

FDA should not authorize Philip Morris International to market IQOS with claims of reduced risk or reduced exposure

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Philip Morris International (PMI) submitted modified risk tobacco product (MRTP) applications in December 2016 seeking authorization to market its IQOS heated tobacco product with three flavors of Heatsticks (Marlboro, Marlboro Smooth Menthol, and Marlboro Fresh Menthol) as a MRTP with the following reduced risk and reduced exposure claims:

1. “Switching completely from cigarettes to the IQOS system can reduce the risks of tobacco-related diseases.” (Reduced risk claim)
2. “Switching completely to IQOS presents less risk of harm than continuing to smoke cigarettes.” (Reduced risk claim)
3. “Switching completely from cigarettes to the IQOS system significantly reduces your body’s exposure to harmful and potentially harmful chemicals.” (Reduced exposure claim)

To obtain a “reduced risk” marketing order, the Family Smoking Prevention and Tobacco Control Act (TCA)¹ requires an applicant to demonstrate that the subject product, *as it is actually used by consumers*, will:

1. significantly reduce harm and the risk of tobacco-related disease to individuals; *and*
2. will provide population-level benefits for both users and non-users of tobacco products.

To obtain a “reduced exposure” marketing order, TCA section 911(g)(2) requires an applicant to demonstrate, among other things, that:

1. such order would be “appropriate to promote the public health”;

¹ Family Smoking Prevention and Tobacco Control Act, Sec. 911(g)(1). Pub. L. 111-31, 21 U.S.C. 387k (2009).

2. the labeling and advertising is limited to an explicit or implicit representation that the product contains a reduced level of a substance or presents a reduced exposure to a substance in tobacco smoke;
3. the magnitude of the “overall reductions in exposure” to the harmful substances is “substantial,” and the product “as actually used” exposes consumers to the specified reduced level of the substances;
4. the product “*as actually used by consumers* will not expose them to higher levels of other harmful substances compared to the similar types of tobacco products then on the market” unless such increases are minimal; and
5. testing of actual consumer perception show that the labeling and marketing will not mislead consumers into believing that the product has been demonstrated to be less harmful or presents less risk of disease.

Because PMI’s MRTP application for IQOS failed to meet these requirements for either its reduced risk or its reduced exposure claims, FDA must reject PMI’s MRTP application and not issue a marketing order for any of PMI’s proposed MRTP claims for IQOS.

1. PMI’s proposed reduced risk MRTP claims for IQOS are not supported by the data, so FDA must not issue a reduced risk MRTP marketing order for IQOS.

- a) **FDA agreed that PMI’s own data failed to show consistently lower risks of harm in humans using IQOS compared with conventional cigarettes.**

An independent analysis² of studies in the IQOS MRTP application concluded that PMI’s own data failed to show consistently lower risks of harm in humans using IQOS compared with conventional cigarettes because there were no statistically significant differences between IQOS and conventional cigarette users for 23 of the 24 biomarkers of potential harm (BOPH) studied. ***FDA determined in its evaluation of PMI’s premarket tobacco product application (PMTA) for IQOS that: “overall, the studies conducted by the applicant have not demonstrated evidence of reduction in long-term disease risks [emphasis added].”***³

- b) **PMI’s data showed and FDA acknowledged that IQOS aerosol may present toxicological risks for users**

² Glantz SA. PMI's own in vivo clinical data on biomarkers of potential harm in Americans show that IQOS is not detectably different from conventional cigarettes. *Tob Control* 2018;27(Suppl 1):s9-s12;

Glantz, SA, PMI’s Own Data on Biomarkers of Potential Harm in Americans Show that IQOS is Not Detectably Different from Conventional Cigarettes, so FDA Must Deny PMI’s Modified Risk Claims, November 13, 2017. Docket No: FDA-2017-D-3001. Available at: <https://www.regulations.gov/document?D=FDA-2017-D-3001-0212>

³ FDA, PMTA Coversheet: Technical Project Lead Review (TPL), April 29, 2019, pp. 58-59. Available at: <https://www.fda.gov/media/124247/download>.

