Impacts – Draft government proposal to Parliament for an Act amending the Act on equipping buildings with electric vehicle charging points and charging point readiness, as well as automation and control systems

1.1.1 Charging points for electric vehicles and bicycle parking spaces

1.1.1.1 Economic impact

An estimate of the number of charging points, their different types of readiness, and the associated costs in accordance with the Directive is presented in Table 4. In addition to these costs, the overall costs of implementing the Directive must also include the requirements concerning buildings owned by public bodies by 2033.

The annual impacts and costs would be highest in the first year, when the requirements set for 2027 (or 2029) for non-residential buildings with more than 20 parking spaces are fulfilled. Without applying the exemption for buildings of low value, the annual number of completed charging points is estimated at approximately 11,780. An estimated 190,170 ducting installations would be carried out in the first year, and 40,020 per year in subsequent years. The annual cost would be approximately EUR 157–210 million in the first year and EUR 94–126 million in subsequent years. When estimating the minimum costs of implementing the Directive, it is assumed that, for existing non-residential buildings with more than 20 parking spaces, only ducting will be installed and no completed charging points at all, as ducting for 50% of parking spaces is generally estimated to be less expensive than installing completed charging points for 10% of parking spaces. If fully operational charging points were required instead of ducting installations, the costs for these buildings would increase by an estimated up to 35%. From the perspective of minimising cost impacts, it is therefore justified to allow the building owner to decide on the most appropriate solution.

By 2030 (over the period 2026–2030), the cost impact of the Directive's minimum implementation is estimated to be approximately EUR 440–590 million. Of the annual costs, the majority would be incurred by non-residential buildings, where ducting installations, pre-cabling, and fully operational charging points would need to be implemented at an annual value of approximately EUR 65–89 million. The introduction of pre-cabling in the revised Directive update is significantly more expensive than the previous requirement for charging point readiness (i.e. ducting installation), as it is considered to include, for example, distribution board costs. For residential buildings, up to 80% of the cost impact would arise from the obligation to install pre-cabling for half of the parking spaces instead of only ducting installations.

Table 4. Estimated costs arising from charging point obligations in the first year.

	Number of buildings subject to the obligation per year			**Number of measures per year**			**Total cost (EUR million per year)**	
Construction types	**New**	**Requiring extensive repairs**	**Existing**	**Ducting**	**Pre-cabling**	**Recharging station**	**Min**	**Max**
Residential buildings, >3 parking spaces								
- new buildings and buildings undergoing major renovation	1 310	1 550	0	15 170	15 170	1 310	29	37
Non-residential buildings								
- new buildings and buildings undergoing major renovation, > 5 parking spaces	2 780	2 190	0	24 850	24850	10 467	65	89

- existing buildings with more than 20 parking spaces (first year only)			50 960	150 150			63	84
in total	**4 090**	**3 740**	**50 960**	**190 170**	**40 020**	**11 777**	**157**	**210**

Construction types	Number of buildings subject to the obligation per year			Number of measures per year			Total cost (EUR million per year)	
	New	Requiring extensive repairs	Existing	Ducting	Pre-cabling	Recharging station	Min	Max
New and requiring extensive repairs								
Residential buildings, >3 parking spaces	1 310	1 550	-	15 170	15 170	1 310	29	37
Non-residential buildings, >5 parking spaces	2 780	2 190	-	24 850	24850	10 467	65	89
Existing								
>20 parking spaces (first year only)	-	-	50 960	150 150	-	-	63	84
in total	**4 090**	**3 740**	**50 960**	**190 170**	**40 020**	**11 777**	**157**	**210**

The Directive introduces an additional requirement for public buildings, according to which, by 2033, pre-cabling must be installed for half of the parking spaces in buildings with more than 20 parking spaces. The additional costs of this requirement are estimated in Table 5. The total cost of these additional requirements for the public sector is estimated at approximately EUR 46–51 million. The cost impact on public sector buildings is significant, as the required pre-cabling includes not only ducting installations and cabling but also other measures, and, since it applies to half of all parking spaces, the overall impact is extensive.

Table 5. Cost estimate for pre-cabling of buildings owned by a public body.

Owner	Total number of buildings	buildings subject to the obligation as at 1 January 2033	Total cost (€ million) Min	Max
the State (the Senate and Defence Properties)	2803	132	1,1	1,3

municipalities (including municipal enterprises)	26455	3844	33,1	36,4
Wellbeing services counties	9663	1404	12,1	13,3
total	**38921**	**5381**	**46,3**	**51**

The annual cost of charging points under the existing legislation is significantly lower than the requirements of the revised Directive, amounting to only EUR 17–25 million. If these costs are deducted from the estimated costs of the recast Directive, the costs for the first year would be EUR 140–185 million, and the total cost for the period 2026–2030 would amount to EUR 355–465 million. This estimate therefore represents the additional costs introduced by legislation implementing the minimum requirements of the recast Directive across the entire building stock by 2030. In addition to these costs, the public sector would incur an additional total cost of approximately EUR 46–51 million by 2033 due to extensive pre-cabling obligations.

