



# Global Taxation of **ENDS** AND **ENNDs**

A Cross-Country  
Evaluation and  
Recommendations  
for Taxation

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## Essential facts

At a time when many countries are seeing declines in tobacco use, electronic nicotine delivery systems and electronic non-nicotine delivery systems (ENDS/ENNDS or e-cigarettes) are attracting a new generation of users, undermining progress to reduce tobacco consumption. Despite the long-term health effects being unclear, evidence demonstrates that ENDS/ENNDS use is not harmless nor without risks, particularly among never smokers and youth. Non-smokers using ENDS are 3 times more likely to go on to smoke conventional cigarettes compared to non-ENDS users.<sup>1</sup>

Among youth in the US aged 12–15, use of ENDS as one’s first tobacco product was associated with more than 4 times the odds of ever cigarette use and nearly 3 times the odds of current cigarette use.<sup>2</sup> Further, there is limited evidence to suggest that these products are effective smoking cessation aids.<sup>1</sup> In fact, ENDS tend to be used in combination with conventional tobacco products like cigarettes (dual use), and smokers using ENDS as a cessation aid are more likely to prolong their exposure to nicotine and increase their individual risk, compared to other methods of cessation.<sup>1,3,4</sup> Given the potential public health harms posed by these products, governments should adopt fiscal policies that tax all ENDS/ENNDS components, as part of a comprehensive tobacco control approach.

## Understanding ENDS/ENNDS products

The ENDS/ENNDS market is diverse, with nearly 16,000 e-liquid flavors available, and more than 30,000 brands sold in the European Union (EU) alone.<sup>5</sup> Though ENDS/ENNDS vary greatly in look and functionality, most products consist of three main elements: an atomizer, a power source or battery, and a container such as a cartridge or tank. ENDS/ENNDS products are either open or closed systems. Open systems feature a prominent chamber (tank) that is refillable with a third-party e-liquid solution; closed systems consist of a disposable or reloadable prefilled cartridge.<sup>6</sup> Contrary to closed systems which are not customizable, open systems allow users to select from a greater range of nicotine concentrations and flavors, as well as purchase the basic ingredients necessary to mix the user’s own e-liquid.

E-liquid contents vary in nicotine concentration, flavorings, water content, propylene glycol and glycerin content, and the presence of other compounds. Nicotine, a highly addictive substance contained in most e-liquids, can range from 0 mg/mL to more than 66 mg/mL— at least twice the nicotine content found in conventional cigarettes (many countries have banned the sale of e-liquid containing more than a certain maximum nicotine concentration, often a maximum of 20 mg/mL<sup>7</sup>). Salt-based e-liquids, a recently developed type of nicotine composition commonly found in e-liquids used in ENDS, have been engineered to deliver nicotine more efficiently and with less irritation (compared to free-base nicotine found in conventional cigarettes),<sup>8</sup> making it easier for new users to initiate use and quickly develop an addiction.<sup>9</sup>

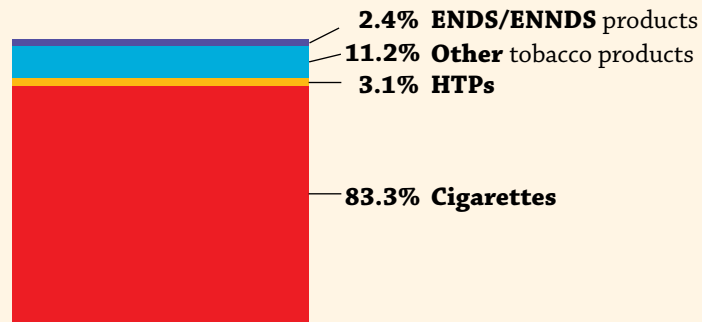
The evolution of ENDS/ENNDS markets

Like heated tobacco products (HTPs), ENDS/ENNDS make up a small fraction of the global tobacco and nicotine market (Figure 1).<sup>10</sup> Though HTPs and ENDS/ENNDS make up just more than 5% of the global tobacco market, their share has grown rapidly over the past decade. This is in contrast with the declining trend of cigarette sales (Figure 2). The World Health Organization (WHO) recommends that countries that have not banned the sale of ENDS/ENNDS ensure their tobacco control laws and regulations are comprehensive enough to regulate all forms of emerging tobacco products.<sup>5</sup> This approach is consistent with the general obligations of the WHO Framework Convention on Tobacco Control (FCTC), which require Parties to the Convention to implement measures for preventing and reducing nicotine consumption.<sup>11</sup>

This approach recognizes the risk of keeping emerging products like ENDS/ENNDS unregulated as:

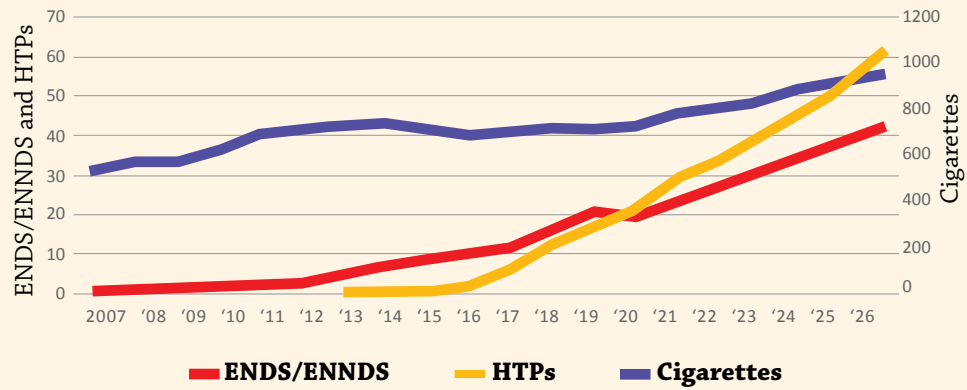
- 1. They represent a potential gateway to conventional smoking for non-users, especially among youth;
- 2. Their long-term health effects are unknown and may be worse for dual users;
- 3. They are not harmless products; and
- 4. The industry uses these products to “renormalize” smoking behaviors.

Figure 1:  
Global retail value of tobacco and nicotine products, 2021



SOURCE: Euromonitor International 2022 Ed.\*  
\*Euromonitor does not have complete market coverage of ENDS/ENNDS or HTPs, thus market data may be underestimated.

Figure 2:  
Global retail value of ENDS/ENNDS, HTPs, and cigarettes from 2007-2026



SOURCE: Euromonitor International 2022 ed.\*  
NOTE: USD, current value, historic year-on-year exchange rates. Retail value projections made for 2023 through 2026.  
\*Euromonitor does not have complete market coverage of ENDS/ENNDS or HTPs, thus market data may be underestimated.

Impact of ENDS/ENNDS tax policies on consumption

Well-designed taxes on ENDS/ENNDS may be a significant and stable source of revenue, while being effective tools in:

- 1. Reducing the consumption of all tobacco and nicotine products, except those licensed as cessation products;
- 2. Reducing ENDS/ENNDS initiation among particularly vulnerable populations such as youth and low-income individuals;
- 3. Reducing the intensity of use among users that do not quit; and
- 4. Protecting non-users from exposure to potentially harmful emissions.

Though still developing, existing research indicates that the demand for e-cigarettes may be more responsive to price changes compared to the demand for conventional cigarettes, indicating that tax and price policies may be a strong deterrent to initiation.<sup>12</sup> Taxation is a key component of nicotine and tobacco product regulation<sup>A</sup> given its proven effectiveness as a policy tool that generates revenue and achieves public health goals.<sup>13,14</sup>

A. Nicotine products licensed as cessation products are excluded from this policy brief.

## Taxation of ENDS/ENNDS in the world

Based on available data (as of May 2023), and among countries that permit the sale or manufacture of ENDS/ENNDS, at least 54 countries and 33 US jurisdictions (30 states, DC, and two territories)<sup>15,16</sup> currently tax ENDS/ENNDS products (see Table 1 and Appendix Table 1). Excise tax structures can be specific excise systems (based on the quantity or volume of liquids) and/or ad valorem excise systems (based on value). Tax rates can be uniform across ENDS/ENNDS products or include differential (tiered) rates dependent on product characteristics (e.g., nicotine concentration, e-liquid volume, type of vaping system).

Tax systems for ENDS/ENNDS vary compared to those for conventional tobacco products like cigarettes. Differences are mainly due to the diversity of the ENDS/ENNDS market, including differences in the composition of nicotine used in e-liquids (free-base vs. salt-base), nicotine concentration, and the volume of e-liquid products, among others. Though there is no clear recommended tax structure for ENDS/ENNDS products, countries tend to employ four main tax systems: specific, ad valorem, tiered, and mixed. Countries may impose taxes on all ENDS/ENNDS products and related products (including devices, accessories, and e-liquids) or impose taxes only on nicotine-containing e-liquids (vs. tax on all e-liquids, regardless of the presence of nicotine).

Appendix Table 1 describes the tax system employed in 54 countries that apply an excise tax on ENDS/ENNDS. The table does not necessarily include countries in which ENDS/ENNDS are allowed for sale and subjected to general sales taxes (e.g., value-added tax [VAT], goods and services tax [GST], national or local retail sale tax/price [RST/P]). In most countries listed in Table 1 and Appendix Table 1, ENDS/ENNDS are subject to general sale tax in addition to an excise tax. Overall, 37 countries tax e-liquids regardless of nicotine content, while 17 countries tax only nicotine-containing e-liquids.

Thirty-Nine countries employ a pure specific excise system. Among these 39 countries, 11 tax only nicotine-containing e-liquids, and 28 tax all e-liquids regardless of the presence of nicotine. The specific excise tax adopted in these countries is almost always based on the volume of e-liquid itself (milliliters [mL], liters [L]) or the weight (milligrams [mg], grams [g]).

