹⁸³ *Projektgesuche Aktionsplan Holz*, BAFU, <https://perma.cc/GS3R-7549>.

¹⁸⁴ Bundesgesetz über das öffentliche Beschaffungswesen [BöB], June 21, 2019, SR 172.056.1, as amended, art. 2, letter a, <https://perma.cc/Q48G-AV2L> (original), <https://perma.cc/H8AH-6AR6> (English translation); VKF, Brandschutzvorschriften 2015 [BSV 2015], <https://perma.cc/A9CA-PDY4>.

¹⁸⁵ *Brandschutz bei Holzbauten: Grenzenloses Bauen mit Holz*, BAFU, <https://perma.cc/SMH4-87RY>; Dino Augustin, *Von Feuer und Holz – Die neue Gleichberechtigung im Brandschutz*, Renggli AG (Apr. 14, 2015), <https://perma.cc/Y9LE-HHGY>.

Turkey

Turkey has not adopted legislation or secondary regulations specifically authorizing, requiring, or incentivizing the use of mass timber or cross-laminated timber in construction projects, or specifically authorizing, requiring, or incentivizing the construction of tall wood buildings or tall mass timber buildings. No legislative or regulatory proposals for such rules appear to have been made.

Incentivizing the use of timber is recognized as a priority development area in agricultural policy in the Eleventh Development Plan (2019-2023) adopted by the Grand National Assembly.¹⁸⁶ The objective is cited in the strategy document of the Directorate General of Forests (DGF).¹⁸⁷ In May 2021, it was reported in the media that the DGF submitted a report to the Grand National Assembly (Turkey's national legislature) proposing a project to incentivize, and create standards for, the use of timber in construction to increase the energy-efficient and competitive building stock in Turkey. Reportedly, the DGF report noted the economic advantages of the use of mass timber products such as glue-laminated timber, and it mentioned that the Ministry of Environment and Urbanization and the Ministry of Industry and Technology were expected to prepare legislation on the use of timber in construction.¹⁸⁸ The report was not made public, and it is not accessible.

Ukraine

Reportedly, CLT technology is known to Ukrainian builders and is used in varied regions of the country.¹⁸⁹ The national standard for design and building of structures made of solid and laminated wood was developed by the State University for Construction and Architecture in 2016 and enacted by a government regulation, which amended the National State Building Standards adopted in 2011.¹⁹⁰ The standards provide for the following requirements concerning the CLT panels: number of layers three to 12, thickness six to 100 centimeters, width 60 to 400 centimeters, and length six to 24 meters.¹⁹¹

¹⁸⁶ Presidency of Strategy and Budget, *Eleventh Development Plan (2019-2023)*, adopted by Parliamentary Decision No. 1225 (July 18, 2019), § 415.5, <https://perma.cc/TX6H-L2LL>.

¹⁸⁷ Directorate Gen. Forests, *Stratejik Plan (2019-2023)* 5 (Dec. 2018), <https://perma.cc/T3GR-AB5P>.

¹⁸⁸ Önder Yılmaz, *Ahşap ev atağı* [*Push for Timber Houses*], *Milliyet.com.tr* (May 13, 2021), <https://perma.cc/V6AQ-2XCG>; *Ahşap Yapılar İçin Mevzuat Hazırlanacak!* [*Legislation Will Be Prepared for Timber Buildings!*], *insaatderyasi.com* (May 14, 2021), <https://perma.cc/JL93-2XAU>.

¹⁸⁹ *In Ukraine, a New Technology for Building Houses from CLT Panels Has Appeared*, *ProfiDom* (Dec. 11, 2019), <https://perma.cc/E5RS-XPf6> (in Russian).

¹⁹⁰ Ukraine Regional Dev. Ministry, *State Building Standards, Frameworks of Buildings and Wooden Structures, Basic Provisions, Secs. 8.2 Mass Timber, 8.3 Laminated Wood*, <https://perma.cc/9YD6-RMBW> (in Ukrainian).

