TAXING E-CIGARETTE PRODUCTS

First emerging nearly two decades ago, the e-cigarette market has continued to expand in recent years, with newer devices such as disposable e-cigarettes joining the array of vape pens, vaporizers, e-pens, e-pipes, e-hookahs, and e-cigars already available. Sound tax policy is an important tool for regulating such products, especially because of their appeal to youth.

Although the federal government has the authority to regulate them, there is still no comprehensive federal oversight or taxation of e-cigarettes. State and local governments have attempted to fill this void by adopting laws to regulate e-cigarette use, sales, and packaging, such as including e-cigarettes in smoke-free air laws and requiring a license to sell e-cigarette products.[1] Increasingly, Tribal, state, and some local governments are also taxing e-cigarettes.[2]

Although over thirty states tax e-cigarette products in some fashion, these taxes vary widely in their structure, scope, and amount. Some states tax e-cigarettes at the same rate as other commercial tobacco products,[3] while others create a separate tax structure for e-cigarettes.

Some states tax the e-cigarette device, including its components, while others tax only the e-liquid. This guide provides information for Tribal, state, and local governments on the rationales and strategies for different types of e-cigarette taxes. There is no one-size-fits-all approach in this complicated policy area. An attorney familiar with your jurisdiction's tax code can help ensure that any tax is appropriately tailored to meet your policy needs.

What Are E-Cigarettes?[4]

Electronic cigarettes or electronic nicotine delivery systems (e-cigarettes) include a range of devices designed to deliver nicotine or other substances to users in the form of aerosol.

Most e-cigarettes consist of four components: a cartridge or reservoir containing e-liquid, a power source (typically a battery), a heating element, and a mouthpiece used to inhale. The basic types of e-cigarette devices include tanks and mods, vape pens, rechargeable and disposable e-cigarettes, evolving products such as e-cigars and e-pipes, and pod type devices such as Juul.

Why Tax E-Cigarettes?

E-cigarette use has grown dramatically over the past two decades, particularly among youth, with 7.7% of high school students reporting current use as of 2023.[5] Today, more high school students use e-cigarettes than regular cigarettes, with the most popular brands being disposable, single-use products.[6] Additionally, youth who use e-cigarettes are more likely to start smoking cigarettes than those who do not use e-cigarettes.[7]

Most e-cigarettes contain nicotine, an addictive drug. Nicotine itself is harmful to health. In addition to acute poisoning risks, exposure to nicotine has been shown to harm both maternal and fetal health during pregnancy and negatively impacts adolescent brain development. Thus, adopting policies that decrease e-cigarette use, particularly among youth, can significantly benefit public health.

Increasing price is one of the most effective ways to reduce commercial tobacco initiation and increase quit attempts.[8] Studies have indicated that increasing the price of e-cigarettes can potentially lead to a reduction in demand or consumption of e-cigarettes.[9] Raising the price of tobacco products has the greatest impact on youth, who are particularly price sensitive.[10] Taxes can also generate revenue for commercial tobacco control and public health work.

Because most e-cigarettes contain nicotine, excluding them from tobacco taxes creates a de facto discount and may encourage initiation and increased use. Although some argue that e-cigarettes are effective cessation products, the U.S. Food and Drug Administration has not approved any e-cigarettes for use in cessation, and it is illegal for manufacturers to claim their tobacco products are approved cessation devices.

E-cigarette sales in the U.S. increased by nearly 300 percent between 2016 and 2019,[11] and continued to increase by 46.6 percent between 2020 and 2022.[12] E-cigarette products are also changing, with an increasing array of disposable e-cigarettes — such as Elf Bar, Puff Bar, and Esco Bar — which are self-contained products that come in a variety of kid-friendly flavors (for example, Lychee Ice and O.M.G., or Orange, Mango, Guava). As a possible result of the FDA's decision to regulate pod-based e-cigarettes, such as Juul, more disposable products have entered the market. As of 2022, disposables accounted for over half of all U.S. e-cigarette product sales.[13] Over the past few years, some companies have also begun selling e-cigarettes that contain synthetic nicotine, nicotine analogues, and other substances not derived from tobacco.[14]

Who Can Tax E-Cigarettes?