Of the 39 countries, 30 employ a uniform specific excise system to tax e-liquids. Nine of the 39 countries that employ a specific tax, employ a tiered specific excise system, 5 of which tax nicotine-containing e-liquids only (Denmark, Indonesia, Norway, Philippines, Sweden) and 4 of which tax all e-liquids regardless of nicotine content (Canada, Italy, Morocco, Slovenia). Countries like Canada apply tiered tax rates based on the volume of e-liquid products; Denmark employs tiered rates based on the concentration of nicotine per mL of e-liquid; in Norway, the tax is dependent on whether the nicotine-containing product is solid (based on weight) or liquid (based on volume); and Italy, Morocco and Slovenia employ tiered rates based on volume for nicotine-containing e-liquid and nicotine-free e-liquids.

Indonesia applies a tiered specific excise tax based on the type of ENDS product (i.e., open systems, closed system), and the Philippines applies tiered tax rates based on the type of nicotine (free-base nicotine or salt-base nicotine).

Eleven countries apply an ad valorem system using various tax bases. Six of these 11 countries tax only nicotine-containing e-liquids (Bahrain, China, Ecuador, Jordan, Kuwait<sup>A</sup>, Saudi Arabia), and 5 tax all e-liquids regardless of nicotine content (Costa Rica, Maldives<sup>B</sup>, Paraguay, Togo, United Arab Emirates [UAE]). China applies tiered ad valorem taxes that vary depending on the stage of production. Three of the 6 members of the Gulf Cooperation Council (GCC), Bahrain, Saudi Arabia, and the UAE, apply an ad valorem excise tax on the “pre-tax price” of all tobacco products, including ENDS/ENNDS (Oman and Qatar, 2 of the 6 GCC states, ban the import of ENDS/ENNDS; Kuwait has postponed adoption of their excise tax). In Jordan and the Maldives, the tax base is the CIF value (cost, insurance, and freight) of e-liquids. In China, Costa Rica, Paraguay, and Togo the tax base is the wholesale value, though China also applies an additional tax on the producer value.

In Ecuador, the base of the ad valorem tax for domestically produced e-liquids is 150% of the manufacturer’s selling price, net the VAT and the excise itself, plus a minimum 30% trade margin. In the case of imports in Ecuador, the ex-customs price replaces the net ex-factory price.

Four countries apply a mixed excise system that includes both a specific excise and an ad valorem excise (Egypt, Ghana, Israel, Kenya). In Egypt and Kenya, the tax base for the ad valorem excise is the RSP; while in Ghana, the tax base for the ad valorem excise is the CIF value. In March 2023, Israel changed its excise tax system from a tiered mixed excise system (tiered rates for e-liquids and disposable ENDS/ENNDS) to a single mixed excise system that includes an ad valorem tax based on the wholesale price, a specific tax, and a minimum excise based on volume.

Twelve countries explicitly tax ENDS/ENNDS devices (Azerbaijan, Belarus, China, Costa Rica, Ecuador, Ghana, Jordan, Kenya, Kyrgyzstan, Saudi Arabia, South Korea, UAE). In countries that employ an ad valorem excise, the tax often applies to the entire ENDS/ENNDS system. Kyrgyzstan imposes a minimum specific excise on nicotine-containing devices; in Indonesia, which employs a tiered specific excise system, differential tax rates depend on the type of device (i.e., open system, closed system). Unless there is a separate tax for devices and accessories apart from that of e-liquids, the tax burden on closed systems tends to be smaller than that of e-liquids sold separately.

A. In Kuwait, the excise tax adopted in 2022 applied to all tobacco products, including HTPs and ENDS. The excise was set to take effect Jan. 1, 2023. However, implementation of the excise has been postponed.

B. The Maldives do not impose an excise tax on ENDS/ENNDS per se, but instead impose an import duty on all tobacco products, explicitly including ENDS/ENNDS.

Table 1: Type of excise tax applied on ENDS/ENNDS as of May 2023 <sup>14,15,16</sup>

Type of Excise	Taxing only nicotine-containing e-liquids (ENDS) [17]	Taxing all e-liquids (ENDS/ENNDS) [37]
Specific (vol./mL) [30]	Albania, Kazakhstan, Kyrgyzstan, Portugal, Romania, Russia [6]	Armenia, Azerbaijan, Belarus, Bulgaria, Croatia, Cyprus, Estonia, Finland, Georgia, Germany, Greece, Hungary, Latvia, Lithuania, Malaysia, Montenegro, North Macedonia, Pakistan, Poland, Serbia, South Africa, South Korea, Ukraine, Uzbekistan [24]
Tiered specific [9]	Denmark, Indonesia, Norway, Philippines, Sweden [5]	Canada, Italy, Morocco, Slovenia [4]
Ad Valorem (% of RSP or import value) [10]	Bahrain <sup>A</sup> , Ecuador, Jordan, Kuwait <sup>B</sup> , Saudi Arabia [5]	Costa Rica, Maldives, Paraguay, Togo, United Arab Emirates [5]
Tiered ad-valorem [1]	China <sup>C</sup> [1]	
Mixed <sup>D</sup> [4]		Egypt, Ghana, Israel, Kenya [14]

A. Tax is applied to e-hookah because e-cigarettes are banned in Bahrain.  
B. The excise tax system has not yet gone into effect but is expected to be implemented in 2023.  
C. In China, nicotine-free e-liquids are prohibited.  
D. Mixed systems include both ad valorem and a specific tax.

[#] = number of countries

Tax burden of ENDS/ENNDS

The diversity of the ENDS/ENNDS market within and across countries, as well as the diversity of tax bases (i.e., closed system and/or open system, nicotine-containing and/or nicotine-free e-liquids, devices and/or e-liquids, nicotine concentration, nicotine composition, e-cigarette accessories, etc.), complicate comparative analyses per unit of ENDS/ENNDS or per unit of volume. To overcome this barrier, we obtained detailed information on price and tax for several countries (most countries listed in Table 1), based on price data for 2023 (For Methodology, please refer to the Technical Note in the Appendix). To simplify comparisons across countries, we focus on e-liquids sold with open systems and do not factor in device taxation.

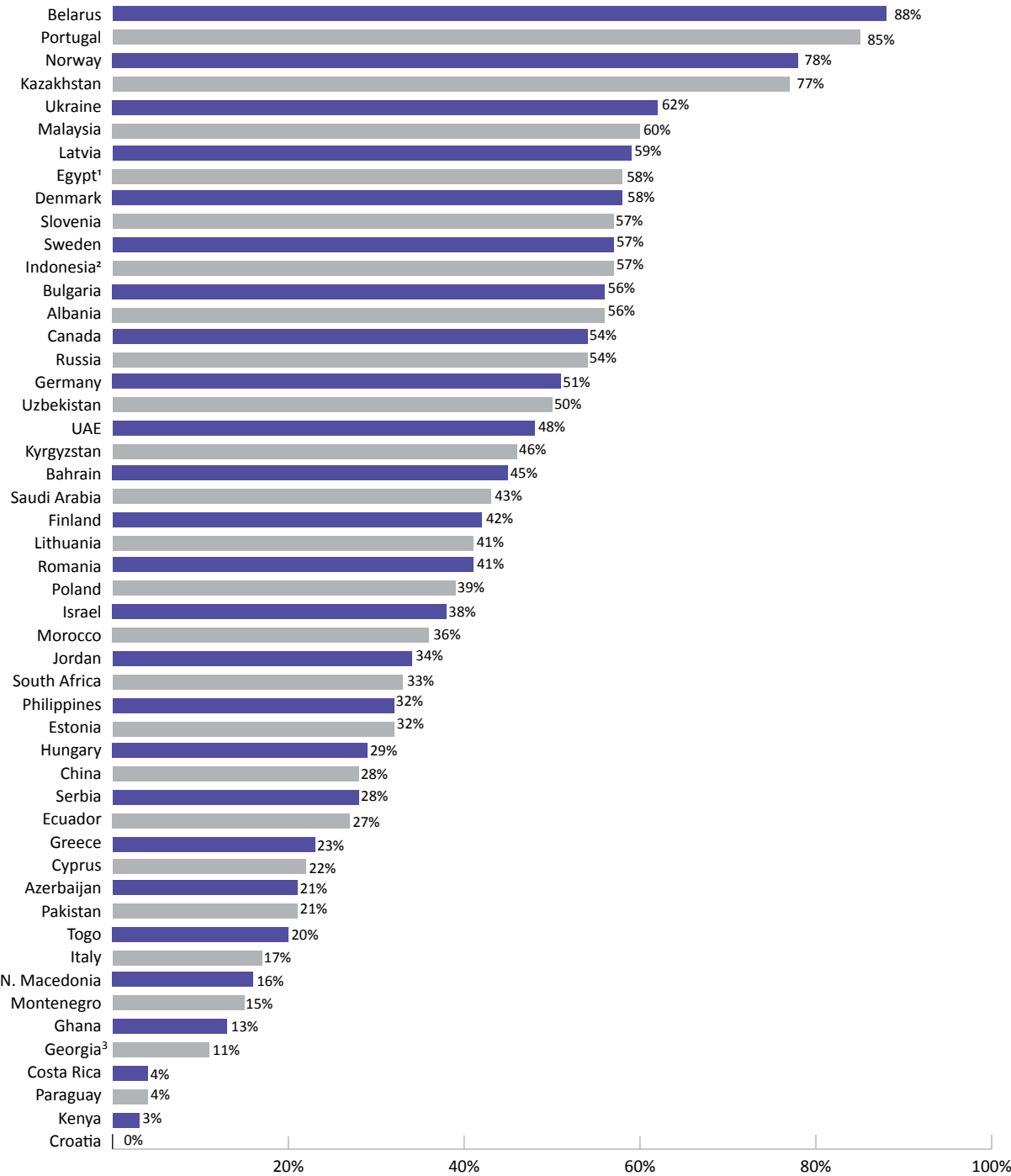
To determine the excise tax burden of ENDS/ENNDS, we calculate the tax amount per mL of e-liquid in ENDS/ENNDS systems and convert the price of e-liquid to a price/mL. In countries that apply an ad valorem system based on the value of e-liquids, CIF, or the ex-factory cost, we assume that this cost represents about 20% of the RSP.<sup>A</sup> The *excise tax burden* is defined as the ratio of excise taxes to price/mL of e-liquid (also known as the tax share in the price), and is obtained for most countries shown in Table 1, and presented in Figure 3.<sup>B</sup> The *total tax burden* includes the excise tax, other sales tax such as RST, VAT, and/or import taxes (see Figure 4). Both the excise tax burden and total tax burden are calculated for 50 countries for which we have price information.<sup>C</sup> Further details on the calculation and conversion of price, tax, and tax burden can be found in the Technical Note located in the Appendix.