While PMI's MRTP application sought to demonstrate that IQOS aerosol exposes users to lower levels of *some* toxic substances on FDA's harmful and potentially harmful constituents (HPHC) list, evidence in *PMI's MRTP* application⁴ **also revealed that IQOS produced higher levels than conventional cigarettes of at least 56 toxic substances not on FDA's HPHC list.**

In addition, an independent analysis⁵ found that PMI initially reported levels for only 40 of 93 HPHCs, and levels of 56 other constituents not included in their "PMI-58 study" (including glycerol and propylene glycol) or FDA's HPHC list were higher in IQOS emissions than in 3R4F reference cigarette smoke, including 22 that were more than 200% higher and 7 that were more than 1000% higher, and the impact of these substances on the overall toxicity or harm of IQOS is unknown. Additionally, another study⁶ found (and FDA acknowledged⁷) that other unmeasured constituents may be formed at temperatures below the combustion threshold for tobacco.

FDA's toxicology review for the IQOS PMTA also found that 80 chemicals in IQOS Heatstick aerosols, including four that are possibly carcinogenic, are unique to IQOS or present in higher levels than in 3R4F smoke.⁸ Additionally, IQOS aerosol contains 15 other chemicals that are possibly genotoxic, and 20 more GRAS (generally recognized as safe for *ingestion*, not inhalation) compounds that have potential adverse health effects.⁸

Moreover, since PMI conducted its studies and submitted its IQOS MRTP application, FDA proposed⁹ adding to the list of HPHCs 19 toxic substances that were not on FDA's original

⁴ Center for Tobacco Products. Addendum to FDA Briefing Document. January 24-25, 2018. Meeting of the Tobacco Products Scientific Advisory Committee (TPSAC). Data Source: Section 3.3.2 and section 6.1.1.3.4 of the IQOS MRTPA's and Appendix A of an amendment to the MRTPA's submitted on December 8, 2017. <https://www.fda.gov/downloads/AdvisoryCommittees/CommitteesMeetingMaterials/TobaccoProductsScientificAdvisoryCommittee/UCM593199.pdf>.

⁵ St.Helen G, Jacob P III, Nardone N, *et al.* IQOS: examination of Philip Morris International's claim of reduced exposure. *Tob Control* 2018;**27**(Suppl 1):s30-s36; St.Helen G, Jacob P III, Nardone N, Benowitz NL. Because PMI's application did not report the full range of HPHCs in IQOS aerosol, characterize HPHCs in sidestream emissions, include a non-targeted analysis of chemicals in emissions, or conduct clinical studies to describe exposure to toxicants during dual use with other tobacco products, FDA must deny PMI's application. Docket Number: FDA-2017-D-3001. November 29, 2017. Tracking number: 1k1- 902j-m8kv. <https://www.regulations.gov/document?D=FDA-2017-D-3001-0129>.

⁶ Auer R, Concha-Lozano N, Jacot-Sadowski I, *et al.* Heat-Not-Burn Tobacco Cigarettes: Smoke by Any Other Name. *JAMA Intern Med* 2017;**177**(7):1050-1052.

⁷ FDA, PMTA Coversheet: Technical Project Lead Review (TPL), April 29, 2019, pp. 30-31. Available at: <https://www.fda.gov/media/124247/download>.

⁸ FDA, PMTA Coversheet: Technical Project Lead Review (TPL), April 29, 2019, p. 41. Available at: <https://www.fda.gov/media/124247/download>.

⁹ FDA, Harmful and Potentially Harmful Constituents in Tobacco Products; Established List; Proposed Additions; Request for Comments, Docket No. FDA-2012-N-0143, 84 FR 38032

list of HPHCs. Several of the toxic substances on FDA's proposed new list, including furfural, glycerol, glycidol, and propylene glycol, were found⁵ in much higher levels in IQOS Heatsticks than in 3R4F reference cigarettes.

We incorporate by reference the public comment¹⁰ we submitted to the HPHC docket that discusses the dangers of these constituents supporting FDA's expansion of the HPHC list and suggesting some additional constituents.

In January 2020, FDA posted an amendment to PMI's MRTP application that tried to rationalize why PMI's study on lung cancer tumorigenesis in A/J mice exposed to IQOS aerosol that showed an *increase in morbidity and mortality in the mice exposed to IQOS aerosol* was not related to the IQOS aerosol. (In response to a question FDA asked about the interpretation of this study, PMI said, "the increased early moribundity/morbidity observed in the male mice exposed to high levels of [IQOS] aerosol was due to a strain-specific susceptibility in the male urogenital tract."¹¹) Despite PMI's attempts to obscure the results of its own study, the data showed that mice exposed to IQOS aerosol had a serious adverse event. We incorporate by reference the public comment¹² we submitted to the IQOS MRTP docket that discusses this issue. PMI's response to FDA's appropriate question on this issue was not satisfactory, providing yet another reason for FDA to deny PMI's request for a MRTP marketing order. This is another way in which PMI's own data argues against granting an MRTP order.

