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Monitoring U.S. E-Cigarette Sales: *National Trends*

This brief report highlights trends in national e-cigarette sales from January 2018 through December 2023.

Notice of Revision to Previous Data Estimates

- The data in this brief have been updated to capture new e-cigarette products coded by Circana. Historical sales estimates may differ from previous briefs.

Federal Regulatory Actions

- The U.S. Food and Drug Administration (FDA) issued an enforcement policy, effective February 2020, prioritizing enforcement of existing regulations against prefilled e-cigarette cartridges in flavors other than tobacco and menthol.
- FDA began issuing marketing denial orders for certain flavored e-cigarette products as of September 9, 2021.
- On April 15, 2022, FDA was granted authority to regulate products containing nicotine from any source, including synthetic nicotine.

Key Findings

Total e-cigarettes:

- During the 6-month period ending on December 31, 2023, the total number of e-cigarette products sold in the U.S. has reached 6,323 products; of which 94% were disposable e-cigarettes.[1]
- From February 2, 2020, to December 31, 2023, total e-cigarette unit sales increased by 42.8% (15.6 million units to 22.9 million units); and non-tobacco flavored e-cigarette sales (mint, menthol, clear/other cooling and other flavors) increased by 61.0% (11.1 million units to 17.9 million units). By December 31, 2023, non-tobacco flavored e-cigarette sales accounted for 80.6% of total unit sales.
- The top ten brands during the period spanning September 10, 2023, through December 31, 2023, were (in descending order of dollar sales) Vuse, JUUL, Breeze Smoke, Elfbar[2], NJOY, HQD, Lost Vape Orion, Juicy Bar, Loon Maxx, and Mr Fog. The top five brands and top ten brands accounted for 67.2% and 76.4% of total dollar sales, respectively.
- According to the 2023 National Youth Tobacco Survey (NYTS), 10.0% (1.56 million) of high school and 4.6% (550,000) of middle school students currently used e-cigarettes. Among those who currently used e-cigarettes, 89.4% used flavored e-cigarettes.[3]

Flavored disposable e-cigarettes:

- From February 2, 2020, to December 31, 2023, disposable e-cigarette sales increased by 212.4% (4.1 million units to 12.7 million units); their unit share increased from 26.2% to 57.2% of total e-cigarette sales. As of December 31, 2023, 77.3% of disposable sales were of flavors other than tobacco, mint, menthol, and clear/other cooling.
- Among youth who used e-cigarettes in 2023, 60.7% used disposable e-cigarettes. The most commonly used flavors of disposable e-cigarettes were fruit (70.5%) and candy, desserts, other sweets (39.8%).[3]

Menthol flavored e-cigarettes:

- From February 2, 2020, to December 31, 2023, overall menthol-flavored e-cigarette sales increased by 19.9% (5.2 million units to 6.2 million units), including a 20.8% increase in menthol-flavored cartridge sales (4.8 million units to 5.8 million units). As of December 31, 2023, menthol-flavored e-cigarette sales accounted for 27.8% of the overall e-cigarette market and 61.0% of the prefilled cartridge market.
- Among youth who used flavored e-cigarettes in 2023, 20.1% used menthol flavor; 38.7% of students using prefilled cartridges used menthol (NYTS).[3]

Relevant Issues

- The e-cigarette or vaping product use-associated lung injury (EVALI) outbreak in late 2019 and COVID-19 pandemic may have affected e-cigarette sales.
- During 2020-2023, additional flavored tobacco products continued to be marketed, such as flavored cigars; or entered the market, such as nicotine pouches.
- Units of e-cigarettes are not adjusted to account for variations in unit size. Large-format disposable e-cigarettes that allow for thousands of "puffs" are now available. Declines in unit sales may not signify declines in prevalence of use or consumption.
- Following California's prohibition of flavored tobacco product sales in December 2022, sales of products branded as clear, clear ice, and unflavored, likely containing non-menthol synthetic cooling agents, increased (e.g., Flum Pebble Clear, EB Design BC5000 Clear). These products are categorized as Clear/Other Cooling for the purposes of this data brief.

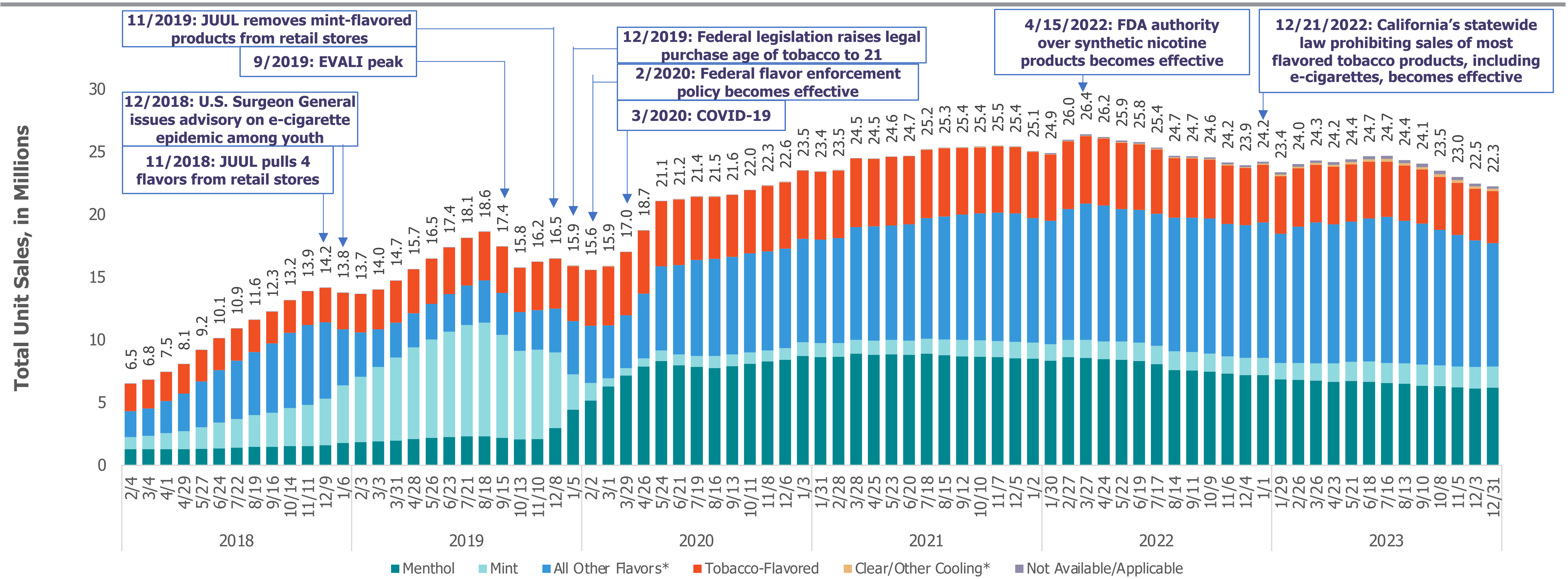
Conclusion

Restrictions that exempt certain flavors and product types likely shift sales to the products and flavors that remain on the market. Policies that prohibit all non-tobacco flavored e-cigarettes, including flavored disposable e-cigarettes and menthol-flavored prefilled cartridges, reduce e-cigarette sales and may reduce youth access and use of e-cigarettes.