As shown in Figure 3, the excise tax burden is highest in Belarus at 88%. Portugal, Norway, Kazakhstan, Ukraine, and Malaysia follow, with excise tax burdens at, or above, 60%. Of the countries observed, only 4 have an excise tax burden above 70% (Belarus, Portugal, Norway, Kazakhstan). In total, about 36% of countries observed have an excise tax burden above 50%, and 36% have an excise tax burden below 30%. As shown in Figure 4, the total tax burden is highest in Belarus and Portugal. Norway and Kazakhstan follow, with total tax burdens above 80%. The smallest tax burden and total tax burdens are found in Costa Rica, Croatia, Kenya and Paraguay.

A. This conversion is similar to that used by the WHO and can be found in methodology of the WHO Report on the Global Tobacco Epidemic 2021.  
B. Georgia's updated tax rates for ENDS/ENNDS entered into force on April 18, 2023, increasing the specific tax rate on ENDS/ENNDS from GEL 0.20/mL to GEL 1.00/mL. This update is not yet reflected in the text, nor the tax burden figures below.  
C. Four countries which we could not obtain price information are not included in this list, though they have adopted or impose a tax on e-liquids (as shown in Table 1): Armenia, Kuwait, Maldives, and South Korea.



Figure 3:  
Excise tax burden of e-liquids sold in open systems

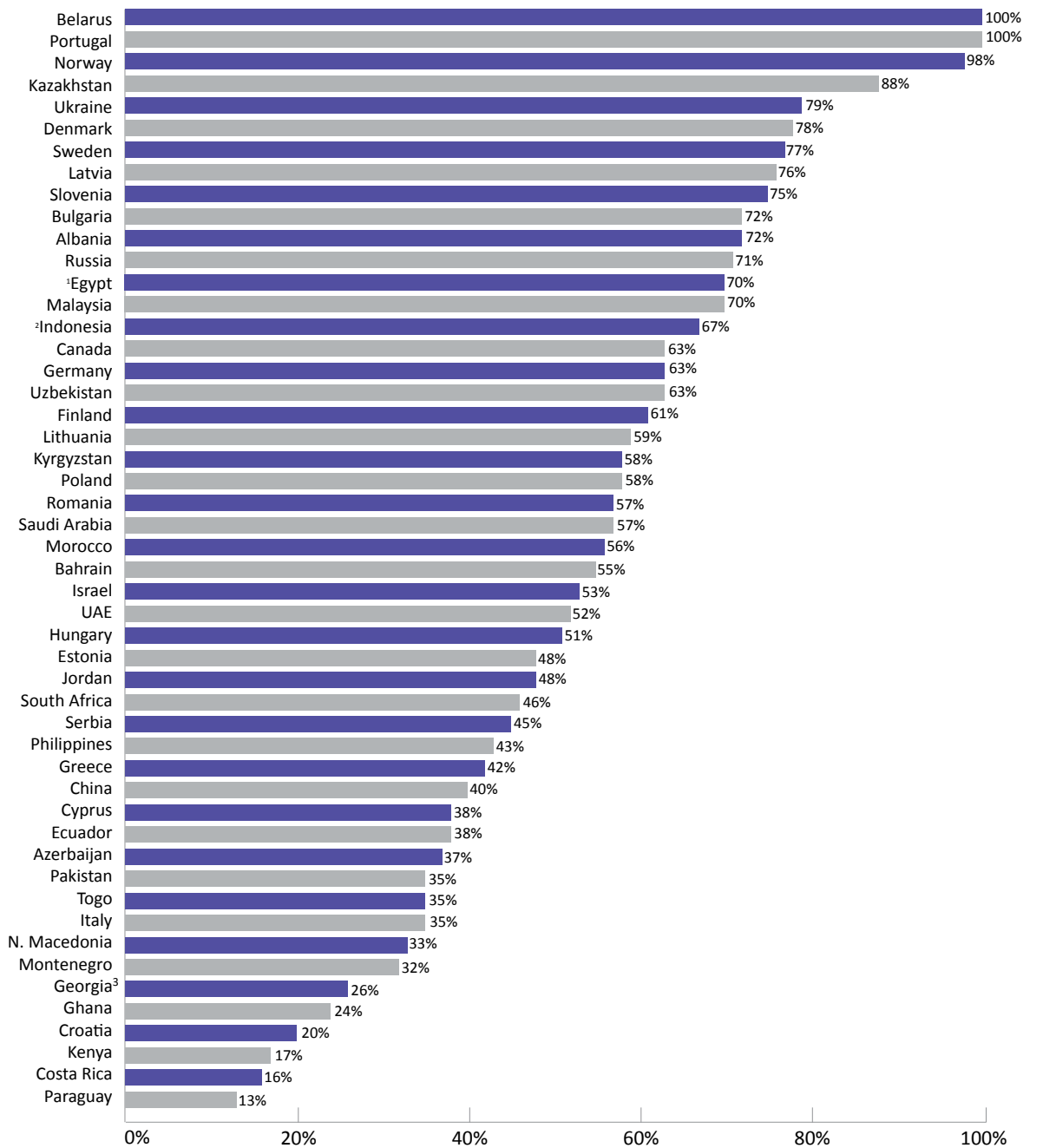


**SOURCE:** CTFK calculations, based on statutory law and assumptions: Price data obtained from *E-cig Intelligence Unit* (2022 or 2023 prices) and the WHO’s Global Report on the Tobacco Epidemic, 2021. For further information on calculations, see the Technical Note located in the Appendix.

**NOTES:**

- UAE: United Arab Emirates; N. Macedonia: North Macedonia
  - Four countries for which we could not obtain price information are not included in this list, though they currently impose or have adopted a tax on e-liquids (as shown in Table 1): Armenia, Kuwait, Maldives, and South Korea.
1. The excise tax burden shown for Egypt is the rate for free-base nicotine in Egypt (58%). However, the excise tax burden for salt-based nicotine is half of that amount at 25%.
  2. The excise tax burden shown for Indonesia, is the rate for e-liquids used in open systems (56.7%); however, the tax burden that applies to closed systems is much smaller at 17%.
  3. Georgia’s April 18, 2023 update to the excise tax is not reflected in this figure. Assuming that the new excise tax is fully passed onto the retail sale price, we estimate a 65% excise tax burden.

Figure 4:  
Total tax burden of e-liquids sold in open systems



**SOURCE:** CTFK calculations, based on statutory law and assumptions: Price data obtained from *E-cigarettes Intelligence Unit* (2022 or 2023 prices) and the WHO’s Global Report on the Tobacco Epidemic, 2021. For information on the calculations, see the Technical Note located in the Appendix.

**NOTES:**

- UAE: United Arab Emirates; N. Macedonia: North Macedonia
  - Four countries for which we could not obtain price information are not included in this list, though they currently impose a tax on e-liquids (as shown in Table 1): Kazakhstan, Kenya (price is defined per unit), Maldives, and South Korea.
1. The total tax burden shown for Egypt is the rate for free-base nicotine in Egypt (70.3%). However, the total tax burden for salt-based nicotine is half that amount at 37.3%.
  2. The total tax burden shown for Indonesia, is the rate for e-liquids used in open systems (66.8%); however, the tax that applies to closed systems is much smaller with a total tax burden of 27%.
  3. Georgia’s most recent update to the excise tax entered into force April 18, 2023. This change is not reflected in the figure.

Specific excise tax structures

As shown in Table 1 (and Appendix Table 1), the majority of countries that tax e-liquids or ENDS/ENNDS employ a specific excise structure based on quantity (defined by the volume or weight). It is generally recognized that for conventional cigarettes, a specific excise tax is more effective than ad valorem. This is because the tax base for conventional cigarettes (number of sticks, pack, tobacco content) is generally more observable and standardized compared to an ad valorem excise structure for cigarettes.<sup>14</sup>

However, given the diversity and variety of the ENDS/ENNDS market, it may be difficult to accurately measure the volume of taxable e-liquid, especially in countries that apply an excise tax based on the concentration or content of nicotine in e-liquids.<sup>14</sup> In this case, sufficient administrative capacity is required to test e-liquids in order to ensure the validity and accuracy of ENDS/ENNDS labels. Of note, evidence indicates that nicotine delivery in the body may be impacted by factors not accounted for in a specific excise system, such as battery power, user smoking history, and potential to mix e-liquids with other substances.