Indeed, at its January 2018 meeting, FDA's Tobacco Products Scientific Advisory Committee (TPSAC) voted¹³ that PMI had *not* demonstrated either of its two proposed reduced

(August 5, 2019). Available at: <https://www.federalregister.gov/documents/2019/08/05/2019-16658/harmful-and-potentially-harmful-constituents-in-tobacco-products-established-list-proposed-additions>

¹⁰ Lempert LK, St.Helen G, Gotts J, et al. In addition to the 19 constituents FDA proposes to add to the list of Harmful and Potentially Harmful Constituents, FDA should also add compounds that may be carcinogenic or cause pulmonary or cardiovascular harms when inhaled, especially oils and chemicals and chemical classes found in e-cigarette flavorants, and FDA should use as additional criteria California's Proposition 65 list of carcinogens and reproductive toxicants and the California Air Resources Board's list of Toxicant Air Contaminants, Docket No. FDA-2012-N-0143 (October 2, 2019). Available at:

<https://www.regulations.gov/searchResults?rpp=25&po=0&s=1k3-9cij-8wgr>

¹¹ Philip Morris Products S.A. Modified Risk Tobacco Product (MRTP) Applications, December 20, 2019 Amendment: [Response to November 20, 2019 FDA Information Request](https://www.fda.gov/tobacco-products/advertising-and-promotion/philip-morris-products-sa-modified-risk-tobacco-product-mrtp-applications) (.zip – 54 MB) (added January 24, 2020). Available at: <https://www.fda.gov/tobacco-products/advertising-and-promotion/philip-morris-products-sa-modified-risk-tobacco-product-mrtp-applications>

¹² Matthay, MA. PMIs' mouse study demonstrates increased morbidity and mortality in mice exposed to IQOS aerosol, and PMI's December 20, 2019 response to FDA's Request for Information fails to show otherwise. Docket No. FDA-2017-D-3001 (February 3, 2020). Available at: <https://www.regulations.gov/document?D=FDA-2017-D-3001-0262>

¹³ FDA, 2018. TPSAC Meeting Materials and Information, January 24-25, 2018: Transcript Day

risk MRTP claims.

Because FDA’s own scientific assessments as well as independent analyses have demonstrated that IQOS use would not present lower risk of harm, and may in fact present different or additional harms, FDA must not issue a reduced risk order.

2. PMI’s proposed reduced exposure claim is false and misleading, so FDA must not issue a reduced exposure MRTP marketing order for IQOS.

1) PMI’s proposed blanket statement that switching from cigarettes to IQOS significantly reduces users’ exposure to harmful and potentially harmful chemicals is false and misleading because although there are only reduced levels of *some* toxins in IQOS aerosol, there are *increased levels of other toxins*.

As discussed above in section 1.(b), evidence in PMI’s MRTP application,⁴ FDA’s decision⁷ on the IQOS PMTA as well as independent analyses^{5,6} show that IQOS produced higher levels than conventional cigarettes of at least 56 toxic substances not on FDA’s original HPHC list. Also, several of the toxic substances on FDA’s proposed new list,⁹ including furfural, glycerol, glycidol, and propylene glycol, were found⁵ in much higher levels in IQOS Heatsticks than in conventional cigarettes. PMI apparently did not consider exposure to dozens of potentially toxic substances, and did not consider increased levels of toxins that FDA has proposed to add to the HPHC list.

It is false and misleading to make a blanket statement implying that IQOS exposes users to reduced levels of all harmful and potentially harmful chemicals.

2) PMI did not consider users’ exposure to toxins as IQOS would be “actually used” by consumers.

TCA section 911(g)(2)(b) explicitly requires an applicant to demonstrate for a reduced exposure MRTP order that the product “as actually used” exposes consumers to substantially reduced exposures to harmful substances. ***However, PMI did not adequately consider dual use (the likelihood that IQOS users will use conventional cigarettes (CC), e-cigarettes, and/or other tobacco products at the same time), which is the predominant use pattern.*** Therefore, FDA must not issue a reduced exposure MRTP order.