1. Number of e-cigarette products is counted as the number of unique UPCs (Universal Product Code) in Circana data.
2. Elfbar has begun to rebrand as EBDesign and EBCreate as of March 2023 following a court-ordered injunction. Sales of EBDesign and EBCreate are aggregated with Elfbar in these estimates.

3. Birdsey J, Cornelius M, Jamal A, et al. Tobacco Product Use Among U.S. Middle and High School Students — National Youth Tobacco Survey, 2023. MMWR Morb Mortal Wkly Rep 2023;72:1173–1182..

Figure 1. National E-Cigarette Unit Sales by Flavor, 4 Week Estimates 2/4/2018 – 12/31/2023*



*Sales data do not reflect sales from vape shops or online retailers; dates represent end of 4-week periods; All Other Flavors category includes fruit, clove/spice, chocolate, alcoholic drink (such as wine, cognac, or other cocktails), candy/desserts/other sweets, some other flavor; Clear/Other Cooling include products with flavor names such as clear, clear ice, or unflavored, which likely contain non-menthol synthetic cooling agents (e.g., Flum Pebble Clear, EB Design BC5000 Clear); e-cigarette accessories and devices sold without e-liquids were excluded (9.5% of total dollar sales in 2022). Unit sales were standardized to reflect the most common package size for each product type. A standardized unit was equal to five prefilled cartridges, one disposable device, or one e-liquid bottle.

Trends of Unit Sales by Flavor Following FDA's Flavor Enforcement Policy

- From February 2, 2020, to December 31, 2023:
  - Total monthly e-cigarette unit sales increased by 42.8% from 15.6 to 22.3 million units.
  - Tobacco-flavored e-cigarette sales decreased by 6.7% (from 4.4 million units to 4.1 million units); unit share decreased from 28.5% to 18.6%.
  - Non-tobacco flavored e-cigarette sales (mint, menthol, clear/other cooling, other flavors) increased by 61.0% (11.1 million units to 17.9 million units); unit share increased from 71.5% to 80.6%.
    - Mint-flavored e-cigarette sales increased by 18.3% (from 1.4 million units to 1.7 million units); unit share decreased from 9.1% to 7.5%.
    - Menthol-flavored e-cigarette sales increased by 19.9% (from 5.2 million units to 6.5 million units); unit share decreased from 32.9% to 28.1%.
    - All other-flavored e-cigarette sales increased by 117.3% (from 4.5 million units to 9.9 million units); unit share increased from 29.1% to 44.3%.
- California's e-cigarette unit sales represented 3.7% of national e-cigarette unit sales on December 4, 2022 (i.e., 0.8 million units out of 23.9 million units). Following California's restriction on flavored e-cigarette sales (effective 12/21/2022), unit sales in California decreased by 42.7% during December 4, 2022 and December 31, 2023. This decline represents 21.2% (i.e., 355.0 thousand units out of 1678.5 thousand units) of the decline in national e-cigarette sales that occurred during this period.
  - During this period, clear/other cooling-flavored e-cigarette sales in California increased by 782.1% (from 7.5 thousand to 66.4 thousand); unit share increased from 0.9% to 13.9%. National sales of clear/other cooling e-cigarettes increased by 170.0% (from 73.5 thousand units to 198.5 thousand units); unit share increased from 0.3% to 0.9%

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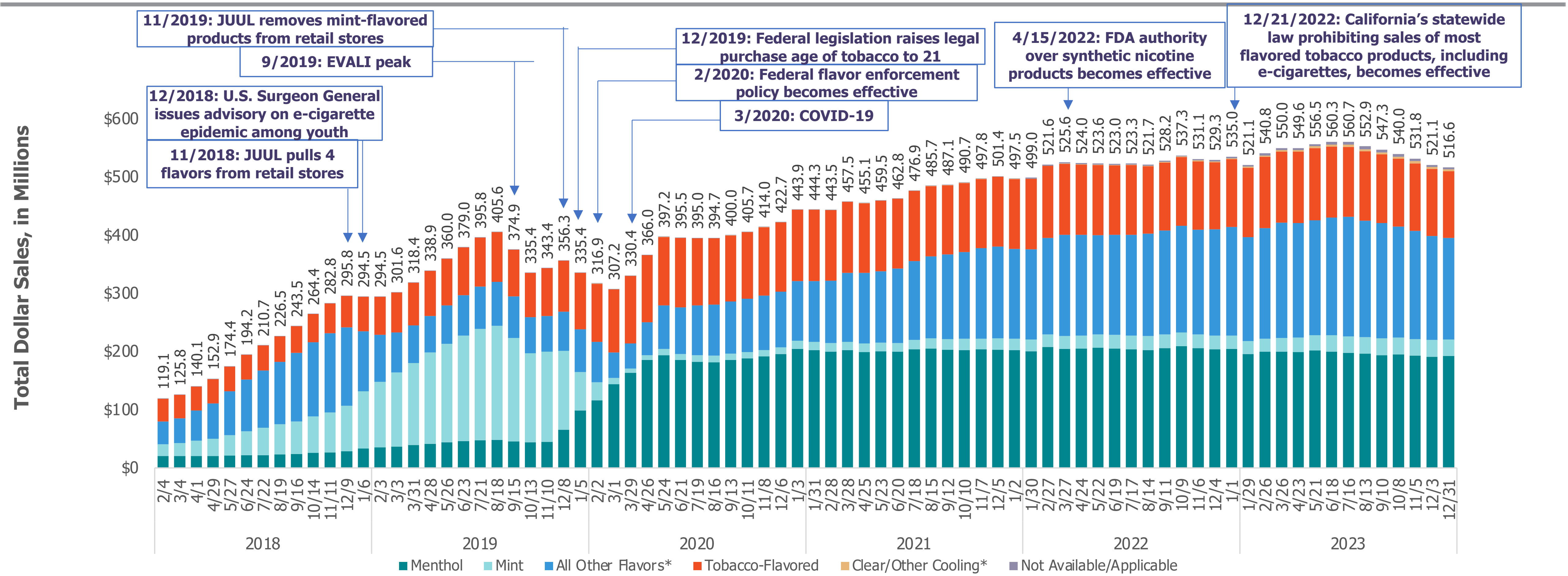
Figure 2. National E-Cigarette Dollar Sales by Flavor, 4 Week Estimates 2/4/2018 – 12/31/2023*



*Sales data do not reflect sales from vape shops or online retailers; dates represent end of 4-week periods; All Other Flavors category includes fruit, clove/spice, chocolate, alcoholic drink (such as wine, cognac, or other cocktails), candy/desserts/other sweets, some other flavor; Clear/Other Cooling include products with flavor names such as clear, clear ice, or unflavored, which likely contain non-menthol synthetic cooling agents (e.g., Flum Pebble Clear, EB Design BC5000 Clear); ; e-cigarette accessories and devices sold without e-liquids were excluded (9.5% of total dollar sales in 2022). Dollar sales are presented in nominal terms and are not adjusted for inflation.