A specific tax system for ENDS/ENNDS may be optimal in countries that have limited variation in the price and type of ENDS/ENNDS products available and have sufficient administrative capacity to test e-liquid products. In the United States, where ENDS/ENNDS are regulated by the Food and Drug Administration (FDA) (e.g., allowed brands, labeling, marketing), a specific tax based on nicotine concentration at the federal level may be optimal, as it would ensure a minimum tax per unit of nicotine. A specific excise tax system may not be optimal in countries with a large variety of ENDS/ENNDS products, and/or large price variation between ENDS/ENNDS types. In some low- and middle-income countries (LMICs), specific excise systems for ENDS/ENNDS were changed due to insufficient administrative capacity to verify the volume, concentration, and/or presence of nicotine in e-liquid products. Nevertheless, limitations of the specific excise tax system applicable to ENDS/ENNDS may be mitigated in the design of a specific excise system and with strong parallel non-tax policies. To mitigate limitations in the design of a specific excise system applicable to ENDS/ENNDS, taxes should apply to all ENDS/ENNDS products, regardless of nicotine content or concentration. Parallel non-tax policies should regulate the variety of ENDS/ENNDS products that may be imported or manufactured in a country.

Table 2: Relative advantages/disadvantages of specific tax systems between cigarettes and ENDS/ENNDS<sup>14,15,16</sup>

	SPECIFIC EXCISE TAX APPROACH	
	Conventional Cigarettes	Application to ENDS/ENNDS
Advantages	<p><b>Automatically raises prices per unit.</b> Specific taxes generally apply at the production stage and therefore add to the ex-factory/manufacturer or wholesale price per unit sold. Therefore, they automatically add a fixed amount to the pre-tax retail price, if the tax is at least fully passed to retail prices.</p> <p><b>Act as a minimum tax contribution.</b> Specific taxes are fixed regardless of the price and are considered a minimum tax per unit.</p> <p><b>Predictable.</b> Specific excise taxes are not sensitive to price changes. Tax revenue depends only on consumption volume and not consumption value. Inelastic demand increases the predictability of tax remittances.</p> <p><b>Cost effective.</b> Specific excise taxes require less administrative capacity and are thus less costly to administer.</p>	<p><b>Advantages of a specific tax system applicable to conventional cigarettes are generally applicable to END/ENNDS.</b></p> <p>The administrative capacity required to implement a specific excise may necessitate upfront costs initially, but as capacity grows over time, costs to administer the tax should level.</p>
Disadvantages	<p><b>May favor products over others in heterogenous markets.</b> Specific excise taxes may favor expensive cigarettes over economy cigarettes. This may be an advantage if the government objective is to reduce tobacco demand, which is often larger for economy products.</p> <p><b>Real value of the excise tax erodes.</b> Unless the tax is adjusted with inflation and income growth, the real value of a specific excise tax will automatically erode over time. However, this can easily be avoided with periodic (e.g., annual, bi-annual) indexation.</p>	<p><b>Easy to avoid.</b> Though a tax per unit of volume systematically raises the price of products, specific taxes are easier to avoid in countries with limited capacity to measure e-liquids in ENDS/ENNDS.</p> <p><b>Easy to avoid if dependent on nicotine content.</b> If the tax per volume of e-liquid is dependent on nicotine content, it may be avoided if consumers can obtain nicotine independently from their purchase of ENNDS and self-prepare nicotine-containing e-liquids.</p> <p><b>Easy to avoid if dependent on nicotine concentration.</b> If the tax per volume is dependent on nicotine concentration, the tax may be avoided in countries with limited capacity to measure nicotine concentration or assess accuracy of labels.</p> <p><b>Disadvantages applicable to conventional cigarettes are generally applicable to END/ENNDS.</b></p>

Ad valorem tax structures

Ad valorem taxes are applied as a percentage of sale value. Countries that employ an ad valorem excise system use various tax bases. Tax bases include the RSP or the gross sale value at an earlier stage of production (e.g., the ex-factory value, the wholesale value, the CIF, import value, manufacturers’ price). The WHO and most scholars recommend that ad valorem taxes be imposed on the RSP. That is, at the point of sale, rather than earlier in the production process. There are many reasons for this recommendation. Importantly, prices tend to be less transparent at earlier stages of production, making it more difficult and costly to monitor price variation and accurately predict tax revenue.<sup>14</sup> It is notable that even in countries where the tax is based on the RSP, it is often collected at earlier and less transparent stages of production.

Despite the recommendation to apply and collect taxes on the RSP at the point of sale, only 2 of the 15 countries that employ an ad valorem or mixed system for the taxation of ENDS/ENNDS, use the RSP as the tax base (Egypt, Kenya). Three GCC members that tax ENDS/ENNDS, use the “pre- tax price” as the tax base and is the same base used for conventional tobacco products (Bahrain, Saudi Arabia, UAE); eight countries use the wholesale value, CIF value, or the import cost as the tax base (China, Costa Rica, Ghana, Israel, Jordan, Maldives, Paraguay, Togo). China, which employs a tiered ad valorem system also uses the production value as the tax base for a second ad valorem tax. In Ecuador, the tax base involves a complex calculation.\*

For conventional cigarettes, the WHO generally warns against ad valorem excise systems. This is because ad valorem systems tend to be difficult to monitor and often increase price variation among cigarettes. Ad valorem price structures may also be manipulated by manufacturers to avoid paying higher taxes. Since ad valorem taxes are dependent on manufacturer pricing, it is difficult for governments to predict the resulting tax revenue. The health impacts of an ad valorem excise are also uncertain when applied to conventional cigarettes. For example, after an increase in ad valorem taxes, it is common for cigarette manufacturers to increase the price gap between economy products and high-end products. This is so that the industry can maintain market share while preserving profit. This is often reflected as an under-shifting of taxes to prices for cheap products and over-shifting of taxes to prices for expensive ones.<sup>17</sup>

Changing product attributes and/or creating new or cheaper cigarette products is another common strategy that the tobacco industry uses to undermine an ad valorem tax system. This tactic may also be applicable to ENDS/ENNDS products given the significant price variation and diversity of the market. To reduce potential price manipulation by the industry, we strongly recommend that ad valorem taxes apply to the RSP of the product and include a minimum excise tax.<sup>14</sup>

Advantages of an ad valorem tax structure include automatic adjustments for inflation, given that the tax base is the value of the product; price leveling across products in a diverse ENDS/ENNDS market;<sup>18</sup> and removal of the need to measure quantities of ENDS/ENNDS (e.g., volume, concentration, content).

\* In Ecuador, the base of the ad valorem excise tax for domestically produced e-liquids is 150% of the manufacturer’s selling price net the VAT and the excise itself, plus a minimum 30% trade margin.

Table 2: Relative advantages/disadvantages of ad valorem tax systems between cigarettes and ENDS/ENNDS<sup>14,15,16</sup>

	AD VALOREM EXCISE TAX APPROACH	
	Conventional Cigarettes	Application to ENDS/ENNDS
Advantages	<b>Automatically adjusts for inflation.</b> Since ad valorem taxes are based on value, the real value of the tax is preserved as prices increase.	<b>Quantity is not a necessary measurement.</b> Given the diversity of products, measuring quantity of ENDS/ENNDS may be difficult and costly to measure, especially in countries with limited administrative capacity. As ad valorem taxes depend on total value rather than quantity, they may be less expensive to administer than a specific excise tax. This possible advantage, however, depends on the tax base (values other than the RSP are often nontransparent).  <b>Advantages that apply to conventional cigarettes also apply to END/ENNDS.</b>
Disadvantages	<b>Complex and costly to administer.</b> Considerable administrative capacity is required to implement and enforce ad valorem taxes, as market prices must be regularly monitored. This is particularly true if the base is applied to an earlier stage of production (vs the RSP).  <b>Subject to industry pricing manipulation.</b> Given that ad valorem excise taxes are dependent on sale value, producers may manipulate price to limit the impacts of tax increases on volume and profit. This is typically done by increasing price differentials between premium products and economy substitutes.  <b>Availability of cheaper tobacco products may increase appeal to vulnerable populations</b> like youth, low-income individuals, and non-users whose demand is particularly elastic.	<b>Large price variation may increase youth appeal more than variation for conventional cigarettes.</b> This is exacerbated by the marketing strategy for ENDS/ENNDS that generally targets youth.  <b>Disadvantages that apply to conventional cigarettes also apply to END/ENNDS.</b>



## Recommendations on ENDS/ENNDS taxation

Although the optimal approach is dependent on a country’s context, it is recommended that:

1. All countries impose taxes on all e-liquids regardless of the presence of nicotine;<sup>14</sup>
2. ENDS/ENNDS be incorporated into a country’s existing tax code; and
3. ENDS/ENNDS be taxed at significant rates, as part of a comprehensive tobacco control approach.

The large variation in the ENDS/ENNDS market, key differences between ENDS/ENNDS and conventional tobacco products, and the lack of evidence on the effectiveness of ad valorem vs. specific excise tax systems increasing the prices of ENDS/ENNDS, makes it difficult to provide a clear and concise recommendation for the optimal tax system a country should employ. Relative advantages of a specific tax system may exist in countries with sufficient administrative capacity and in more limited and heavily regulated ENDS/ENNDS markets. The relative advantages of an ad valorem tax system may outweigh the advantages of a specific excise system in countries where the ENDS/ENNDS market is heterogenous and highly unregulated.

Ultimately, the optimal excise system is dependent on countries’ unique contexts, including government objectives, administrative capacity, and parallel non-tax regulations for ENDS/ENNDS. Country-specific context provides guidance on the most appropriate excise tax system.