Studies PMI submitted to FDA did not support the conclusion that smokers would “switch completely” to IQOS. PMI’s Actual Use study conducted in the US (THS-PBA-07-US) measured the total number of Heatsticks/(CC +Heatsticks) used per week. They defined “dual use” as “combined use” of Heatsticks and CC when they used 30-70% Heatsticks out of the total,

2 <https://www.fda.gov/downloads/AdvisoryCommittees/CommitteesMeetingMaterials/TobaccoProductsScientificAdvisoryCommittee/UCM599235.pdf>

and considered a person who smokes CC up to 30% of the time to have “switched completely” to IQOS.¹⁴ Even using this definition, 22.4% of participants were dual users.

Using FDA’s “alternative definition of dual use” which includes “predominant use” of Heatsticks (70-95%) or CCs (5-30%), a majority (57.6%) were dual users, with only 7.5% “exclusive” Heatstick users (95-100%).¹⁴

In another “actual use” study (ZRHR-ERS-09-US) intended to demonstrate favorable changes in 8 BOPH after 6 months for those switching completely from CC to IQOS, “dual use” was defined as between 1-70% IQOS and “switching” to IQOS defined as more than 70% IQOS.¹⁵ As noted above, 30% cigarette use is dual use, not switching.

An independent analysis of PMI’s population health impact model found that dual use of IQOS with CC could lead to negative public health impacts,¹⁶ and a study of young Korean adults showed that current IQOS users were more likely to smoke CC and/or e-cigarettes, rather than switch completely to IQOS.¹⁷ FDA recognized that “dual use of IQOS and CC was common in all countries in the pre- and post-market studies”¹⁴ and “dual use of CC and IQOS appears likely.”¹⁸

IQOS users who also smoke CC, e-cigarettes, and/or other tobacco products concurrently with IQOS use will be exposed to increased, rather than decreased, toxins than if they used IQOS exclusively. ***Because such dual- or poly-use is the most likely use pattern, it is misleading, if not false, for PMI to claim that IQOS, as actually used will substantially reduce users’ exposure to toxic substances.***

3) PMI’s proposed reduced exposure claim will be misunderstood by consumers

i. PMI’s reduced exposure claim will be misunderstood to be a reduced risk claim

TCA section 911(g)(2)(B)(iii) requires MRTP applicants to demonstrate that testing of actual consumer perception show that the applicant’s proposed label and marketing will not mislead consumers into believing that the product has been demonstrated to be less harmful, or

¹⁴ FDA, PMTA Coversheet: Technical Project Lead Review (TPL), April 29, 2019, p. 72. Available at: <https://www.fda.gov/media/124247/download>.

¹⁵ FDA, PMTA Coversheet: Technical Project Lead Review (TPL), April 29, 2019, p. 80. Available at: <https://www.fda.gov/media/124247/download>.

¹⁶ Max WB, Sung HY, Lightwood J, *et al.* Modelling the impact of a new tobacco product: review of Philip Morris International’s Population Health Impact Model as applied to the IQOS heated tobacco product. *Tob Control* 2018;**27**(Suppl 1):s82-s86.

¹⁷ Kim J, Yu H, Lee S, *et al.* Awareness, experience and prevalence of heated tobacco product, IQOS, among young Korean adults. *Tob Control* 2018;**27**(Suppl 1):s74-s77.

¹⁸ FDA, PMTA Coversheet: Technical Project Lead Review (TPL), April 29, 2019, p. 73. Available at: <https://www.fda.gov/media/124247/download>.

presents less risk of harm. PMI's submitted consumer perception studies did not meet this burden.

Interview and survey studies submitted by PMI on consumer perception suggest that consumers in the US perceive reduced exposure claims as reduced risks claim. This poses a concern in line with historically deceptive marketing of "light" and "mild" cigarettes, now not allowed in the US.¹⁹ After interviewing young adult poly-tobacco users in the SF Bay Area interacting with a Canadian version of IQOS, we found that even without reduced risk claims, some participants made inferences that IQOS is better for their health than smoking cigarettes, referring to the "stop burning" or "no smoke" parts of the claims.²⁰

ii. Consumers will interpret PMI's reduced exposure claim in the context of and relative to e-cigarettes

In its application, PMI did not consider how current ENDS users would interpret the proposed claims.

This is important because there is evidence that IQOS shows higher cytotoxicity of bronchial epithelial cells than an e-cigarette.²¹ This information raises the possibility that any current e-cigarette user (youth or adults) who initiates use of IQOS may experience *greater* harm and risk of tobacco-related disease. The FDA should not authorize PMI's MRTP order for IQOS without detailed knowledge of the relative harms of heated tobacco products (e.g., IQOS) vs. e-cigarettes as well as how e-cigarette users will respond.