Trends of Dollar Sales by Flavor Following FDA's Flavor Enforcement Policy

- From February 2, 2020, to December 31, 2023:
  - Total monthly e-cigarette dollar sales increased by 63.0% from 316.9 to 516.6 million dollars.
  - Tobacco-flavored e-cigarette sales increased by 14.5% (from 100.4 million dollars to 114.9 million dollars); dollar share (i.e., tobacco flavored proportion of total dollar sales) decreased from 31.7% to 22.2%.
  - Non-tobacco flavored e-cigarette sales (mint, menthol and other flavors) increased by 84.0% (216.5 million dollars to 398.5 million dollars); unit share increased from 68.3% to 77.1%.
    - Mint-flavored e-cigarette sales decreased by 7.3% (from 31.2 million dollars to 28.9 million dollars); dollar share decreased from 9.8% to 5.6%.
    - Menthol-flavored e-cigarette sales increased by 65.5% (from 116.1 million dollars to 192.1 million dollars); dollar share increased from 36.6% to 37.2%.
    - All other-flavored e-cigarette sales increased by 151.8% (from 69.1 million dollars to 174.0 million dollars); dollar share increased from 21.8% to 33.7%.
- Differences between trends in unit sales and dollar sales could be due, in part, to inflation and the recent increase in large-format disposable e-cigarettes that allow for thousands of puffs. Higher price per device of large-format disposable e-cigarettes might account for declines in unit sales without comparable declines in dollar sales.

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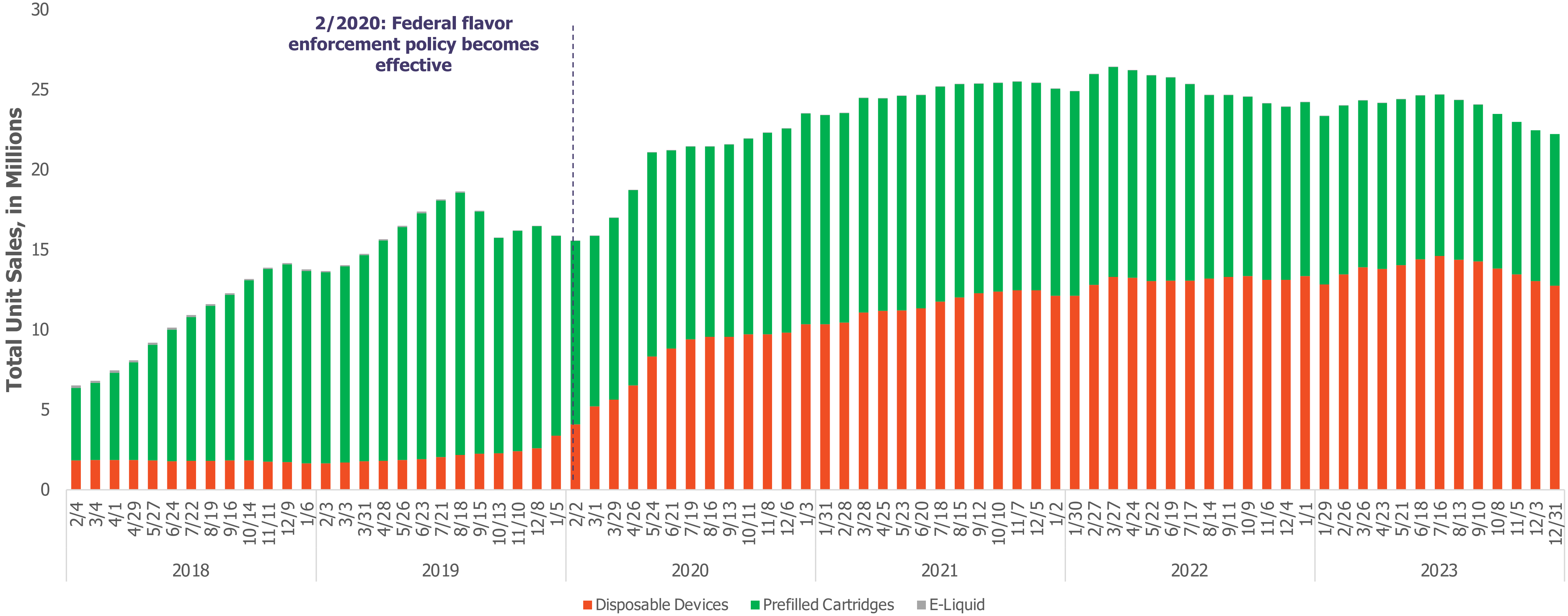
Figure 3. National E-Cigarette Unit Sales by Product Type, 4 Week Estimates 2/4/2018 – 12/31/2023*



*Sales data do not reflect sales from vape shops or online retailers; dates represent end of 4-week periods; prefilled cartridges include tanks, cartridges, and pods used in rechargeable and reusable e-cigarette devices; disposable devices include nonrechargeable and nonreusable e-cigarette devices that are not intended to be refilled with e-liquid after being depleted; e-liquids are containers of the liquid used in e-cigarette devices, which typically contain a humectant (e.g., propylene glycol), nicotine, and flavoring. Unit sales were standardized to reflect the most common package size for each product type. A standardized unit was equal to five prefilled cartridges, one disposable device, or one e-liquid bottle.

Trends of Unit Sales by Product Following FDA's Flavor Enforcement Policy

- Following FDA's flavor enforcement policy, which prohibited the sale of flavored prefilled cartridges but exempted disposable devices and menthol and tobacco prefilled cartridges, between February 2, 2020, and December 31, 2023:
  - Sales of disposable devices increased by 212.4% (from 4.1 million units to 12.7 million units).
  - Sales of prefilled cartridges decreased by 17.3% (from 11.5 million units to 9.5 million units).