## Appendix

### Technical note

#### Calculation in all countries: Prices

For all countries, we obtain price information from two main sources: the WHO’s Global Report on the Tobacco Epidemic, 2021 (which corresponds to prices applied in 2020) and the E-Cigarettes Intelligence Unit (last information available as of Jan. 2023). When taxes have been updated prior to 2023, we assume that the change in the excise tax rate is fully passed on to retail prices. In addition, when unable to obtain price data for 2023, we assume that nominal prices in previous years have increased with inflation, using the Consumer Price Index (CPI).

For example, assuming that:

- The year for which we have the latest tax information is year  $t$  (generally  $t = 2023$ );
- The latest year for which we have price information is 2 years prior to the year for which we have tax information (that is,  $t-2$ ), then the price is calculated as  $P_{t-2}$  per mL for that year.
- Assuming that: The country has a pure specific tax rate that increased from  $E_{t-2}$  to  $E_{t-1}$  from year  $t-2$  to year  $t$ ;
- The inflation rates are  $i_{t-2}$  and  $i_{t-1}$  in the previous 2 years, respectively.

Then, we calculate the new price per mL, as of year  $t$  as:

$$P_t = P_{t-2} * (1 + i_{t-2}) * (1 + i_{t-1}) + * (1 + i_{t-2}) + E_t - E_{t-2}$$

We convert prices to purchasing power parity (\$PPP) values or USD values using \$PPP conversion rates, or the USD exchange rates (year average) obtained from the International Monetary Fund’s *International Financial Statistics* database (IFS).

#### Rule for the tax burden in countries with an ad valorem tax:

For all countries (except China) where an ad valorem tax applies, and for which the tax base is stated as the CIF or wholesale value, we assume that the CIF or wholesale value represents 20% of the retail value inclusive of taxes (similar to the WHO’s methodology). As a result, the tax burden of the excise tax is:

$B = 20\% * \text{tax rate}$ , where tax rate is the statutory ad valorem tax.

For countries in which the tax base for the ad valorem tax is the retail price inclusive of all taxes, the tax burden is the statutory tax rate (stated by the government).

In a few countries, the tax base for the ad valorem tax is defined by the government. This includes **Bahrain**, **Saudi Arabia**, and the **UAE**, as the tax base is the “pre-tax price”, defined as 50% of the retail value before all taxes. As a result, the tax burden of the excise tax is:

$B = 50\% * (v_i / (1 + v_i))$ , where  $v_i$  is the statutory VAT rate (inclusive of the VAT).

The total tax share includes all excise taxes, all retail taxes (e.g., VAT, general sales tax), and other duties (e.g., customs or import duties, surcharges).

Countries with an exception:

- Canada:** The tax announced in the 2022 budget is a complex tiered specific excise system that is dependent on the volume of e-liquid. For comparability with other countries, we assume that a typical e-cigarette unit contains at least 20 mL of e-liquid. The resulting tax is CAD 5 for the first 10 mL of e-liquid, plus CAD 1 for each mL following the first 10 mL. Thus, the tax per mL is a rate of CAD 6/20, or CAD 0.3 per mL.
- China:** Two taxes apply to 2 different tax bases representing different stages of production. One tax base is the “manufacturer price”, and the other base is the “wholesale value”. Though for other countries we assume that the wholesale value represents 20% of the retail price, for China, the wholesale value includes a large production margin defined by the government as the “manufacturer allocation price”. We calculated the manufacturer allocation price prior to the introduction of the new tax in October 2022. The production margin represented is about 50% of the ex-factory or manufacturer value. The breakdown of tax and prices is shown in Table 1 of the Technical Note. The first 3 columns represent the situation prior to the introduction of the excise tax (October 2022), and the last 3 columns represent the situation that applies under the new tax system (assuming full pass-through of taxes to prices).
- Ecuador:** The tax base is defined as "150% of the manufacturer’s selling price net the VAT and the excise itself (another charge), plus a minimum 30% trade margin”. In the case of imports, the ex-customs price replaces the net ex-factory price. Since in Ecuador, the VAT rate is 12% and the excise is 150%, we define the base (B) as about 27.5% of the retail price. That is:

$$B = \frac{1}{(1+150\%)*(1+30\%)*(1+12\%)}$$

- Ghana:** We searched online stores for the cheapest brand of e-liquid sold in March 2023. Prices are generally based on the number of puffs. We use an equivalency ratio of 10mL = 3,000 puffs to calculate the specific tax per mL of e-liquids. Given that Ghana uses a mixed tax system with a specific tax based on volume (GHS cents/mL) and an ad valorem tax based on the ex-factory price, the total excise tax amount per container of 10 mL is:

$$Tax = GHS * 30 + GHS * 20\% * P,$$

Where *P* is the price per 3000 puffs of e-liquid (1 container).  
The resulting tax burden is:

$$Tax\ burden = \frac{Tax}{P} = \frac{GHS * 30}{P} + GHS * 20\%$$

Technical Note Table 1: Calculation of the tax in China

	PRE-REFORM (OCT. 2022)			POST-REFORM (ASSUMED)		
	Value in RMB	Statutory rates (%)	Share in price (%)	Value in RMB	Statutory rates (%)	Share in price (%)
Price (retail)	35			54.59		
VAT	4.03	13.0%	11.5%	5.98	13.0%	11.0%
Retail price	30.97			46.03		
Retainer (retail)	0		0.0%	-		0.0%
E(Wa)			0.0%	4.56	11%	8.4%
E(Ma)			0.0%	10.98	36%	20.1%
E			0.0%	15.54		28.46%
U	0.48	12%	1.4%	2.58	12%	4.7%
Total tax	4.51		12.9%	24.10		44.15%
Wholesale price	30.49		87.1%	41.47		76.0%
Wholesale retainer	-		0.0%	-		0.0%
Manufacturer price	30.49		87.1%	30.49		55.8%
Manufacturer retainer	10.16		29.0%	10.16		18.6%
Ex-factory	20.33		58.1%	20.33		37.2%

- NOTES:**  
The pre-tax price is calculated from an average of several brands of economy e-cigarettes sold in Oct. 2022, at about RMB 35/cartridge. The calculation of the new price and tax burden is performed in the “post-reform” period, assuming that the new tax is fully passed on to price.
- U= Urban Maintenance and Education Tax
  - Wa= Wholesale value
  - Ma= Manufacturer price (Manufacture allocation price)
  - E= Total excise tax, sum of the wholesale and manufacturer taxes E(Wa) and E(Ma)
  - There is no retainer (retail margin) at the retail of wholesale stages of production. Instead, we account for all production margins to be represented in the manufacturer allocation price.
  - U= Urban Maintenance and Education Tax

APPENDIX: Countries with e-cigarettes taxes: tax rates and designs, as of 2023

Country/ Territory	Effective date	Tax system	Tax rate and unit in 2023	Details	Base	Explicit excise tax on vaping devices (●)	Tax applied to all e-liquids (●)
Albania	Jan. 1, 2019	Specific	ALL 14.00/mL	In 2018, the Parliament of Albania approved amendments to its tax law, introducing a specific excise tax on nicotine-containing e-liquid products.	Nicotine-containing e-liquids		
Armenia	Jan. 1, 2023	Specific	AMD 55.00/mL	E-liquids were introduced in the tax code in 2023 as part of the government’s 2022-2026 plan to combat the use of tobacco products. Armenia is the last of the 5 member states of the Eurasian Economic Union (EAEU) to introduce an excise tax on ENDS/ENNDS.	All e-liquids		●
Azerbaijan	Feb. 10, 2019	Specific	AZN 0.10/mL  AZN 0.25/unit for disposable systems	The Cabinet of Ministers approved the Tax Ministry’s proposed amendments to Article 190 of Azerbaijan’s tax legislation which introduced a new tax category for imported e-liquids. The rates for e-liquids increased from AZN 20.00/L to AZN 100.00/L and apply to all e-liquids. Disposable e-cigarettes are taxed at a rate of AZN 0.25/unit.	All e-liquids and disposable devices	●	●
Bahrain	Jul. 18, 2022	Ad valorem	100% of the pre-tax price	Following the Ministry of Finance’s announcement of its classification of e-liquids as a tobacco product, the Customs Authorities of the Kingdom of Bahrain introduced an excise tax on nicotine-containing e-liquids.	Nicotine-containing e-liquids		
Belarus	Jan. 1, 2022	Specific	BYN 0.77/mL  BYN 2.72/system	The tax code was amended in 2021 to include new categories for heated tobacco products, ENDS/ENNDS, and nicotine pouches. The amendment also includes a tax on ENDS/ENNDS devices.	All e-liquids and ENDS/ENNDS devices	●	●
Bulgaria	Jan. 1, 2022	Specific	BGN 0.18/mL	The tax code was amended to include an excise tax on ENDS/ENNDS at a rate of BGN 0.18/mL. Scheduled rate increases are as follows: BGN 0.25/mL on Jan. 1, 2024 and BGN 0.35/mL on Jan. 1, 2025.	All e-liquids		●
Canada	Oct. 1, 2022	Tiered specific	CAD 1.00/2mL (or CAD 1.00/g) for first 10mL (or first 10g); CAD 1.00/10mL (or CAD 1/10g) for amount over 10mL (or 10g)	The 2022 budget introduced a new excise duty framework that includes vaping products. The excise duty applies to vaping substances that are manufactured or imported in Canada and intended for use in a vaping device in Canada. The rate for the first 10mL of e-liquids is CAD 1.00/2 mL, or fraction thereof. The rate for amounts over the first 10mL of e-liquids is CAD 1.00/10 mL, or fraction thereof. The rate for the first 10g of vaping solids is CAD 1.00/2 g, or fraction thereof. The rate for amounts over the first 10g of vaping solids is CAD 1.00/10 g, or fraction thereof.	All e-liquids or vaping solids used in ENDS/ENNDS		●
China	Nov. 1, 2022	Tiered ad valorem	36% of production or import value; 11% of wholesale distribution value	China’s Ministry of Finance imposes a consumption tax on nicotine-containing e-cigarettes and devices as of Nov. 2022. A tax rate of 36% is placed on the production or import value of nicotine-containing e-cigarette devices and e-liquids, and an 11% tax is placed on the wholesale distribution of these products. Nicotine-free products, synthetic nicotine, and flavored e-liquids are prohibited.	Nicotine-containing e-liquids, vaping devices and accessories	●	