It is entirely plausible that a significant number of e-cigarette users will use IQOS:

- No e-cigarette product has been authorized for sale in the U.S., let alone authorized to make reduced exposure or reduced risk claims (nor should such an authorization be granted unless the manufacturers demonstrate with scientific evidence that such a marketing order would be *appropriate to promote the public health*). If PMI is permitted to make MRTP claims for IQOS, consumers could reasonably assume IQOS is less harmful than e-cigarettes.
- The 2019 outbreak of EVALI has raised concerns about the harms of e-cigarettes among consumers and may make IQOS relatively more attractive, a factor that would be amplified should PMI be permitted to make MRTP claims.

¹⁹ Popova L, Lempert LK, Glantz SA. Light and mild redux: heated tobacco products' reduced exposure claims are likely to be misunderstood as reduced risk claims. *Tobacco Control* 2018;27:s87-s95.

²⁰ Kim, Watkins, Kim, Harvanko, Koester, Mock, Olson, & Ling. Unboxing IQOS: US young adult poly-tobacco users' responses to Philip Morris' new heated tobacco product. SRNT annual conference, New Orleans, LA, March 2020.

²¹ Leigh NJ, Tran PL, O'Connor RJ, Goniewicz ML. Cytotoxic effects of heated tobacco products (HTP) on human bronchial epithelial cells. *Tob Control* 2018;27:s26-s29.

- The FDA enforcement policy²² describing how FDA intends to prioritize enforcement regarding the marketing of certain flavors of unauthorized cartridge-based e-cigarettes may also make IQOS relatively more attractive to ENDS users.

d) PMI’s labeling and marketing strategies may mislead youth and renormalize smoking

- i. PMI’s labeling and marketing claims may mislead youth to believe that IQOS is less harmful, and may entice youth to try, and continue using, IQOS**

*PMI’s own studies failed to provide evidence that youth, including non-users and former users, will not find IQOS appealing, will not initiate using IQOS, and will not perceive these products as risk-free.*²³

In a recent independent study,²⁴ it was shown that youth presented with the IQOS reduced risk and reduced exposure claims perceived lower likelihood of experiencing specific harms associated with using IQOS compared to control youth not exposed to either claim, as well as significantly less overall harm when exposed to the reduced risk claim. Further, about 30% of the youth in the study did not understand what “switch completely” meant, believing that the term meant that using tobacco products other than cigarettes with IQOS is ok.

Experiences with e-cigarettes demonstrates that youth are attracted to new tobacco products, especially those marketed with any real or implied perceived risk or cessation claim. For example, youth exposed to e-cigarette ads with explicit cessation claims and to a lesser extent implicit cessation claims were able to identify that the purpose of the ad was to “help me quit smoking regular cigarettes,” regardless of the validity of the claim.²⁵ As such, there is real concern that youth will again misunderstand claims being made for IQOS.

- ii. PMI’s marketing strategies make IQOS appealing to youth and renormalize smoking**

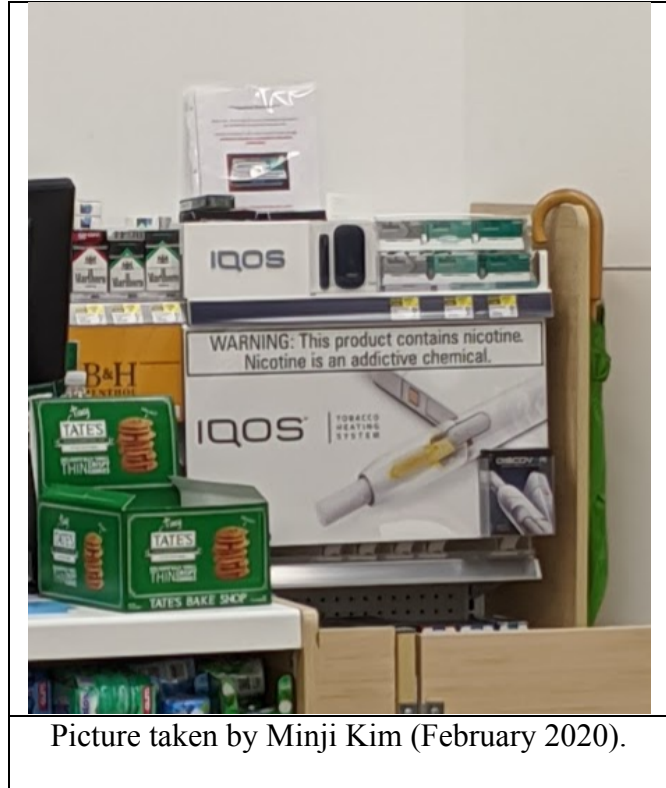
²² FDA Center for Tobacco Products. Enforcement Priorities for Electronic Nicotine Delivery System (ENDS) and Other Deemed Products on the Market Without Premarket Authorization, Guidance for Industry, January 2020. Available at <https://www.fda.gov/regulatory-information/search-fda-guidance-documents/enforcement-priorities-electronic-nicotine-delivery-system-ends-and-other-deemed-products-market>