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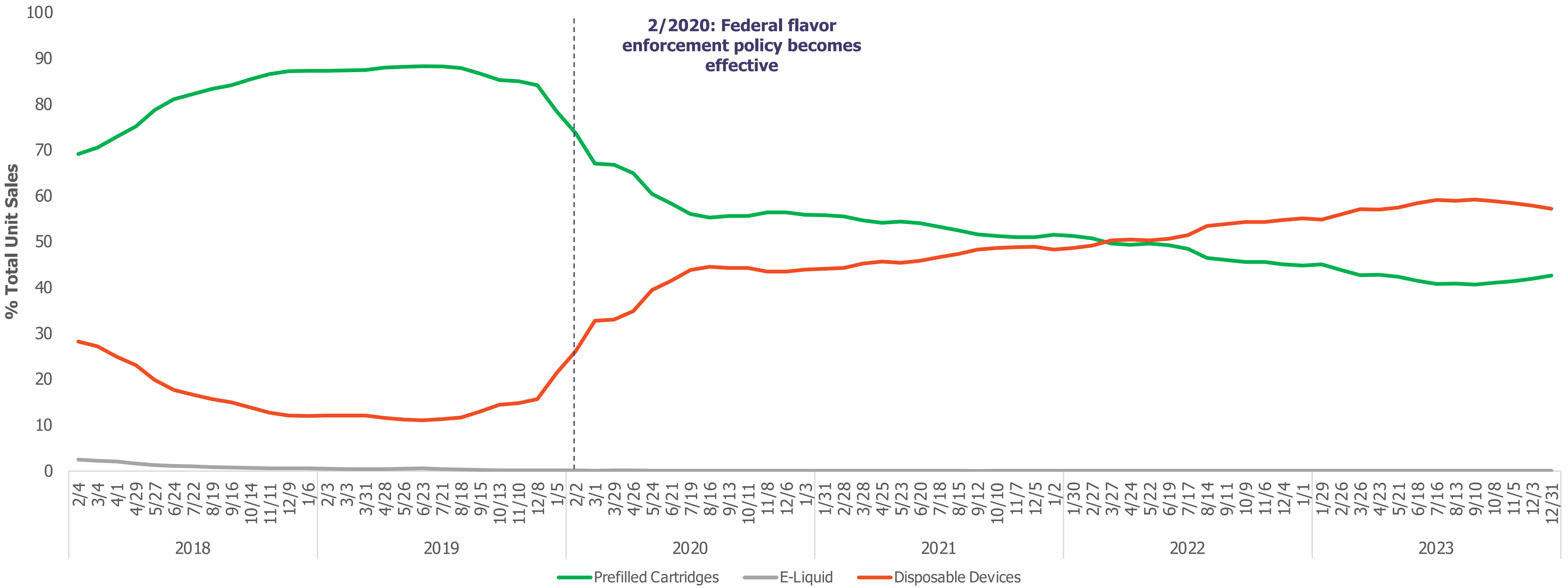
Figure 4. National E-Cigarette Unit Share by Product Type, 4 Week Estimates 2/4/2018 – 12/31/2023*



*Sales data do not reflect sales from vape shops or online retailers; dates represent end of 4-week periods; prefilled cartridges include tanks, cartridges, and pods used in rechargeable and reusable e-cigarette devices; disposable devices include nonrechargeable and nonreusable e-cigarette devices that are not intended to be refilled with e-liquid after being depleted; e-liquids are containers of the liquid used in e-cigarette devices, which typically contain a humectant (e.g., propylene glycol), nicotine, and flavoring. Unit sales were standardized to reflect the most common package size for each product type. A standardized unit was equal to five prefilled cartridges, one disposable device, or one e-liquid bottle.

Trends of Unit Share by Product Following FDA's Flavor Enforcement Policy

- Following FDA's flavor enforcement policy, which prohibited the sale of flavored prefilled cartridges but exempted disposable devices and menthol and tobacco prefilled cartridges, between February 2, 2020, and December 31, 2023:
  - Unit share of disposable devices increased from 26.2% to 57.2%.
  - Unit share of prefilled cartridges decreased from 73.7% to 42.7%.

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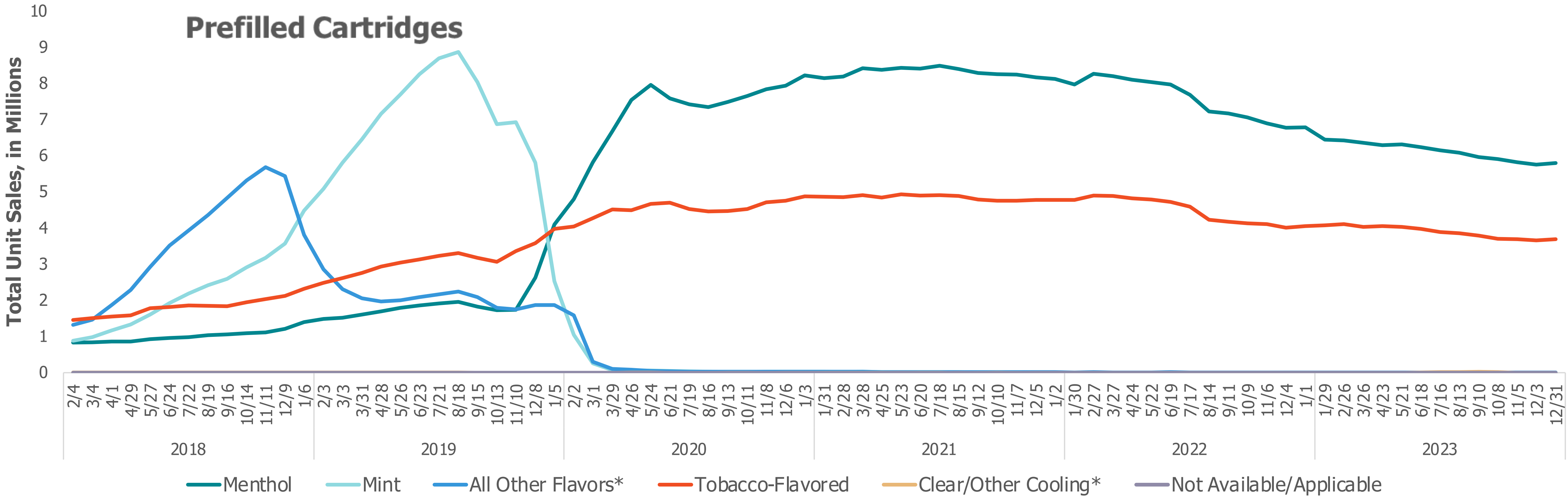
Figure 5. National E-Cigarette Unit Sales by Product Type and Flavor, 4 Week Estimates 2/4/2018 – 12/31/2023