¹⁹¹ *Id.*

United Kingdom

While there does not appear to be a specific “wood first” policy in the UK, the government has issued a number of policy papers that encourage the use of timber in construction in a sustainable manner. These papers include the *25 Year Environment Plan*, the *England Trees Action Plan*, and the *Net Zero Strategy*.

The *25 Year Environment Plan*, published in 2018, states that the government wants to increase the use of timber in construction in England.¹⁹² It specifically states that the government will promote

large scale woodland creation to give investors the confidence to renew and expand wood-processing capacity, thereby securing the supply of current wood products and stimulating further innovation with new products such as cross-laminated timber used in construction.¹⁹³

The *Net Zero Strategy*, describes the UK’s strategy to combat climate change.¹⁹⁴ Among other things, the UK will work to “develop a roadmap to increase the use of timber in construction in England.”¹⁹⁵ The government noted that the key opportunities for the use of timber is in low-rise buildings and that it would encourage the use of this material by providing financial supports, exploring the use of timber in lower cost housing, and promoting research and innovation on fire-resistant timber products.¹⁹⁶ In May 2021, the UK government published *The England Trees Action Plan 2021-2024*, in which it noted that it was working on actionable items to encourage the use of timber in construction in England, mirroring those in the *Net Zero Strategy*.¹⁹⁷

A question was asked in the House of Commons in 2017 about what steps the government was taking to encourage the use of cross-laminated timber in construction. The government responded that it was on its agenda and appeared to indicate that it fell under the term “modern methods of construction” and within the home building fund, which consists of £1 billion (about US\$1.15 billion) of funding through loans “for people who are innovating.”¹⁹⁸

Although the UK withdrew from the European Union (EU)¹⁹⁹ and formally left on January 30, 2019,²⁰⁰ the substance of the UK timber regulation regime still mirrors that of the EU.²⁰¹ For

¹⁹² HM Gov’t, *A Green Future: Our 25 Year Plan to Improve the Environment* 49 (2018), <https://perma.cc/JRC6-EEDD>.

¹⁹³ *Id.*

¹⁹⁴ HM Gov’t, *Net Zero Strategy: Build Back Greener*, supra note **Error! Bookmark not defined.**, at 14.

¹⁹⁵ *Id.* at 167.

¹⁹⁶ *Id.* at 179.

¹⁹⁷ *Id.* at 20.

¹⁹⁸ 622 Parl Deb HC (6th Ser.) (2017), <https://perma.cc/MY7R-7NMQ>.

¹⁹⁹ European Union (Withdrawal) Act 2018, c. 16, <https://perma.cc/8NXQ-4ZUS>.

²⁰⁰ *Brexit*, European Council, <https://perma.cc/7KF5-KJ9J>.

²⁰¹ *Regulations: Timber and FLEGT Licences*, Gov.uk, supra note 26.

example, Commission Delegated Regulation (EU) 2017/2293 on the classification, without testing, of cross-laminated timber products concerning their reaction to fire, is incorporated in the UK's domestic laws as "retained EU legislation."²⁰²

The UK tightened restrictions on the use of combustible materials in the external wall or attachment of buildings over 18 meters tall (approximately 59 feet) following a high profile fire at Grenfell Tower, a high-rise London apartment building, in 2017.²⁰³ The fire resulted in 72 fatalities.²⁰⁴ It was widely believed to have been exacerbated by the use of combustible cladding.²⁰⁵

²⁰² Commission Delegated Regulation (EU) 2017/2293, <https://perma.cc/4ANJ-X6S3>.

²⁰³ Building Regulations 2010, SI 2010/2214, <https://perma.cc/4RBZ-ZNWQ>, as amended by the Building (Amendment) Regulations 2018, SI 2018/1230, <https://perma.cc/Y2DU-HVXJ>.

²⁰⁴ Press Release, Metropolitan Police, Commander Stuart Cundy Updates on Grenfell Tower Policing Operation (Nov. 16, 2017), <https://perma.cc/345B-2N9C>.

²⁰⁵ Estelle Shirbon, *Combustible Cladding on London's Grenfell Tower Key to Deadly Fire*, Reuters (Oct. 30, 2019), <https://perma.cc/MAP5-FCZH>.