The federal government does not currently impose a tax on e-cigarette products. Although several e-cigarette tax bills have been introduced in Congress, none has yet passed.[15] Without authority from Congress, the U.S. Food and Drug Administration is not able to tax e-cigarettes through regulation. As a result, e-cigarette taxes must be imposed at the Tribal or state level or, if allowed by state law, by local governments.

As of December of 2023, 32 states, three territories, and the District of Columbia tax e-cigarettes.[16] For more information on state e-cigarette regulation, including e-cigarette tax laws, see our *U.S. E-Cigarette Regulations — 50 State Review*.[17] Several local governments impose their own excise taxes on e-cigarettes.[18] For example: Montgomery County, MD, imposes a tax of 30 percent of the wholesale price; Anchorage, AK, imposes a tax of 55 percent of the wholesale price; and Chicago, IL, imposes a tax of both $1.50 per product unit and $1.20 per fluid ml of consumable product.[19]

Policy Options

Tribal, state, and local governments have a wide range of options in taxing e-cigarette products. Governments should consider their goals and align their tax schemes accordingly. Because the e-cigarette market is likely to continue to evolve and change quickly, governments should re-examine their tax structure periodically to ensure that it is broad enough to cover new product innovations and that it is appropriately priced.

- **What Products to Tax:** E-cigarettes are comprised of various parts (see **What Are E-Cigarettes?**). Some e-cigarette devices are refillable, which is sometimes called an "open" tank system or device because the tank can be opened to refill the e-liquid. Other e-cigarettes have disposable cartridges or pods, sometimes called a "closed" device, and some devices are entirely disposable. A tax structure should clearly identify which products are subject to the tax, including:
    - **E-liquid:** A key question for any e-cigarette tax is whether to tax only e-liquids that contain nicotine or all e-liquids. Among the states with e-cigarette taxes, some tax only liquids that contain nicotine while others tax any liquids used in e-cigarette products. Ideally, all e-liquids should be subject to the tax as it can be difficult to verify whether the product actually contains nicotine. Currently, there are no ingredient disclosure requirements for e-cigarettes at the federal level and tests have shown significant discrepancies between the amount of nicotine claimed to be in the product and the actual amount. In fact, some products that claim to be nicotine-free have been shown to contain nicotine.[20]

      Additionally, if a government taxes only e-liquids that contain nicotine, it will create an incentive for retailers to purchase and sell flavoring and other liquid separately from highly concentrated nicotine solution, resulting in tax avoidance and other potentially harmful public health effects associated with mixing of the products at home. Besides nicotine, e-cigarettes can contain and produce harmful and potentially harmful ingredients, including formaldehyde; ultrafine particles that can be inhaled deep into the lungs; flavorants such as diacetyl, a chemical linked to serious lung disease; volatile organic compounds; and heavy metals, such as nickel, tin, and lead.[21]

      Since testing all products at the retail level is simply not feasible, jurisdictions that decide to tax only products containing nicotine should presume that all products contain nicotine unless proven otherwise. Similarly, jurisdictions that only tax tobacco-derived nicotine should presume that all nicotine is tobacco-derived unless proven otherwise.

- **Devices:** An e-cigarette tax law should clearly define which products are to be taxed. Most state tax laws that are based on the price of e-cigarettes (known as an "ad valorem" tax) apply to the e-cigarette device, cartridge, and e-liquid.[22] In contrast, many state e-cigarette tax laws that are calculated based on the volume of e-liquid (e.g., 40 cents or more per milliliter) tax only the liquid and not the e-cigarette device.

- **Component Parts and Accessories:** Some state e-cigarette tax laws apply to component parts such as batteries and coils, while some do not.[23]

The best practice for overall public health is to tax all e-liquids and parts of the device necessary for its operation. This approach would tax all essential components but not other accessories, such as carrying cases or lanyards. The key advantage of this approach is that it would include the refillable devices sold at convenience stores as well as the mix-and-match component parts that are often sold separately at vape shops. One issue to consider, however, is how to tax products that might have a universal application, such as certain batteries or charging cords. One option is to exempt from the tax products such as batteries, when sold separately, but to include them in the tax when the products are sold as a kit. This minimizes the complexity of allowing the distributor or retailer to apportion the value to different parts of the product in an attempt to ease the tax burden.