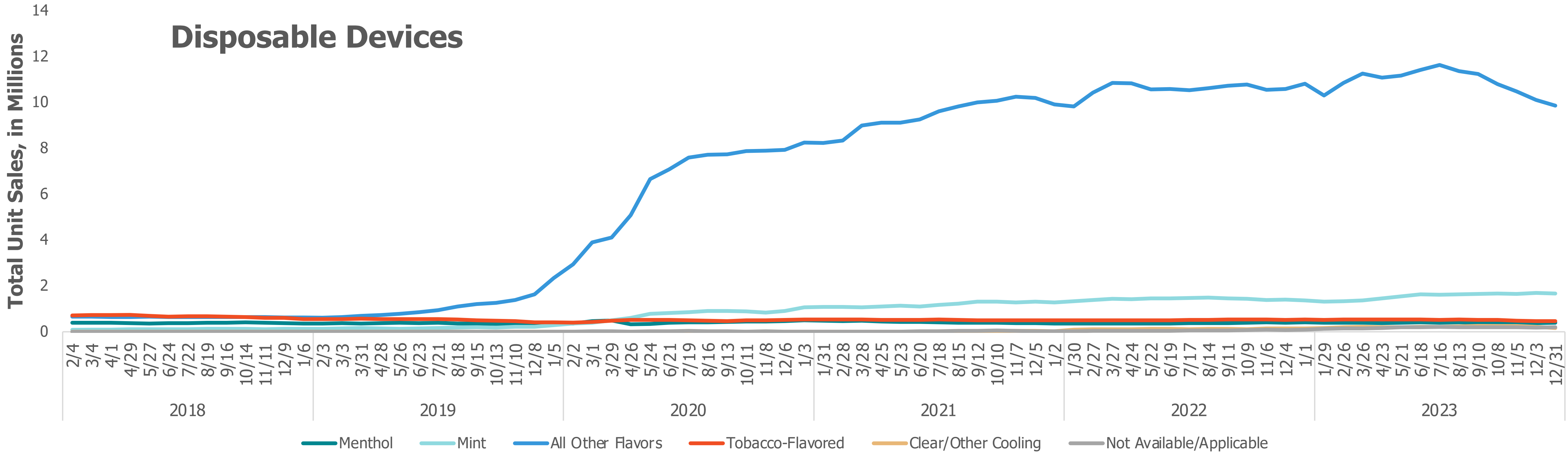


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Figure 6. National E-Cigarette Unit Sales by Product Type and Flavor, 4 Week Estimates 2/4/2018 – 12/31/2023

