

Appendix 1

Table 1 - List of the current policy or legislation gaps and the corresponding solution, aligned with the WHO FCT.

Current policy/legislation gap	Solution	WHO FCT
Nicotine concentration: for e-cigarettes, a reservoir of a maximum capacity of 2 mL is allowed, with a nicotine concentration limit of 20 mg/mL. This means each e-cigarette can contain up to 40 mg of nicotine, roughly equivalent to the nicotine contained in 2 packs of cigarettes. So, unlike traditional tobacco and HTPs, where consumption can be more consciously regulated by the number of cigarettes smoked, e-cigarettes allow users to consume the equivalent of 2 packs of cigarettes, potentially without realizing it.	The nicotine content should be aligned with traditional cigarette regulations, limiting <u>each tobacco stick of HTPs to 1 mg</u> and reducing the content for <u>each e-cigarette's reservoir to the equivalent of one pack of cigarettes (20 mg)</u> , making this information clear to the consumer.	Article 9
	Ensure <u>clear labeling</u> , particularly for e-cigarettes, so consumers are fully informed about nicotine levels.	Articles 10 and 11.2
Flavorings in e-cigarettes: despite recognizing flavorings as potentially harmful and appealing in HTPs, the current legislation still permits flavorings in e-cigarettes.	<u>Ban flavorings</u> on e-cigarettes for their appealing and harmful effects	Article 9
Devices' design: there are no regulations regarding devices' design, a significant oversight given the tobacco industry's marketing strategies.	Mandate neutral and standardized design (<u>plain packaging</u>) for vaping and heated tobacco devices, making them less attractive, such as in terms of colors or coloring properties, attractive or misleading imagery and descriptors, including names.	Article 11.1 (a)
Access and exposure: despite the ban on sales to minors and consumption inside schools, adolescents still have easy exposure to smoke and access to those products outside school premises. Tobacco retailer density and proximity around educational institutions were found as statistically significant predictors of smoking among students ¹	<u>Establish two tobacco-free zones</u> around educational institutions: one with a smaller radius where tobacco consumption is strictly prohibited, <u>to prevent exposure</u> .	Article 8.2
	And one with a larger radius where the sale of tobacco products is banned, <u>to prevent access</u> .	Article 16.1 (d)

¹ Gwon SH, DeGuzman PB, Kulbok PA, Jeong S. Density and proximity of licensed tobacco retailers and adolescent smoking: a narrative review. J Sch Nurs. 2017;33(1):18-29. doi: 10.1177/1059840516679710

Simplistic health warnings: the text advertising for vapes and HTPs that do not involve combustion is overly generic, consisting of the phrase “This tobacco product harms your health and causes addiction” and “This product contains nicotine, a substance that is highly addictive. Its use is not recommended for non-smokers”. This approach does not sufficiently highlight the unique risks of these products.	Introduce <u>different types of text advertising</u> on all tobacco or nicotine delivery products to inform on their harms.	<i>Article 11</i>
Battery power: despite evidence of higher voltages resulting in higher temperatures and leading to increased delivery of nicotine and toxicants ² , there is no defined maximum battery power for these devices.	<u>Set a maximum battery power</u> for e-cigarettes and HTPs, to limit the influence of power on nicotine and toxicant delivery.	<i>Article 9</i>
Scientific production: most of the scientific data on these new tobacco products were generated and published/funded by the tobacco industry or affiliates ³ which raises doubts regarding conflicts of interest.	Prevent medical and scientific journals from publishing studies <u>generated or funded by the tobacco industry</u> .	<i>Article 5.3</i>
Research gap: there is a shortage of independent studies on the long-term effects of heated tobacco and vaping products, making it difficult to assess their real health impact.	<u>Invest in studies on the long-term impact</u> of heated tobacco and vaping, particularly considering the challenges in generating evidence due to the wide variety of products on the market.	<i>Article 20.1</i>
Law enforcement and monitoring: existing legislation lacks a structured national system to monitor compliance, trends in use, and marketing strategies of emerging tobacco products, particularly among young people.	Establish a national system to <u>enforce the existing legislation and monitor</u> the trends of use, sales, and marketing strategies of emerging tobacco products, particularly for young people.	<i>Article 20.3</i>
Education on tobacco risks: the issue of smoking prevention and control, including the risks of new tobacco products, is not adequately addressed in school curricula, leaving young people uninformed about potential health consequences.	The issue of smoking prevention and control, including the risks of new tobacco products, <u>should be addressed within the health education framework</u> at the primary and secondary education level by properly trained professionals.	<i>Article 12</i>
Taxation: these products’ taxation must be aligned with conventional tobacco products, and, for all, strengthened. Despite recent	<u>Improve understanding</u> regarding the tax burden differences between traditional tobacco products and	<i>Article 6</i>

² Glantz SA, Bareham DW. E-cigarettes: use, effects on smoking, risks, and policy implications. Annu Rev Public Health. 2018;39:215-35. doi: 10.1146/annurev-publhealth-040617-013757

³ World Health Organization. Heated tobacco products: summary of research and evidence of health impacts [Internet]. Geneva: World Health Organization; 2023 [cited 2025 Mar 24]. Available from: <https://iris.who.int/handle/10665/368022>

data on the total tax burden—comprising excise duties and Value Added Tax (VAT)—indicates that Portugal is aligned with the EU average (81.3% vs. 81.9%) and above the best practice defined by WHO ($\geq 75\%$) ⁴ , the retail price of a pack of 20 cigarettes is significantly lower in Portugal compared to other Western European countries ⁵ and has not become less affordable since 2012 ⁶ .	newer alternatives to better assess whether alternative products are taxed effectively to discourage use.	
Environmental impact: Portuguese legislation allows the commercialization of disposable vapes, with environmental consequences that cannot be neglected. Plastic casings, lithium-ion batteries, and electronic components pose challenges to recycling and often end up in landfills. Improper disposal can result in battery leakage, releasing harmful chemicals into the soil and water, while the plastic contributes to long-term pollution. Some European countries, starting with Belgium, followed by France and the United Kingdom, are banning sales of disposable vapes. Germany and Ireland are working on similar legislation. Moreover, Belgium, supported by other member states, is leading efforts to urge the European Commission to introduce stricter regulations or an outright ban at the EU level, highlighting the growing momentum for unified action across the region.	<u>Ban disposable vapes</u> due to their environmental impact, following Belgium and other European countries.	Article 18

⁴ Macumber-Rosin J, Hoffer A. Cigarette taxes in Europe, 2024 [Internet]. Washington (DC): Tax Foundation; 2024 [cited 2025 Mar 24]. Available from: https://taxfoundation.org/data/all/eu/cigarette-taxes-europe-2024/?utm_source=chatgpt.com

⁵ Tenda E. Retail price of a pack of 20 cigarettes in European Union countries in 2022 [Internet]. 2024 [cited 2025 Mar 24]. Available from: <https://www.statista.com/statistics/415034/cigarette-prices-across-europe/>

⁶ World Health Organization. MPOWER Portugal [Internet]. Geneva: World Health Organization; 2023 [cited 2025 Mar 24]. Available from: <https://mpowerportal.org/country/>