APPENDIX: Countries with e-cigarettes taxes: tax rates and designs, as of 2023

Country/ Territory	Effective date	Tax system	Tax rate and unit in 2023	Details	Base	Explicit excise tax on vaping devices (●)	Tax applied to all e-liquids (●)
Costa Rica	Jan. 1, 2022	Ad valorem	20% of the wholesale value	In 2022, Law No. 10066 went into effect, establishing a new excise tax for e-liquids and vaping accessories. The tax rate is set at 20% of the wholesale value.	All e-liquids, vaping devices and accessories	●	●
Croatia	Jan. 1, 2017	Specific	EUR 0.00/mL	In Dec. 2016, the Croatian Parliament amended the Law on Excise Duties to subject e-liquid products to tax. The amendment prescribes a specific duty based on 1mL of e-liquid. However, the rate of the excise duty is set at EUR 0/mL.	All e-liquids		●
Cyprus	Sep. 22, 2017	Specific	EUR 0.12/mL	In 2017, Cyprus’s House of Representatives approved amendments to the excise law on tobacco products, including creation of a new category: “liquid for use in electronic cigarettes”. Both nicotine-containing and nicotine-free e-liquid are subject to tax, levied at a rate of EUR 0.12/mL.	All e-liquids		●
Denmark	Jul. 1, 2022	Tiered specific	DKK 1.50/mL for nicotine below 12 mg/mL; DKK 2.50/mL if nicotine concentration exceeds 12 mg/mL	Under the Danish Medicines Act, e-cigarettes may be regulated as medicinal products if marketed for the treatment of diseases (e.g., nicotine dependence, cessation). E-cigarettes not considered medicines are regulated under the law as e-cigarettes, which permits the sale of e-liquids with a nicotine concentration of up to 20 mg/mL. E-liquids with nicotine concentrations of up to 12 mg/mL are taxed at DKK 1.50/mL; those with nicotine concentrations exceeding 12 mg/mL are taxed at DKK 2.50/mL.	Nicotine-containing e-liquids		
Ecuador	Jan. 1, 2020	Ad valorem	150% of manufacturer’s selling price net the VAT and excise tax itself, plus a minimum 30% trade margin.  In the case of imports, the ex-customs price replaces the net ex-factory price.	Ecuador created a new excise tax category for e-cigarettes and HTPs defined as “tobacco products, tobacco substitutes or substitutes in any form, including tobacco from heated tobacco consumables, and liquid containing nicotine to be administered through nicotine delivery systems”. According to Article 76 of the revised Internal Tax Code, the tax is based on 150% of the manufacturer’s selling price (the same rate for other tobacco products). According to the tax code, the tax is based on the manufacturer’s sales price net the VAT and excise tax itself, plus a minimum 30% trade margin. In the case of imports, the ex-customs price replaces the net ex-factory price.	Nicotine-containing e-liquids, vaping devices and accessories		
Egypt	Feb. 25, 2020	Mixed	EGP 2.00/mL plus 10% of the RSP of e-liquids	An excise tax on ENDS/ENNDS was adopted as part of a comprehensive reform for tobacco product taxation (Law No. 13/2020). The legislation defines e-liquid as “any liquid that can be consumed through electronic cigarettes, whether containing, or not, nicotine”.	All e-liquids		●

APPENDIX: Countries with e-cigarettes taxes: tax rates and designs, as of 2023

Country/ Territory	Effective date	Tax system	Tax rate and unit in 2023	Details	Base	Explicit excise tax on vaping devices (●)	Tax applied to all e-liquids (●)
Estonia	Jan. 1, 2018	Specific	EUR 0.20/mL	In 2017, Estonia’s Parliament approved amendments to the “Alcohol, Tobacco, Fuel and Electricity Excise Duty Act and the Tobacco Act”. The amendments create a new category of products, “alternative tobacco products”, that are subject to the tobacco excise tax. Included within this new category is “tobacco liquid” and includes both flavored and unflavored and nicotine-free and nicotine-containing e-liquid that is consumed in a device designed for that purpose. The excise tax went into effect Jan. 1, 2018, at an initial rate of EUR 0.20/mL. However, Estonia’s parliament voted to suspend the excise tax between Apr. 1, 2021, and Dec. 31, 2022, to "reduce cross-border and illicit trade". Note that since 2019, flavored e-liquids are prohibited.	All e-liquids		●
Finland	Jan. 1, 2017	Specific	EUR 0.30/mL	Finland’s Tobacco Excise Tax Act was modified to define e-liquid used in e-cigarettes as a tobacco product. According to the amended act, the term “liquid used in electronic cigarettes” refers to nicotine-containing and nicotine-free e-liquid.	All e-liquids		●
Georgia	2018; Apr. 18, 2023	Specific	GEL 1.00/mL	In April 2023, the tax rate was raised from GEL 0.20/mL to GEL 1.00/mL, increasing the excise tax burden to 65%.	All e-liquids	Unclear	●
Germany	Jul. 1, 2022	Specific	EUR 0.16/mL	In 2021, the Tobacco Tax Modernization Act was adopted by the Bundestag. ENDS/ENNDS are defined as “tobacco product substitutes” and the tax rate for nicotine-free and nicotine-containing e-liquids is EUR 0.16/mL. The amount is set increase to EUR 0.20/mL in Jan. 1, 2024, EUR 0.26/mL in Jan. 1, 2025, and EUR 0.32/mL in Jan. 1, 2026.	All e-liquids		●
Ghana	Mar. 31, 2023	Mixed	GHS 0.05/mL plus 50% of the CIF value  For ENDS/ENNDS devices: 50% of the CIF value	In 2023, Ghana amended the Excise Duty Act of 2014 to include ENDS/ENNDS products. Effective Mar. 31, 2023, the mixed excise tax system applies to all e-liquids at a rate of GHS 0.05/mL plus 50% of the CIF value. An excise tax for ENDS/ENNDS devices also applies at a rate of 50% of the CIF.	All e-liquids and ENDS/ ENNDS devices	●	●
Greece	Jan. 1. 2017	Specific	EUR 0.10/mL	Law No. 4389, approved in May 2016, amended Greece’s National Customs Code, and introduced an excise tax on e-liquids contained in e-cigarettes (including special refill containers or in single-use cartridges). “Electronic cigarette” is defined as a product that can be used for the consumption of vapor with a mouthpiece or other element of the product, including the cartridge and the device without cartridge. The rate of the excise tax is EUR 0.10/mL.	All e-liquids		●

APPENDIX: Countries with e-cigarettes taxes: tax rates and designs, as of 2023

Country/ Territory	Effective date	Tax system	Tax rate and unit in 2023	Details	Base	Explicit excise tax on vaping devices (●)	Tax applied to all e-liquids (●)
Hungary	Jan. 1, 2017; Jan. 1, 2020	Specific	HUF 35.00/mL	The 2016 Excise Act includes e-liquid as a tobacco product subject to excise tax. E-liquid is defined as “fluid loaded to the electronic cigarette during the manufacturing process, and liquids for electronic cigarette refills”. The excise tax applies to both nicotine-free and nicotine-containing e-liquids.	All e-liquids		●
Indonesia	Jul. 1, 2018; Jul. 1, 2021	Tiered specific	IDR 532.00/mL (e-liquid for open systems),  IDR 6,392.00/mL (closed systems);  MRSP: IDR 938.00/mL (open systems), IDR 37,365.00/mL (closed systems)	The Republic of Indonesia introduced an excise tax on nicotine-containing e-liquid used in e-cigarettes, initially employing an ad valorem system and taxing e-liquids at 57% of the RSP. The law was modified in 2021, and the excise system currently employed is tiered specific, specifies minimum retail sale price (MRSP), and includes different rates for open and closed systems. The tax rates and MRSP were updated in Dec. 2022 for 2023 and 2024. In 2024, the rates are prescribed as IDR 632.00/mL (e-liquid for open systems), IDR 6,776.00/mL (closed systems), and a MRSP of IDR 1,121.00/mL and IDR 39,607.00/mL for open and closed systems, respectively.	Nicotine-containing e-liquids		
Israel	Jun 15. 2022; Mar. 2023	Mixed	145% of the common wholesale price plus ILS 4.64/mL, up to a maximum of ILS 8.90/mL	Israel introduced an excise tax for e-liquids, e-cartridges, and disposable devices in 2022 (Order 22). For e-liquids and cartridges, a tax rate of 182% of the common wholesale price plus ILS 5.51/mL, and at least ILS 10.56/mL applied; for disposable e-cigarettes, a tax rate of 270% of the common wholesale price plus ILS 8.16/mL, and at least ILS 15.64/mL applied. However, the original tax rates set in 2022 were lowered by a decree in Mar. 2023. The updated tax system sets rates at 145% of the common wholesale price plus ILS 4.64/mL, up to a maximum of ILS 8.90/mL. Rates are the same for e-liquids, cartridges, and disposable devices.	All e-liquids		●