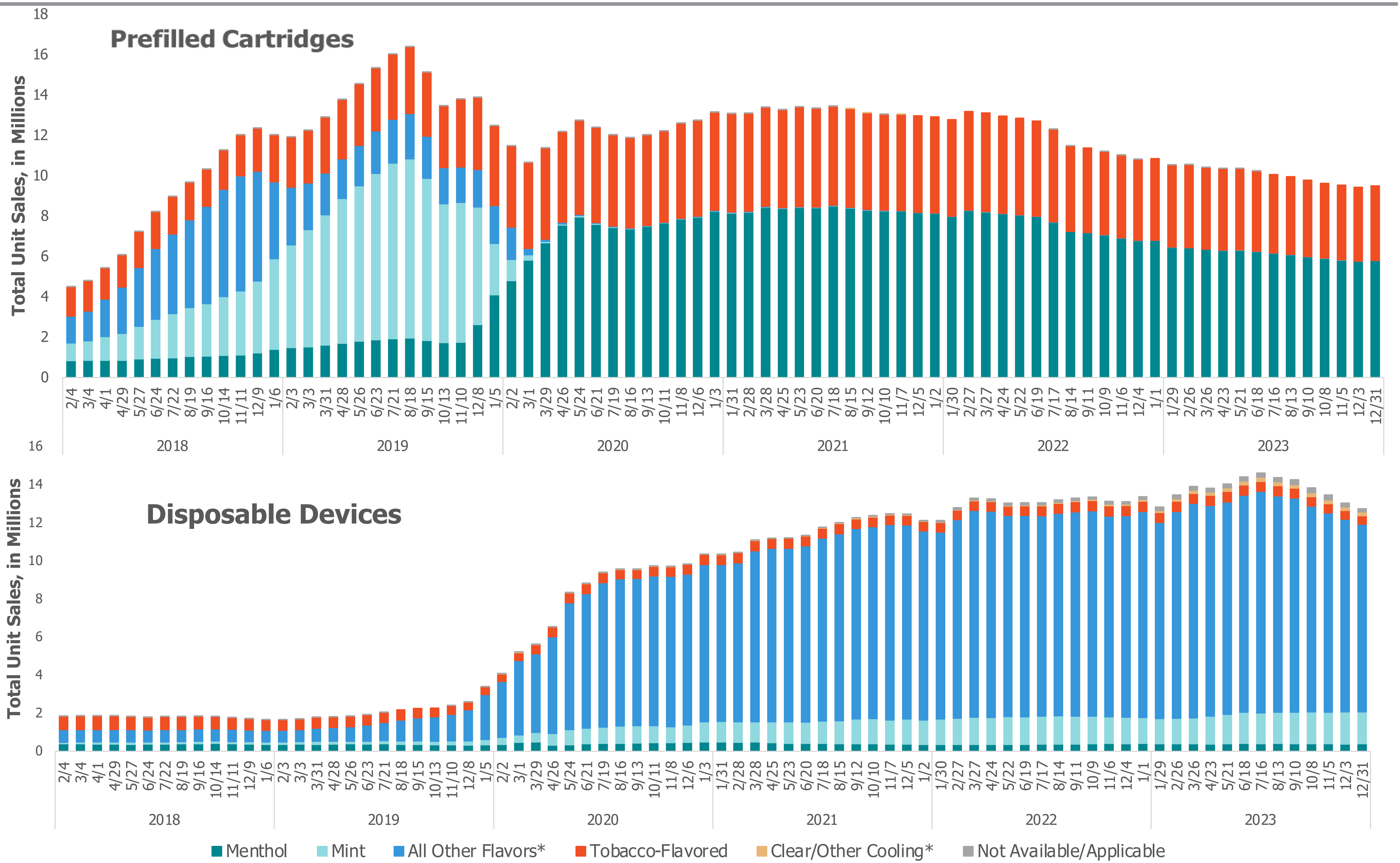

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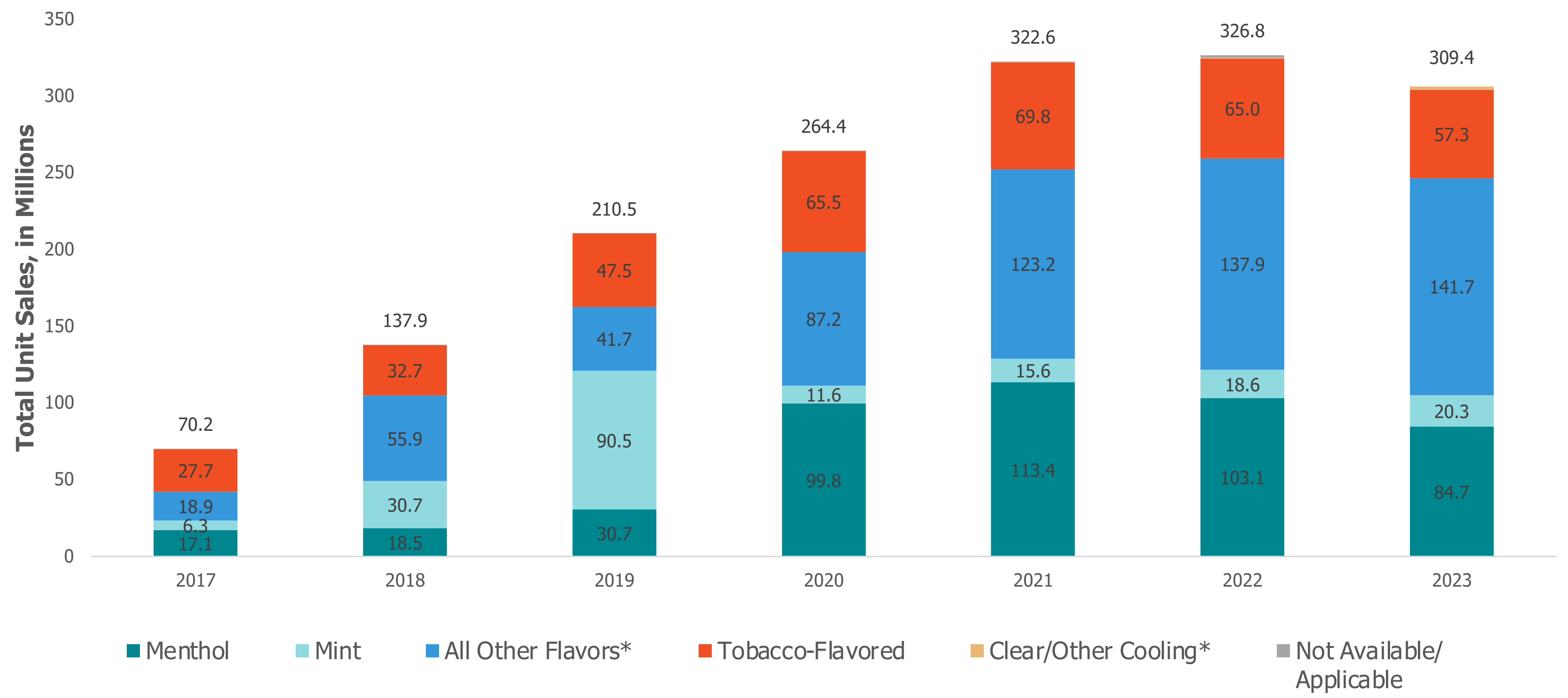
Figure 7. National E-Cigarette Unit Sales by Flavor, Annual Estimates 2017 – 2023*



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Unit Sales Annual Trends by Flavor (2022 - 2023)

- From 2022 to 2023:
  - Annual total e-cigarette unit sales decreased by 5.3% (from 326.8 million units to 309.4 million units);
  - Unit sales of menthol-flavored e-cigarettes decreased by 17.9% (from 103.1 million units to 84.7 million units);
  - Unit sales of tobacco-flavored e-cigarettes decreased by 11.8% (from 65.0 million units to 57.3 million units);
  - Unit sales of mint-flavored e-cigarettes increased by 9.4% (from 18.6 million units to 20.3 million units);
  - Unit sales of clear/other cooling-flavored e-cigarettes increased by 223.5% (from 0.7 million units to 2.4 million units); and
  - Unit sales of other-flavored e-cigarettes increased by 2.8% (from 137.9 million units to 141.7 million units).

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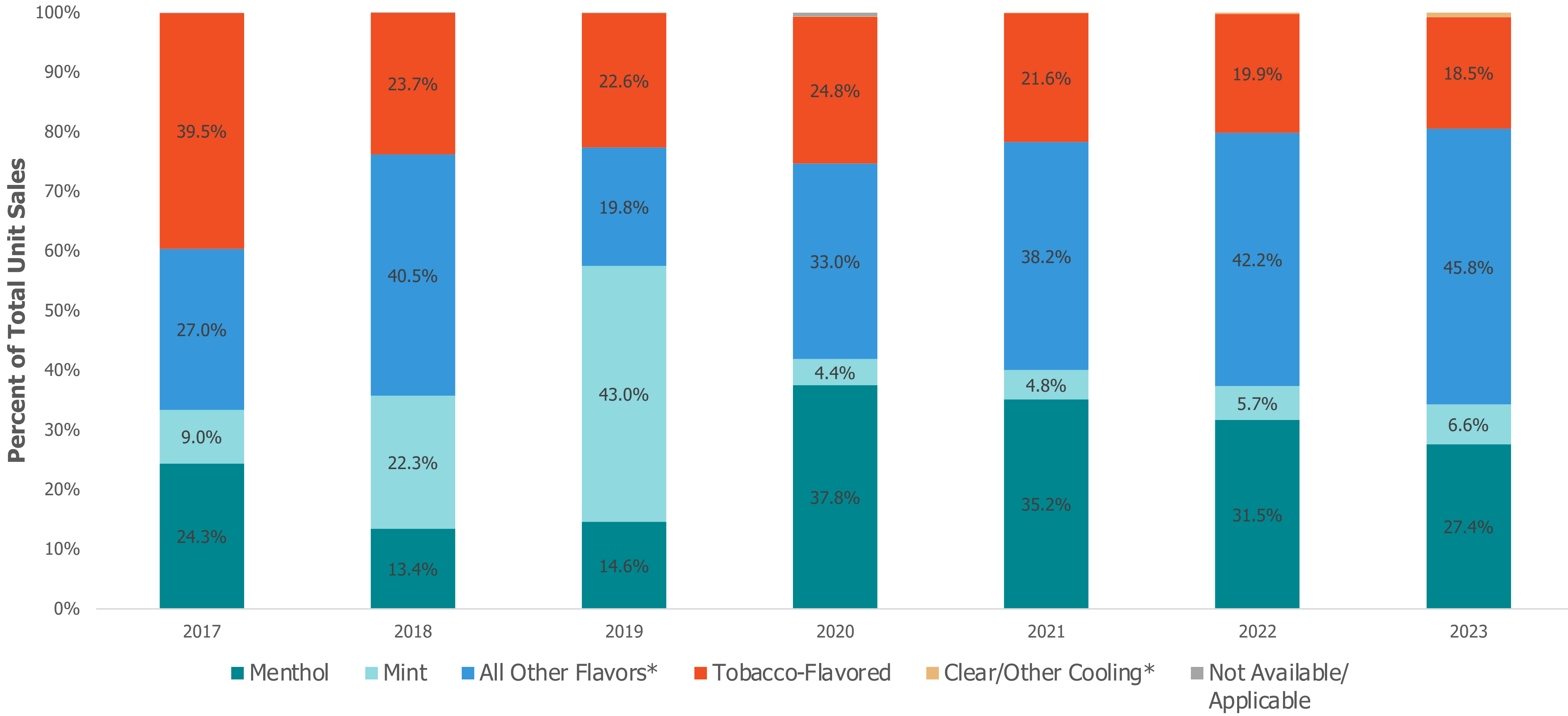
Figure 8. Unit Share of National E-Cigarette Unit Sales by Flavor, Annual Estimates 2017 – 2023*