- **What Type of Tax to Impose:** Existing e-cigarette tax laws impose different types of taxes on these products, including:

    - A **specific** tax, which is imposed on the unit, e.g., 40 cents per milliliter of e-liquid in a closed (disposable) system;[24]

    - An **ad valorem** tax, which is imposed based on the value of the product, e.g., 92 percent of the wholesale price;[25] and/or

    - A **combination** of strategies, e.g., 10 cents per ml of e-liquid for refilling an open system or 10 percent retail price for unrefillable containers of e-liquids.[26]

Conventional tobacco products, such as cigarettes and cigars, are often subject to a specific tax, which is imposed on a particular unit, such as a pack of cigarettes. Specific taxes work well for a product that is standardized, like cigarettes, where a pack of cigarettes would have the same tax regardless of the brand. However, a specific tax may not be well suited to e-cigarette products, which are highly diverse. For example, a tax based on the volume of e-liquid could result in a higher tax on e-liquids that contain less nicotine (frequently used in refillable devices) compared with a relatively low tax on e-liquids with a high nicotine content, such as Juul, thus incentivizing the sale of liquid with higher concentrations of nicotine.[27]

States that impose a specific tax only impose the tax on the volume/amount of the e-liquid and not on the device. For instance, Ohio taxes e-liquid at a rate of 10 cents per milliliter.[28] Some states, including Delaware, North Carolina, and Ohio, only tax liquid that contains nicotine, while other states, such as Kansas and Washington, tax e-liquid whether or not it contains nicotine.[29]

In contrast, an ad valorem tax is calculated based on a percentage of price of the e-cigarette product and often includes the device, cartridges, and e-liquid. Most states that impose an ad valorem tax calculate the tax based on the wholesale price of the product. New Jersey is one state that calculates the tax based on the retail price of the product.

A comprehensive e-cigarette tax would be in the form of an ad valorem tax (based on the value of the product), that is assessed on the final product, including all e-liquid and functional parts and accessories, at a rate that is on parity with other tobacco products. If the breadth of the tax is wide, it would decrease the incentive to sell products with high nicotine content separately. Also, by defining e-cigarettes as tobacco products and taxing them as such, the enforcement agency can include them in the existing tax structure rather than creating an entirely new system. Finally, an ad valorem tax contains an automatic inflation adjustment, since it rises as the cost of the product increases.

Some states pursue a combination of strategies. For example, Connecticut imposes a specific tax of $0.40 per milliliter of e-liquid for closed devices, such as disposable e-cigarettes and cartridges, and an ad valorem tax of 10 percent of the wholesale price on open (refillable) e-cigarette devices and bottled e-liquids. However, tiered tax structures may not be a best practice because they are more challenging to administer and may need to be frequently adjusted as diverse new products enter the market.[30] In addition, products that are marketed as disposable often can be refilled and reused, blurring the line between "closed system" and "open system" products.

- **Tax Rate:** Jurisdictions should consider their goals in taxing e-cigarette products, which typically include discouraging use and generating revenue. Some states seek to tax e-cigarettes at a rate that is equivalent to cigarettes or other tobacco products to avoid creating a low-tax incentive to adopt these products: California taxes e-cigarette products at a rate that is equivalent to cigarette taxes; Minnesota taxes e-cigarette products at the same rate as other tobacco products; and Pennsylvania taxes e-cigarettes at a different rate than cigarettes and other tobacco products.[31] Given the uncertainty regarding the health effects of these products and the likelihood that they can serve as a gateway to other tobacco products, taxing them at the same rate as other tobacco products seems to be the approach best tailored to discourage initiation.

- **Where to Collect the Tax:** The distribution chain for e-cigarettes is different from that for conventional tobacco products. For most tobacco products, the product passes intact from the manufacturer to the wholesaler/distributor and then to the retailer, who sells it to the customer. In contrast, vape shops often mix e-liquid at the retail level, manufacturing a new and different product at the point of sale. Most states with e-cigarette taxes calculate the tax based on the wholesale price. Other options that jurisdictions may consider include:

    - Impose the tax at the retail level (for example, New York and New Jersey impose a retail tax); and/or

    - Require retail stores to obtain a state tobacco tax license for a distributor if these products are mixed onsite, or are not purchased through licensed distributors or wholesalers; and/or

    - Define mix-your-own vape shops as "manufacturers," requiring the requisite state license as a way to levy the tax on the final cost of the product.