The figures presented have been calculated without taking into account the exemptions permitted under the Directive, for example for buildings of low value. The proposal includes the introduction of a so-called cost exemption, according to which charging point requirements would not apply if the costs of installing charging points and cable ducting exceed at least 10% of the total cost of a major renovation of the building. As a result, the costs would decrease significantly. It can be estimated that, by making use of the exemption permitted by the Directive, a substantial proportion of the building stock which is old, in poor condition, and may contain a large number of parking spaces, could be excluded from the requirements. In the impact assessment, it was not possible to use data on the number of buildings in which the cost of implementing charging points would exceed 10% of the value of a major renovation.

For residential properties, the code of practice for construction engineering (RT-kortisto) recommends one bicycle parking space per 30 square metres of residential floor area, and for shopping centres, 2.5 spaces per 100 square metres of floor area. The provision of the Directive concerning residential buildings requires the provision of two bicycle parking spaces per dwelling unit in new buildings and in buildings undergoing major renovation. As some of these spaces may be outdoor short-term parking spaces, any increase in the number of spaces required by the Directive is unlikely to result in significant additional costs for residential properties compared with current recommendations and practices.

However, the potential need to increase bicycle parking may pose challenges, particularly in older residential buildings undergoing major renovation, where there may be no dedicated yard or where the available yard space is already used for parking. In such cases, creating additional space for bicycle parking can be difficult, and in interpreting compliance with the requirements, stricter conditions than those set out in the Directive may not necessarily be imposed. On the other hand, the Directive itself recognises this situation and allows flexibility, which would also be applied at national level: “If, in the case of a major renovation, it is not possible to ensure two bicycle parking spaces per dwelling unit, Member States shall ensure that there are as many bicycle parking spaces as appropriate.”

The recast Energy Performance of Buildings Directive would increase the costs borne by property owners severalfold compared with the current legislation. At the same time, the positive effects of the requirements, namely the expansion of electric vehicle charging infrastructure, would be significantly greater and faster than previous market-driven development.

A major challenge of the new requirements is that the most cost-effective implementation solutions are unlikely, in many cases, to best serve actual user needs. In particular, for many non-residential buildings, demand for relatively slow basic charging points may remain limited if visits to the property are typically short in duration. Property owners may also choose to install charging points that are more efficient than those required by the Directive and forthcoming legislation. However, the cost of such solutions is significantly higher than that of basic charging. The Directive does not allow flexibility in the number of charging points on the basis that the installed points are more powerful than the minimum requirement.

The requirements under the Directive would also significantly increase the costs of major renovations and new construction in residential buildings compared with the current situation. However, a focus on basic charging points and their associated readiness is more likely to meet actual user needs in these buildings as the electrification of transport progresses at the expected pace. It is also likely that, for the same reason, some of the requirements for residential buildings would be implemented even under market-driven conditions.

The cost estimates do not include potential costs for the electricity grid or the costs incurred by property owners for increasing the capacity of their electricity connections. As the Directive does not set clear requirements for the actual charging power to be provided by charging points, the scale of these investments largely depends on the decisions made by property owners. According to the Directive, the dimensioning of charging power must ensure that "...the required number of charging points can be used simultaneously and efficiently...". It is also stated that load management may be used. In particular, if the charging points required under the Directive are to meet actual user needs, it is clear that significant additional costs will arise on top of those outlined above, both in residential and non-residential buildings.

The recast Directive no longer includes the possibility, present in the previous Directive, to exclude micro-enterprises or small and medium-sized enterprises from its scope. Section 10 of Finland's current Act on charging points and automation excludes micro-enterprises from the scope of application. As a result, charging point obligations would in future also apply to micro-enterprises. Consequently, the costs incurred by micro-enterprises are expected to increase significantly compared with the current situation. However, the charging point obligations apply, for example in the case of existing buildings, only to buildings with more than 20 parking spaces.

1.1.1.2 Impact on the activities of public authorities

Under the Charging Points Act, the Finnish Transport and Communications Agency (Traficom) supervises compliance with electric vehicle charging point obligations in existing buildings. The number of buildings subject to Traficom's supervision would not increase as a result of the new obligations. Even under the current framework, charging point requirements apply to buildings with more than 20 parking spaces.

Under the Construction Act, the municipal building control authority is responsible for processing building permit applications and issuing decisions on them. Building supervision is also the responsibility of the municipal building supervisory authority. Even in the situations set out in sections 5, 6 and 8 of the Act currently in force, anyone embarking on a construction project must take into account the fact that the building is designed and installed with a recharging point capability or with recharging points in accordance with the Charging Points Act. The new obligations concerning charging points are not expected to cause additional workload for building control authorities, except in the initial phase, when guidance will need to be updated and the need for advisory services is expected to increase.