APPENDIX: Countries with e-cigarettes taxes: tax rates and designs, as of 2023

Country/ Territory	Effective date	Tax system	Tax rate and unit in 2023	Details	Base	Explicit excise tax on vaping devices (●)	Tax applied to all e-liquids (●)
Italy	Jan. 2014; Jan. 1, 2019; Jan. 1, 2021	Tiered specific	EUR 0.132/mL of nicotine-containing e-liquid, and EUR 0.088/mL of nicotine-free e-liquid	Italy introduced its current tax on e-ciga- rettes in Dec. 2014. The tax rate is based on a procedure defined by the Director of Cus- toms and Monopolies and set at 50% of the excise on an equivalent amount of cigarettes based on the weighted average price (WAP) of 1000 cigarettes. The equivalence is deter- mined based on average time of consumption under the same puff conditions according to specific technical procedures. Results of labo- ratory testing concluded that a mL of e-liquid requires 5.63x the average time to consume (ATC) a conventional cigarette. The tests were conducted in 2015, when the WAP rate was EUR 132.66/1000 cigarettes. The equiva- lent tax for e-liquids is therefore 50% of that amount, or EUR 66.33. To obtain the equiva- lency per mL, divide EUR 66.33 by 1000 and then multiply by 5.63. Therefore, in Jan 2015, the equivalent tax was EUR 0.373/mL. The WAP increased in Jan. 2016, thus the excise rate for e-liquids was raised to EUR 0.385/mL, and to EUR 0.398/mL in 2018. At the end of 2018, the law was amended to reduce the tax on e-liquids and differentiate between nico- tine-containing and nicotine free e-liquids. The tax rate was reduced from 50% of the excise on an equivalent amount of cigarettes to 10% for nicotine-containing e-liq- uids, and 5% to nicotine-free e-liquids. The law was changed again in 2021 to increase the tax, and nicotine-containing and nicotine-free e-liq- uids are taxed at 15% and 10%, re- spectively, of the rate of cigarettes. The rate is set to in- crease by 5 percentage points until 2023 (25% and 20% in 2023). As of Jan. 1, 2023, ENDS/ ENNDS are subject to the following taxes: EUR 0.132/mL for nicotine-containing products and EUR 0.088/mL for nicotine-free products. This is applicable to flavor concentrate and neutral bases as long as “liquid substances” are marketed as items to be used with ENDS/ ENNDS. VAT is applied at a rate of 22%.	All e-liquids		●
Jordan	May 2, 2019	Ad valorem	200% of CIF value	In 2019, the Kingdom of Jordan adopted an excise tax on ENDS devices and nicotine-con- taining e-liquids. The tax on both e-liquids and devices is 200% of the CIF value.	Nicotine-containing e-liquids and ENDS devices	●	
Kazakh- stan	Jan. 1, 2018; Jan. 1, 2023	Specific	KZT 53.00/mL	The Tax Code of the Republic of Kazakhstan was amended in Dec. 2015 to include HTPs and nicotine-containing e-liquids as goods subject to excise tax (Articles 279 & 280). For “liquid in cartridges, tanks, or other contain- ers for use in electronic cigarettes”, a rate of KZT 0.00/mL was applied. In 2022, the president signed a bill to amend the code to increase the tax on nicotine-containing e- liquid at a rate of KZT 53.00/mL, effective Jan. 1, 2023, and KZT 55.00/mL Jan. 1, 2024.	Nicotine-containing e-liquids		

APPENDIX: Countries with e-cigarettes taxes: tax rates and designs, as of 2023

Country/ Territory	Effective date	Tax system	Tax rate and unit in 2023	Details	Base	Explicit excise tax on vaping devices (●)	Tax applied to all e-liquids (●)
Kenya	Jan. 1, 2016	Mixed	KES 70.00/mL of e-liquid and 50% of the RSP of ENDS/ ENNDS devices	Kenya approved a tax in 2015 that applied to devices and e-liquid refill cartridges, but not on e-liquids. However, the Finance Act of 2022 eliminated the previous system and now em- ploys a mixed system with a specific excise tax on e-liquids for ENDS/ENNDS and an ad valor- em tax on devices.	All e-liquids and ENDS/ ENNDS devices	●	●
Kuwait	TBD	Ad valorem	TBD	Currently, Kuwait levies an import duty on to- bacco products at a rate of 100% of the CIF value. The import tax was originally planned to be imposed on ENDS (effective Jan. 2023), but was postponed. A new excise tax on to- bacco and other products is under consider- ation by the government.	Nicotine-containing e-liquids and ENDS devices	●	
Kyrgyzstan	Jul. 5, 2019; Jan. 4, 2022	Specific	KGS 3.00/L of e- liquid; KGS 100.00/unit (device containing e-liquid)	In the tax code, nicotine-containing e-liquid is defined as "liquids containing nicotine for use in electronic cigarettes (in cartridges, tanks and other containers) that forms an aerosol when heated and is intended for inhaling". The amendment went into effect in Jul. 2019, however, the rate remained at KGS 0.00/mL un-til Dec. 31, 2019. In Jan. 2020, a rate of KGS 1.00/mL is applied, KGS 1.25/1 mL in 2021, and KGS 1.50/1 mL in 2022. The law was amend-ed again in Dec. 2021 to include taxation for devices and increase the rate on tobacco and nicotine products. In Nov. 2023, the Cabinet of Ministers set minimum retail prices for e-ciga-rette products. The minimum price is KGS 250.00 for nicotine-containing disposables from Jan. 1, 2023, rising to KGS 300.00 (\$3.60) on Jan. 1, 2024. A minimum price of KGS 1.300 is set for e-cigarette devices from Jan. 1, 2023, rising to KGS 1.400 on Jan. 1, 2024.	Nicotine-containing e-liquids and devices	●	
Latvia	Jul. 1, 2016; Jan. 1, 2021	Specific	EUR 0.20/mL	Latvia amended its Law on Excise to include “liquid used in electronic cigarettes” to its list of goods subject to excise tax. The excise tax was originally calculated using two bases— the volume of liquid (mL) and the weight of nicotine (mg). The tax was modified in Jan. 2021, and eliminated the weight-based tax, and increased the rate per volume of e-liq- uid. Ingredients used in preparation of the e-liquid (ex: propylene glycol, flavorings, glycerol of vegetable origin, nicotine extracts, etc.) are also subject to tax.	All e-liquids		●
Lithuania	Mar. 1, 2019	Specific	EUR 0.19/mL	In Jun. 2018, Lithuania’s Parliament approved amendments to the excise law subjecting va- por products to taxation. The tax on e-liquid used in e-cigarettes was introduced at a rate of EUR 0.12/mL. This applies to the e-liquid product sold separately, as well as the e-liquid sold as part of an e-cigarette device. The tax is set to increase every year until 2024.	All e-liquids		●

APPENDIX: Countries with e-cigarettes taxes: tax rates and designs, as of 2023

Country/ Territory	Effective date	Tax system	Tax rate and unit in 2023	Details	Base	Explicit excise tax on vaping devices (●)	Tax applied to all e-liquids (●)
Malaysia <sup>a</sup>	Jan. 1, 2021; Mar. 31, 2023	Specific	MYR 0.40/mL	Previously, only nicotine-free e-liquids were permitted for sale in Malaysia and a mixed ex-cise system applied. As of Mar. 31, 2023, nic-otine-containing e-liquids are permitted, and are subject to a specific excise duty at a rate of MYR 0.40/mL.	All e-liquids		●
Maldives	2021	Ad valorem (import duty)	200% of CIF value	ENDS/ENNDS are regulated as tobacco prod-ucts under the Tobacco Control Act (Law 15/2010). The Act requires a 200% tax at im-portation on the CIF value for tobacco prod-ucts and articles used in the consumption of tobacco products. A 6% GST is also applied at sale. However, devices used for vaping are taxed as electronic devices rather than as ar-ticles used for the consumption of tobacco products.	All e-liquids		●
Montenegro	Jul. 31, 2017	Specific	EUR 0.07/mL	The Republic of Montenegro amended its ex-cise tax to include e-liquids. Article 49b of the revised excise law defines e-liquids as “prod-ucts intended for inhaling vapor without the burning process, and which may be deemed a substitute for tobacco products, and which contain liquids for use in electronic cigarettes, regardless of whether containing nicotine or not”.	All e-liquids		●
Morocco	2021; 2022	Tiered specific	MAD 10.00/ mL of nicotine- containing e-liquid; MAD 5.00/mL of nicotine-free e-liquid	The Finance Bill, set to align e-cigarette tax rates with international standards, set in place an internal consumption tax on e-cigarettes at a rate of MAD 1,500/1000 g. In Oct. 2021, the Finance bill implemented tiered specific taxation measures for e-cigarettes. Budget Act 2022 (Loi de Finance 76-21) set an excise duty (Taxes intérieures de consommation) on e-liq-uids as follows: MAD 5/10 mL for nicotine-free e-liquid and MAD 10/10 mL for nicotine-con-taining e-liquid; a customs duty of 40% of the RSP.	All e-liquids		●
North Macedonia	Jul. 15, 2019	Specific	MKD 3.00/mL	A new excise law was published in the Official Gazette of the Republic of Macedonia (no. 108/2019), introducing excise taxes for HTPs and all e-liquids. The law contains provisions for automaticincreases to the tax rate of MKD 0.20/mL on Jul. 1 of each year, from 2020 to 2023.	All e-liquids		●
Norway	Jul. 2021	Tiered specific	NOK 4.92/mL or NOK 4.65/g	A tax covering e-liquids was adopted and ef-fective in 2021. Effective Jul. 1, 2023, the rate is expected to increase from NOK 4.50/mL to NOK 4.92/mL and NOK 4.52/g to NOK 4.65/g.	Nicotine-containing e-liquids		
Pakistan	2020	Specific	PKR 10.00/mL	Beginning in 2020, all e-liquids are taxed un-der the Federal Excise Act at a rate of PKR 10.00/mL, regardless of nicotine content. Customs tariffs may also be imposed.	All e-liquids		●