    Since every jurisdiction uses a different approach to collect the tax on tobacco products, it is important to review the current structure to determine whether an e-cigarette tax can be integrated into it or if the existing system should be updated.

- **Enforcement:** Enforcement is a critical component of any successful tobacco control policy. If e-cigarette taxes are treated the same as taxes on other tobacco products, the existing enforcement framework can be used. Otherwise, a new enforcement structure must be created. Because each tax collection structure is unique, seek input from agencies and officials who will be charged with implementing and enforcing any proposed e-cigarette tax policy.

- **Complementary Policy Options:** In addition to imposing a tax on e-cigarettes, state and local governments can consider other tobacco control policies that would complement an e-cigarette tax. For example:

  - Requiring a license to sell e-cigarettes ensures that governments have a way to track retailers and can be used as a tool for limiting retailer location and density;

  - Prohibiting the sale of flavored tobacco products reduces the number of e-cigarettes for sale and may further reduce youth use since e-cigarettes are currently sold in thousands of flavors, many designed to appeal to kids;

  - Prohibiting price discounts, such as coupons, is a way to counteract tobacco industry efforts to lower prices; and

  - Setting a minimum price on e-cigarettes is another way to increase the cost of such products. For example, San Diego County adopted a law requiring a minimum price of $10 for e-liquid containers; $20 for electronic smoking devices; and $30 for electronic smoking device starter kits.[32]

Alternatively, some jurisdictions have prohibited the sale of e-cigarette products altogether. If, however, a jurisdiction is contemplating this approach, it should consider including all combustible tobacco products in the restriction.[33] For more information on these strategies, see our *Policy Playbook for E-Cigarettes*.[34]

Policy Elements

E-cigarette tax laws should clearly identify the products to be taxed and describe how the tax will be administered and enforced. Elements of a well-crafted law include:

- **Findings and Statement of Purpose:** Findings are brief statements of facts or statistics that outline the issue, support the need for the policy, and help clarify the policy goal. Regulations involving e-cigarette taxes may contain information on the prevalence of e-cigarette use among youth and young adults, the known health or environmental risks of e-cigarette use or vaping (whether nicotine or other substances),[35] and the price of e-cigarettes relative to other tobacco products. Findings also typically explain how the policy is designed to address the identified problems. In the event of litigation, clear findings and statements of purpose provide the evidentiary basis for the policy and demonstrate the government's rationale for adopting specific restrictions.

  A local government wishing to adopt an e-cigarette tax should investigate its state's tobacco regulatory scheme to ensure that the local government is not prohibited from enacting such a law. The findings should identify the government's authority to adopt an e-cigarette tax.

- **Clear Definitions and Concise Language:** To avoid confusion about the application of the tax, the definitions should explicitly state which e-cigarette products and components are covered. The definitions also should be broad enough to anticipate and capture future product innovations when new products enter the market.[36]

- **Clear Scope of Regulation:** An e-cigarette tax law should clearly identify the amount of the tax, how it is calculated, where the tax is imposed, and whether the tax automatically increases over time.

- **Clear Enforcement Procedures:** Enforcing e-cigarette taxes can be challenging unless clear procedures are established, including penalties that are appropriate and equitable. Effective enforcement of these policies often includes coordination among different enforcement agencies. It is important to seek input at the policy development stage from those who will be in charge of enforcement. Lessons learned from collecting taxes on other tobacco products can inform how the e-cigarette tax can be structured and implemented. If the government is applying an existing tobacco tax to e-cigarette products, then an enforcement infrastructure will already exist. If a separate and distinct tax is being applied to e-cigarettes, then enforcement procedures will need to be created.

Policy Challenges

Although determining the appropriate type of e-cigarette tax is complicated, a state's authority to impose a tax is clear.[37] Governments wishing to create an e-cigarette tax should involve potential stakeholders in the process of crafting the law, including public health advocates and enforcement authorities.

Select Legislation and Policies

Below are examples of e-cigarette tax laws around the U.S. If you are considering adapting any language from these policies, take care to ensure the provision in question is practical and legal in your jurisdiction. Please note that the Center does not endorse or recommend any of the following policies. These examples are included simply to illustrate how various jurisdictions have approached similar issues.