With regard to the new parking space requirements, the workload of building control authorities can be considered to increase slightly at the stage when building permits are processed. However, verifying compliance with the bicycle parking requirement at the permit stage would constitute only a minor part of the building permit procedure. Updating guidance and the increased need for advice may lead to a slight increase in workload during the initial phase.

1.1.1.3 Environmental impacts

The impact of charging point readiness (i.e. pre-cabling and ducting installations) and charging points on the increase in the number of electric vehicles, and the resulting environmental effects, cannot be directly assessed. As it can be estimated that purely market-driven demand for charging equipment is significantly lower than the demand resulting from legislative requirements, the requirements would to some extent increase the number of charging points and thereby positively contribute to the electrification of transport, which also has positive environmental impacts.

The environmental impacts of plug-in vehicles are generally assessed based on changes in greenhouse gas emissions. For a current electric passenger car with an average consumption of 20 kWh/100 km, carbon dioxide emissions in Finland are approximately 20–40 grams per kilometre. This is about one third of the emissions of an energy-efficient low-emission petrol or diesel passenger car, which are approximately 100 grams per kilometre.

According to a study by Motiva, the emission reductions from plug-in vehicles are expected to increase between 2020 and 2029, reaching approximately 0.5 million tonnes of carbon dioxide by 2029, based on baseline projections for the number of electric vehicles. According to a study by Motiva, the emission

reductions achieved under the Directive's implementation would be greater under the limited, intermediate, and advanced scenarios.

Based on baseline projections for the number of vehicles and driving performance, Finland's annual electricity consumption would increase by approximately 0.6–0.8 terawatt hours. This amount is relatively small compared with Finland's total electricity consumption, which was 87 terawatt hours in 2018.

Unnecessary charging points may divert resources from other sustainability investments without delivering environmental benefits. For this reason, excessive construction driven by regulatory requirements alone is not beneficial. It should also be noted that, due to technological development, it is not advisable to become overly committed to current charging technologies or to invest in suboptimal charging solutions. Depending on the need, a small number of high-capacity charging points may be a better option than dozens of slow basic charging points that remain underused. In addition, the same amount of money is diverted away from more impactful energy efficiency investments. Other environmental impacts, such as harmful exhaust emissions (carbon monoxide, hydrocarbons, nitrogen oxides, and particulate matter) and noise emissions, were not assessed, although the increased use of plug-in vehicles would reduce them. Nor was the construction of charging infrastructure outside buildings assessed.

1.1.2 Automation and control systems

The automation requirement was already included in the previous legislation and would be expanded to cover a larger number of buildings. According to a 2020 estimate, 59,260 buildings with a power demand exceeding 70 kW would fall within the scope of the new threshold, compared with 22,210 buildings under the previous threshold of 290 kW. In Finnish construction practice, comprehensive automation and control systems are generally implemented in larger buildings where this is technically and economically feasible, even without specific regulatory requirements under a directive. As regards older buildings, some fall within the scope of the tightened power threshold, which would bring forward the installation of such systems.

The significance of the automation requirement is limited, as automation is already developing on a market-driven basis due to its economic and functional benefits. (Assessment and evaluation of the impacts of the national implementation of the amendments to the Energy Performance of Buildings Directive, Finnish Environment Institute (SYKE), 2020) The requirement for automation and control systems is tied to technical and economic feasibility, which is why the economic impact, in addition to market-driven system installations, remains limited.

The Directive defines capability requirements for automation and control systems that largely correspond to typical systems used in new and extensively renovated large buildings. One notable new requirement is the monitoring of indoor environmental quality. In addition, for residential buildings, the Directive requires systems to be capable of responding to external signals and adjusting energy consumption accordingly. While most of these capabilities are typical in new and extensively renovated large buildings, the ability of residential building systems to respond to external signals is not common in current construction practice. As a result, the regulatory impact of the Directive would, in practice, mean a shortening of the upgrade cycle for existing automation and control systems in large buildings by a few years. For small residential buildings, regulatory guidance could further increase the number of automation and control systems.

A comprehensive and well-functioning automation and control system in a building can optimise energy consumption by both reducing purchased energy needs and shifting consumption to times when energy is cheaper and cleaner. Such systems can therefore be economically viable while also reducing the environmental footprint. Given that the number of new automation and control systems installed as a result of the Directive remains modest, the overall environmental impact is also limited. According to the 2020 assessment by Finnish Environment Institute (SYKE), the effects of the automation requirement under the then-current obligations were small. (Assessment and evaluation of the impacts of the national implementation of the amendments to the Energy Performance of Buildings Directive, Finnish Environment Institute (SYKE), 2020) The same logic also applies to buildings subject to the updated power threshold, from which it can be concluded that the impacts of the updated Directive's automation requirement are also minor.