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Unit Share Annual Trends by Flavor (2022 - 2023)

- From 2022 to 2023:
  - Unit share of menthol-flavored e-cigarette sales decreased from 31.5% to 27.4%;
  - Unit share of tobacco-flavored e-cigarette sales decreased from 19.9% to 18.5%;
  - Unit share of mint-flavored e-cigarette sales increased from 5.7% to 6.6%;
  - Unit share of other-flavored e-cigarette sales increased from 42.2% to 45.8%; and
  - Unit share of clear/other cooling-flavored e-cigarette sales increased from 0.2% to 0.8%.

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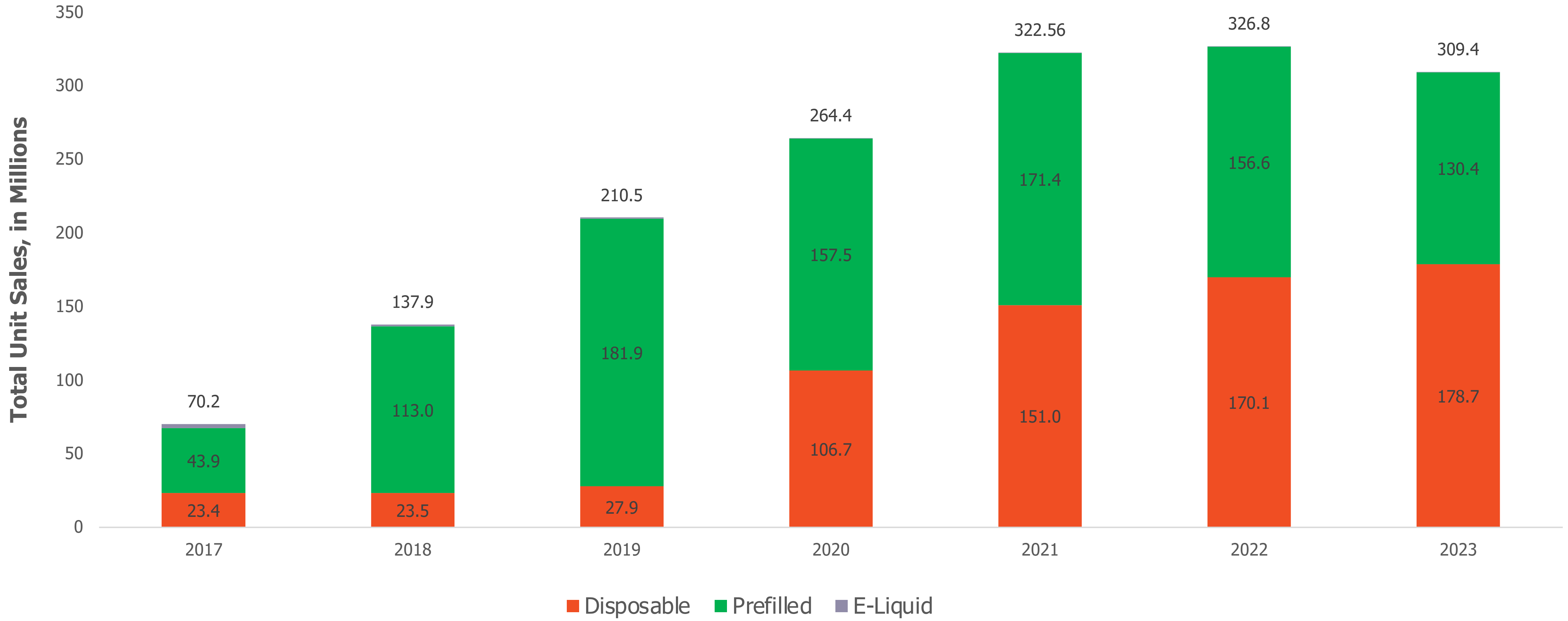
Figure 9. National E-Cigarette Unit Sales by Product Type, Annual Estimates 2017 – 2023*



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Unit Sales Annual Trends by Product (2022 - 2023)

- From 2022 to 2023:
  - Annual total e-cigarette unit sales decreased by 5.3% (from 326.8 million units to 309.4 million units);
  - Unit sales of disposable e-cigarettes increased by 5.1% (from 170.1 million units to 178.7 million units); and
  - Unit sales of prefilled cartridge e-cigarettes decreased by 16.7% (from 156.6 million units to 130.4 million units).