Jurisdiction	Law	Law Type	Taxed Products	Excerpt
California	Cal. Rev. & Tax. Code § 30130.51(b) (2016) Cal. Rev. & Tax. Code § 31002 (a)(1)(A) (2022)	Ad valorem tax: 61.74% of wholesale price 12.6% of the sales price	E-cigarette device, components, e-liquid containing nicotine	"The board shall adopt regulations providing for the implementation of an equivalent tax on electronic cigarettes … and the methods for collection of the tax. Such regulations shall include imposition of an equivalent tax on any device intended to be used to deliver aerosolized or vaporized nicotine to the person inhaling from the device when sold separately or as a package; any component, part, or accessory of such a device that is used during the operation of the device, whether sold separately or as a package with such device; and any liquid or substance containing nicotine, whether sold separately or as a package with any device that would allow it to be inhaled."
Minnesota	Minn. Stat. Ann. § 297F.05(3) (2021)	Ad valorem tax: 95% of Wholesale price	E-cigarette devices sold with nicotine cartridges and e-liquids that contain nicotine; refillable devices sold separately are not taxed.	"[A] tax is imposed upon all tobacco products in this state and upon any person engaged in business as a distributor, at the rate of 95 percent of the wholesale sales price of the tobacco products."

Jurisdiction	Law	Law Type	Taxed Products	Excerpt
New Jersey	N.J. Stat. § 54:40B-3.4 (2019) N.J. Stat. § 54:40B-3.2 (2019)	Ad valorem: 10% of the listed retail price; specific tax: 10 cents per ml	Two-tiered: containers of e-liquid (subject to the ad valorem tax) and pre-filled cartridges (subject to the specific tax)	"a. There is imposed a tax at the rate of 10 percent of the listed retail sale price of container e-liquid sold within the State. b. The tax imposed pursuant to this section shall be collected by the seller." "There is imposed a tax upon the sale, use, or distribution of liquid nicotine within this State by a distributor or wholesaler to a retail dealer or consumer at the rate of $0.10 per fluid milliliter on the volume of the liquid nicotine as listed by the manufacturer, and a proportionate rate on all fractional parts of a fluid milliliter of volume of liquid nicotine as listed by the manufacturer."
New Mexico	N.M. Stat. Ann. § 7-12A-3 (2020)	Specific tax: Two-tiered tax: 12.5% of product value for e-liquid; 50 cents per closed system cartridges (one-time use)	Liquid intended to be used in an open system e-cigarette device (does not require nicotine); closed system single-use, pre-filled disposable cartridge containing five milliliters or less of e-liquid	"For the manufacture or acquisition of e-liquid … there is imposed an excise tax at a rate equal to twelve and one-half percent of the product value of the e-liquid." "For the manufacture or acquisition of closed system cartridges … there is imposed an excise tax at a rate of fifty cents ($.50) per closed system cartridge."
New York	N.Y. Tax § 1181 (2019) N.Y. Pub. Health Law § 1399-AA (17) (2020)	Ad valorem: 20% supplemental sales tax	"[V]apor products" (do not have to contain nicotine)	"[T]here is hereby imposed a tax of twenty percent on receipts from the retail sale of vapor products sold in this state. The tax is imposed on the purchaser and collected by the vapor products dealer…."

Jurisdiction	Law	Law Type	Taxed Products	Excerpt
Vermont	32 Vt. Stat. Ann. § 7811(a) (2023) 32 Vt. Stat. Ann. § 7702(15) (2023)	Ad valorem: 92% of wholesale price	E-cigarette devices, e-liquid even if it does not contain nicotine; repair parts, accessories, and charging devices that can only be used in vaping devices or are custom made for vaping devices; vaping apparel	"The tax is intended to be imposed only once upon the wholesale sale of any other tobacco product and shall be at the rate of 92 percent of the wholesale price for all tobacco products except snuff…"

Other Helpful Resources

The Public Health Law Center has many resources on our website about the taxation and pricing of commercial tobacco products, as well as e-cigarettes. In particular, the *Policy Playbook for E-Cigarettes* contains an overview of different policy strategies and the *U.S. E-Cigarette Regulations: A 50 State Review* provides detailed and regularly updated information on e-cigarette regulation in all 50 states and U.S. territories.

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Endnotes

1 Public Health Law Center, *U.S. E-Cigarette Regulations: A 50 State Review* (2023), https://www.publichealthlawcenter.org/resources/us-e-cigarette-regulations-50-state-review.