APPENDIX: Countries with e-cigarettes taxes: tax rates and designs, as of 2023

Country/ Territory	Effective date	Tax system	Tax rate and unit in 2023	Details	Base	Explicit excise tax on vaping devices (●)	Tax applied to all e-liquids (●)
Paraguay	2021; Feb. 2023	Ad valorem	22% of import or wholesale value	Law No. 6380/19 established a tax on e-ciga-rette e-liquid pursuant to Article 115. Resolu-tion 153/2021 established a nicotine concen-tration limit of 20 mg/mL and estab- lished a tax on e-liquids applicable to manufacturers and importers. According to Law 6380/2019, the rate of this tax is a min- imum of 18% and a maximum of 24%. Signed in Feb. 2023, Decree 8872 increased the tax to 22% of the wholesale value.	All e-liquids		●
Philippines	Jan. 1, 2021	Tiered specific	PHP 52.00/mL of salt-based nicotine or PHP 60.00/ mL of free-base nicotine	Philippine Republic Act 11467 sets tax in-crements for tobacco products. E-liquids are taxed at differential rates based on nicotine composition. For both salt-base and free-base nicotine e-liquid compositions, a PHP 5/mL tax increase will occur until 2023. From 2024 onward, a 5% increase will occur.	Nicotine-containing e-liquids		
Poland	2018; Jun. 2020	Specific	PLN 0.55/mL	In 2017, Polish Parliament approved Amend-ments to the Act on Excise Duty which intro-duced a new tax category for products, includ-ing e-liquids and HTPs. E-liquids are defined as a “separate liquid for electronic cigarettes”. Initially, the excise rates for e-liquids were set at PLN 0/mL until Dec. 31, 2018. On Sep. 30, 2020, the rate was changed to PLN 0.55/mL.	All e-liquids		●
Portugal	2014; 2017; Jan. 1, 2023	Specific	EUR 0.336/mL	In 2014, Lei n. º 82-B/2014 added nicotine-containing e-liquid, used to fill or refill e-cig-arettes, to the list of products subject to the Special Consumption Tax. The rate of ex-cise was initially set at EUR 0.60/mL for nic-otine-containing e-liquid. However, Portugal’s 2017 budget cut the tax on nicotine-contain-ing e-liquid by 50%, to EUR 0.323/ mL. As of Jan. 1, 2023, the tax on nicotine-containing e-liquid is EUR 0.336/mL. Additional details concerning product definitions and the details of the tax applied to e-cigarettes in Portugal can be found in Part II, Chapter III, Tobacco Tax of the Excise Tax Code (Código dos Impos-tos Especiais de Consumo – CIEC). The Portu-guese tax is one of the highest in Europe.	Nicotine-containing e-liquids		
Romania	Jan. 1, 2016; Jan. 1, 2023	Specific	RON .72/mL	Law no. 227/2015 of the Fiscal Code intro-duced an excise tax on nicotine-containing e-liquids for inhalation by means of an elec-tronic device. Following the amendment to the Excise Duty Act that was adopted in 2022, as of Jan. 1, 2023, the excise duty on e-liquids is RON 0.72/ mL. The tax will progressively rise to RON 0.81/mL in 2024, RON 0.91/mL in 2025, and RON 1.03/mL in 2026.	Nicotine-containing e-liquids		

APPENDIX: Countries with e-cigarettes taxes: tax rates and designs, as of 2023

Country/ Territory	Effective date	Tax system	Tax rate and unit in 2023	Details	Base	Explicit excise tax on vaping devices (●)	Tax applied to all e-liquids (●)
Russia	Jan. 1, 2017; Mar. 1, 2023	Specific	RUB 20.00/mL	Amendments to the tax code to include nicotine-containing e-liquids and ENDS devices in the list of excisable products were approved in Nov. 2016. The tax is applicable to nicotine-containing e-liquids with nicotine concentrations of at least 0.1 mg/mL (medical devices registered according to legislation are excluded from the excise). The law was amended in Jan. 2023, and increased the excise from RUB 18/mL to RUB 20/mL. In 2024, the excise will rise again to RUB 21/mL. As part of the amendment, the explicit tax on ENDS devices was eliminated.	Nicotine-containing e-liquids		
Saudi Arabia	May 2019	Ad valorem	100% of the pre-tax price	Since 2019, Saudi Arabia has imposed an excise tax on both ENDS and HTPs and created new excise tax categories for these products. Application of the excise tax is carried out in accordance with GCC Uni-lateral Agreement for Excise Tax, though not every Member State of the GCC implements such excise taxes. A tax of 100% is levied on the pre-tax price of e-liquids and devices. This is the same rate applied to cigarettes and smoking tobacco, which implies an effective tax rate of approximately 50%. The pre-tax price is defined as 50% of the RSV.	Nicotine-containing e-liquids and ENDS devices	●	
Serbia	Jan. 1, 2015	Specific	RSD 8.00/mL	In 2015, amendments to the Excise Law added “liquids for filling electronic cigarettes” to the list of products subject to excise tax. The rate of the excise was originally set at RSD 4.00/mL and subject to indexation for inflation. Future tax rate adjustments are expected every Jan. The tax rate is expected to increase to RSD 9.00/mL in 2024 and RSD 10.00/mL in 2025.	All e-liquids		●
Slovenia	Jul. 1, 2016	Tiered Specific	EUR 0.21/mL for nicotine-containing e-liquids; EUR 0.10/mL for nicotine-free e-liquids	The Republic of Slovenia amended its Law on Excise Duties to include a new class of tobacco products subject to tax and includes “products intended for inhalation without combustion” among tobacco products that are subject excise.	All e-liquids		●
South Africa	Jan. 1, 2023	Specific	ZAR 2.90/mL	In Dec. 2022, the National Council or Provinces approved the Taxation Laws Amendment Bill, which introduced a tax on e-cigarettes at a rate of ZAR 2.9/mL for nicotine-containing and nicotine-free e-liquids. The tax will take effect Jun. 2023.	All e-liquids		●
South Korea	Jan. 1, 2017	Specific	KPW 1,799.00/mL of e-liquid and KPW 24.4.00/20 units of cartridge/pod	In 2011, the Republic of South Korea began imposing a national tax on e-cigarettes, making it the first country to do so. However, no special tax category for these products was introduced until amendments to the Local Tax Act were approved in Dec. 2016. The Local Tax Act introduced a new tax category: inhaled tobacco products using electronic devices. South Korea now has 4 separate taxes for e-cigarettes and other tobacco products, each earmarked to a specific health-related purpose (as part of the health promotion law). There is also a waste tax on disposable cartridges and pods (per unit).	All e-liquids and disposable cartridges and pods	●	●

APPENDIX: Countries with e-cigarettes taxes: tax rates and designs, as of 2023

Country/ Territory	Effective date	Tax system	Tax rate and unit in 2023	Details	Base	Explicit excise tax on vaping devices (●)	Tax applied to all e-liquids (●)
Sweden	2011	Tiered specific	SEK 2,000.00/L (for e-liquids with less than 15 mg of nicotine/mL) or SEK 4000.00/L (for e-liquids with at least 15 mg, but no more than 20 mg of nicotine/mL)	E-liquid is taxed SEK 2,000.00/L for nicotine-containing e-liquid. Highly concentrated e-liquid is taxed at a rate of 4,000.00 SEK/L. Highly concentrated e-liquid is defined as e-liquid with a nicotine concentration of at least 15mg/mL but not exceeding 20 mg/mL.	Nicotine-containing e-liquids		
Togo	Jan. 14, 2010	Ad valorem	45% of the wholesale value	The tobacco control law classifies nicotine-containing and nicotine-free e-liquid as derivative tobacco products. E-liquids are subject to duties/fees and are not eligible for tax exemptions. E-liquids are taxed at a ceiling of 45%.	All e-liquids		●
Ukraine	Jan. 1, 2021	Specific	UAH 10,000.00/L	In Jan. 2021, new tobacco tax measures entered into force under Law 466-IX “On Amending the Tax Code of Ukraine on Improving Tax Administration, Eliminating Technical and Logical Inconsistencies in Tax Law”. As of Jan. 2023, the excise rate applicable to e-liquids is UAH 10,000.00/L. The rate is valid during a state of war and/or state of emergency.	All e-liquids		●
UAE	Jan. 1, 2020	Ad valorem	100% of the pre-tax price	In Aug. 2019, the Federal Tax Authority of the UAE issued Cabinet Decision No. 52, introducing excise taxes on ENDS/ENNDS devices and e-liquid. According to Article 4 of the Cabinet Decision, the excise tax for e-liquids applies whether or not they contain nicotine. The excise tax is applied to the pre-tax price of e-liquids and devices, and the pre-tax value is defined as 50% of the RSV. The same approach and rate applies to other goods such as conventional tobacco products and carbonated drinks.	All e-liquids and ENDS/ ENNDS devices	●	●
Uzbekistan	Jun. 1, 2020	Specific	UZS 605.00/mL	In 2020, Uzbekistan adopted a resolution introducing an excise tax on imported nicotine-containing e-liquid (No. PP-4665). The rate was recently increased to UZS 605.00/mL	All e-liquids		●

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