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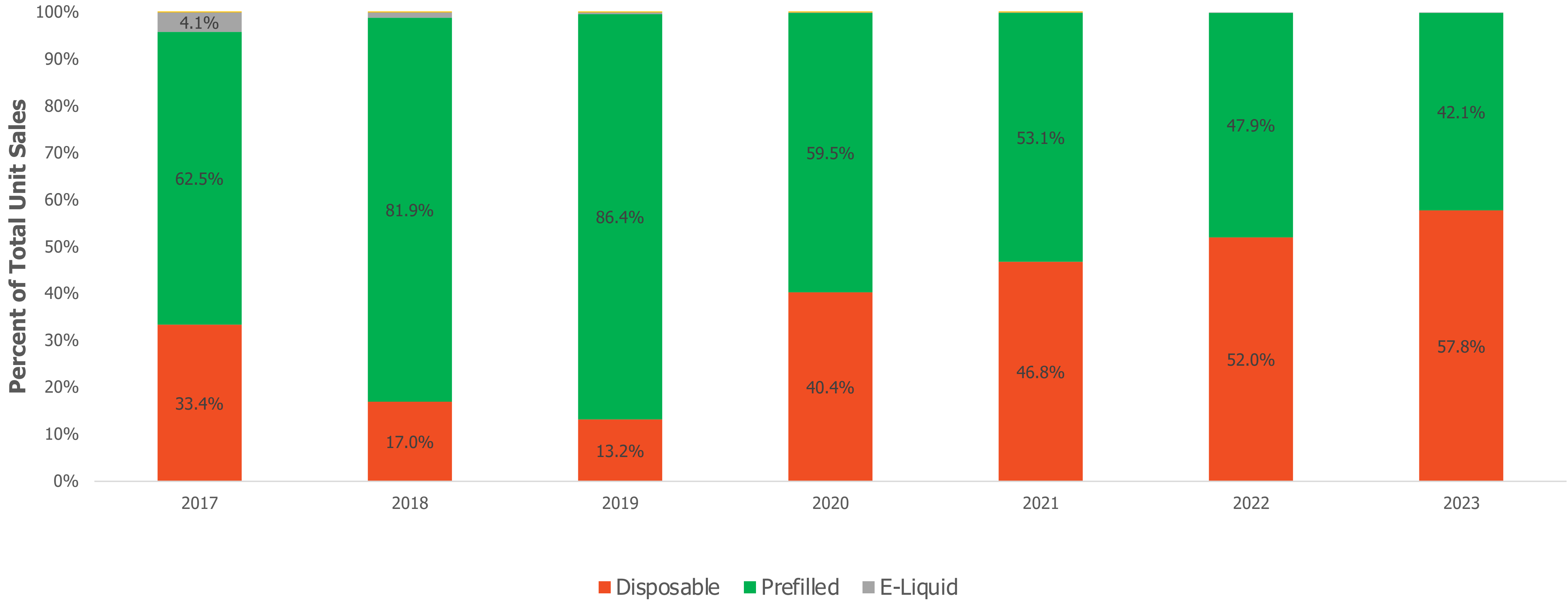
Figure 10. Unit Share of National E-Cigarette Unit Sales by Product Type, Annual Estimates 2017 – 2023*



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Unit Share Annual Trends by Product (2022 - 2023)

- From 2022 to 2023:
  - Unit share of disposable e-cigarette sales increased from 52.0% to 57.8%; and
  - Unit share of prefilled cartridge e-cigarette sales decreased from 47.9% to 42.1%.

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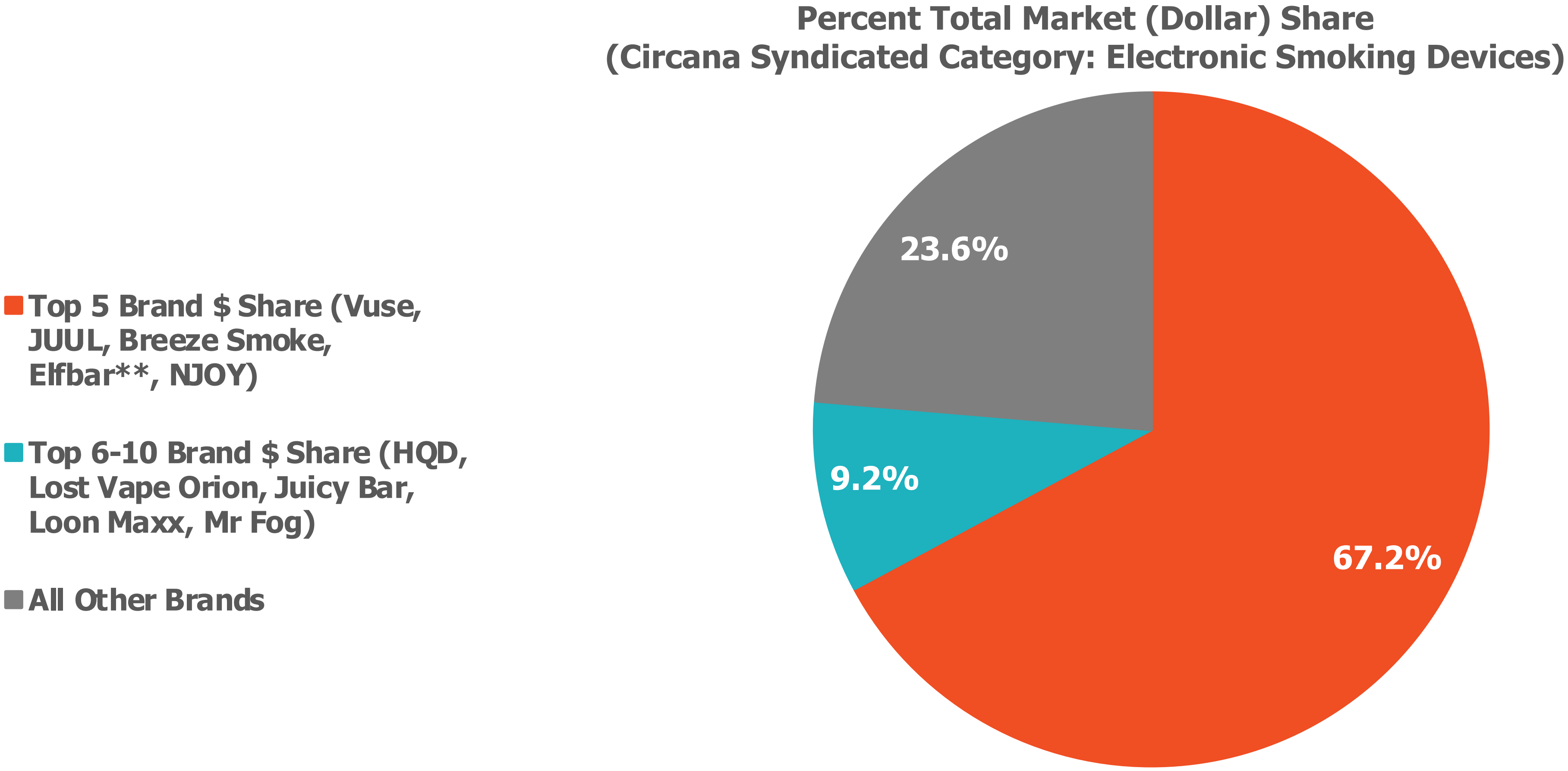
Figure 11. Dollar Market Share of Top Brands, 9/10/2023 – 12/31/2023*



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**Elfbar has begun to rebrand as EBDesign and later as EBCreate as of March 2023 following a court-ordered injunction. Sales of EBDesign and EBCreate are aggregated with Elfbar in these estimates.

Dollar Share by Top Brand Aggregates
(Circana Syndicated Category: Electronic Smoking Devices)

- The top ten brands during the period spanning September 10, 2023, through December 31, 2023, were (in descending order of dollar sales) Vuse, JUUL, Breeze Smoke, Elfbar**, NJOY, HQD, Lost Vape Orion, Juicy Bar, Loon Maxx, and Mr Fog. The top five brands and top ten brands accounted for 67.2% and 76.4% of total dollar sales, respectively.

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