2 For more information about Tribal policies in this area, see Public Health Law Center, *Tribal Tax Policies for Commercial Tobacco* (2019), https://www.publichealthlawcenter.org/sites/default/files/resources/Tribal-Tax-Policies-for-Commercial-Tobacco-2019.pdf.

3 The Public Health Law Center recognizes that traditional and commercial tobacco are different in the ways they are planted, grown, harvested, and used. Traditional tobacco is and has been used in sacred ways by Indigenous communities and tribes for centuries. Comparatively, commercial tobacco is manufactured with chemical additives for recreational use and profit resulting in disease and death. For more information visit: http://www.keepitsacred.itcmi.org. When the word "tobacco" is used throughout this document a commercial context is implied and intended.

4 Vaping Prevention Resource & Public Health Law Center, *Policy Playbook for E-Cigarettes* (2020), https://www.publichealthlawcenter.org/sites/default/files/resources/Policy-Playbook-ECigarettes.pdf.

5 Food and Drug Administration, *Results from the Annual National Youth Tobacco Survey* (2023), https://www.fda.gov/tobacco-products/youth-and-tobacco/results-annual-national-youth-tobacco-survey.

6 U.S. Dep't Health & Hum. Servs., *Surgeon General's Advisory on E-Cigarette Use Among Youth* (2018), https://e-cigarettes.surgeongeneral.gov/documents/surgeon-generals-advisory-on-e-cigarette-use-among-youth-2018.pdf.

7 *See* Michael S. Dunbar et al., *Disentangling Within- and Between-Person Effects of Shared Risk Factors on E-cigarette and Cigarette Use Trajectories From Late Adolescence to Young Adulthood*, 21 NICOTINE & TOBACCO RES. 10 (2019), https://doi.org/10.1093/ntr/nty179.

8 U.S. Dep't Health & Hum. Servs., *Smoking Cessation: A Report of the Surgeon General* (2020), https://www.hhs.gov/sites/default/files/2020-cessation-sgr-full-report.pdf.

9 Megan C. Diaz et al., *Effect of E-Cigarette Taxes on E-Cigarette and Cigarette Retail Prices and Sales, USA, 2014–2019*, TOBACCO CONTROL (2023).

10 *Id.*

11 Fatma Romeh M. Ali et al., *E-Cigarette Unit Sales, by Product and Flavor Type — United States, 2014–2020*, 69 MORBIDITY & MORTALITY WKLY. REP. 1313, 1313 (2020), https://www.cdc.gov/mmwr/volumes/69/wr/pdfs/mm6937e2-H.pdf.

12 *Id.* at 672.

13 Fatima Romeh M. Ali et al., *E-Cigarette Unit Sales by Product and Flavor Type, and Top-Selling Brands, United States, 2020–2022*, 72 MORBIDITY & MORTALITY WKLY. REP. 672 (2023), https://www.cdc.gov/mmwr/volumes/72/wr/mm7225a1.htm.

14 *See, e.g.*, Public Health Law Center, *What's the Deal with Synthetic Nicotine?* (2022), https://www.publichealthlawcenter.org/commentary/220223/whats-deal-synthetic-nicotine.

15 *See, e.g.*, E-Cigarette Tax Parity Act, S.2463, 116th Cong. (2019) Protecting American Lungs and Reversing the Youth Tobacco Epidemic Act of 2020, H.R.2339, 116th Cong. (2019).

16 Public Health Law Center, *E-Cigarette Tax — States with Laws Taxing E-Cigarettes* (2023), https://www.publichealthlawcenter.org/sites/default/files/States-with-Laws-Taxing-ECigarettes-Dec2020.pdf.

17 *See 50 State Review*, *supra* note 1.

18 *See* Frank J. Chaloupka & John A. Tauras, *Taxation of Emerging Tobacco Products*, Tobacconomics (Dec. 2022), https://tobacconomics.org/research/taxation-of-emerging-tobacco-products-2022-update.

19 Montgomery, Md., County Code. § 52-96(b) (2015); Chicago, Ill., Mun. Code. § 3-47-030 (2020); Anchorage, Alaska, Ordinance No. 2020-89(S) (2020). This ordinance ends the exclusion of electronic cigarettes and vaping devices from the excise tax on tobacco products by amending the Anchorage Municipal Code. *See* Anchorage, Alaska, Mun. Code. § 12.40 (2020).

20 *See, e.g.*, Sarah Marsh, *Some "Nicotine-Free" Vapes High in Addictive Substances, Tests Reveal*, THE GUARDIAN (Apr. 16, 2023); https://www.theguardian.com/society/2023/apr/16/some-nicotine-free-vapes-high-addictive-substances-tests-show; Maciej L. Goniewicz et al., *Nicotine Levels in Electronic Cigarette Refill Solutions: A Comparative Analysis of Products from the U.S., Korea, and Poland*, 26 INT'L J. DRUG POL'Y 583, 585 (2015), https://doi.org/10.1016/j/drugpo.2015.01.020.

21 *Surgeon General's Advisory*, *supra* note 6; Joseph G. Allen, *The Formaldehyde in Your E-Cigs*, N.Y. TIMES (April 4, 2018), https://www.nytimes.com/2018/04/04/opinion/formaldehyde-diacetyl-e-cigs.html.

22 *See Taxation of Emerging Tobacco Products*, *supra* note 18.

23 *Id.*

24 Conn. Gen. Stat. §§ 12-330ee(b)((A)-(B) (2020).

25 32 Vt. Stat. Ann. § 7811(a) (2020).

26 N.J. Stat. § 54:40B-3.2(a) and (d) (2020); N.J. Stat. § 54:40B-3.4(a) (2020).

27 *See Taxation of Emerging Tobacco Products*, *supra* note 18.

28 Ohio Rev. Code Ann. § 5743.51(A)(4) (2020); Ohio Rev. Code Ann. § 5743.62(A)(4) (2020); Ohio Rev. Code Ann. § 5743.63 (2020).

29 *See Taxation of Emerging Tobacco Products*, *supra* note 17; Del. Code Ann. tit. 30 § 5305(c)(2) (2020); N.C. Gen. Stat. § 105-113.35(a1) (2020); Ohio Rev. Code Ann. § 5743.62(A)(4) (2020); Kan. Stat. Ann. § 79-3399(a) (2020); Wash. Rev. Code Ann. § 82.102(1)(a)(i) (2020).

30 *See Taxation of Emerging Tobacco Products*, *supra* note 18.

31 *See id.*; Cal. Rev. & Tax. Code § 30130.51(b) (2020); Minn. Stat. Ann. § 297F.05(3) (2020); 72 Pa. Cons. Stat. § 8202-A(a.1) (2020).

32 San Diego, Cal., Ordinance No. 10699 (N.S.), Sec. 21.2605(e) (2020); *see also Policy Playbook for E-Cigarettes*, *supra* note 4.

33 *See, e.g.*, San Francisco, Cal., Mun. Code. Sec. 19S.2 (2020); Richmond, Cal., Mun. Code. Sec. 7.106.030(k); Santa Clara County, Cal., Mun. Code. Sec. B11-578(l) (2020).

34 *See Policy Playbook for E-Cigarettes*, *supra* note 4.

35 *See, e.g.*, Public Health Law Center, *Tobacco Product Waste: Frequently Asked Questions* (2020), https://www.publichealthlawcenter.org/sites/default/files/resources/Tobacco-Product-Waste-CA-FAQ.pdf.

36 One possible definition to consider when drafting a policy that taxes all e-liquid and related e-cigarette components is the following: "'Electronic smoking device' means any device that can be used to deliver an aerosolized or vaporized substance to the person inhaling from the device, including, but not limited to an e-cigarette, e-cigar, e-pipe, vape pen or e-hookah. Electronic smoking device includes any component, part, or accessory of such a device, and also includes any substance that may be aerosolized or vaporized by such device, whether or not the substance contains nicotine. Electronic smoking device does not include any nicotine cessation product that has been authorized by the U.S. Food and Drug Administration to be marketed and for sale as 'drugs,' 'devices,' or 'combination products,' as defined in the Federal Food, Drug, and Cosmetic Act."

37 There have been few lawsuits regarding e-cigarette taxes. For example, an e-cigarette retailer sued the state of Pennsylvania, challenging whether e-liquids that do not contain nicotine may be taxed under state law. The court determined that it was legitimate for the Pennsylvania General Assembly to tax e-liquids that do not contain nicotine or that contain nicotine derived from a source other than tobacco. E. Coast Vapor, LLC v. Pennsylvania Dep't of Revenue, 189 A.3d 504 (2018).