²³ McKelvey K, Popova L, Kim M, et al. Heated tobacco products likely appeal to adolescents and young adults. *Tobacco Control* 2018;27:s41-s47

²⁴ McKelvey, K., Baiocchi, M., Halpern-Felsher, B. Could PMI’s heat-not-burn tobacco products marketing claims of reduced risk and exposure burn adolescents and young adults. *Tobacco Control*. In press.

²⁵ Kim, M., Ling, PM., Ramamurthi, D., Halpern-Felsher, BL. Youth’s perceptions of e-cigarette advertisements with cessation claims. *Tobacco Regulation Science*. 2019;5(2):94-104.

In what business analysts considered “perfect timing,”²⁶ Altria launched PMI’s IQOS in Atlanta in October 2019, coinciding with public concerns over a national outbreak of a deadly lung disease (e-cigarette or vaping product use-related lung injuries, EVALI) and with local and federal regulation limiting the sales of flavored e-cigarette products. Because of these factors, youth and young adults who are looking for a “safer” alternative to e-cigarettes, including JUUL, might be attracted to IQOS, even though FDA has not authorized PMI to market IQOS as “safer than e-cigarettes.” Indeed, in its MRTP application, PMI only compared IQOS to conventional cigarettes, and did not compare the health effects of IQOS to e-cigarettes.



Picture taken by Minji Kim (February 2020).

IQOS is marketed emphasizing its “clean” and “high-tech” aspects compared to regular cigarettes, with packaging and store design that resembles those of iPhone or other high-end electronic devices.^{27, 28} In a drugstore in Atlanta, IQOS Heatsticks are displayed next to the cigarettes, but more saliently promoted with a large picture of device as well as a model of device even though the device is not sold in the store (photo).

A ten-month study²⁹ of IQOS marketing and promotion by researchers at Stanford University published on February 21, 2020 showed that PMI has adopted strategies to market

²⁶ LaVito A. Altria launches IQOS tobacco device in US, and the timing couldn’t be better. In. Health and Science: CNBC, 2019. Available: <https://archive.ph/l4E4k> [Accessed Oct 2019]; Lee J. It’s not vaping: why IQOS could boost Altria and Philip Morris. The Motley Fool, 2019. Available: <https://archive.ph/uDBJw> [Accessed Oct 2019]. Maloney J, Prang A. Philip Morris sees a bright side to vaping fears, 2019. Available: <https://archive.ph/CYTO4> [Accessed Oct 2019].

²⁷ Kim, M. Philip Morris International Introduces New Heat-not-burn Product, IQOS, in South Korea. *Tobacco Control*, 27(e1), e76-e78.

²⁸ Churchill V, Weaver SR, Spears CA, et al. IQOS debut in the USA: Philip Morris International’s heated tobacco device introduced in Atlanta, Georgia. *Tobacco Control* Published Online First: 05 February 2020. doi: 10.1136/tobaccocontrol-2019-055488

²⁹ Robert K. Jackler, MD Divya Ramamurthi, MS Ariel K. Axelrod, et al., Stanford Research into the Impact of Tobacco Advertising. Global Marketing of IQOS: The Philip Morris

IQOS across the globe that mimic the tobacco industry's playbook from the mid-20th century that glamorized smoking, including liberal use of artists, musicians, social media influencers, and celebrities in promotional roles. PMI has promoted IQOS as a smoking cessation device, as healthier or healthy, and as an elegantly fashionable lifestyle product, using events, social media, and influencers and celebrities.²⁹ PMI launched its "Foundation for a Smoke-Free World" in September 2017 purportedly to support tobacco harm reduction by promoting alternatives to cigarettes. However, rather than focusing on smoking cessation, PMI's "unsmoked campaign" promotes IQOS as an alternative nicotine delivery system while continuing to market Marlboro cigarettes while actively undermining policies intended to reduce cigarette use²⁹

Collectively, PMI's IQOS promotions are part of a strategy by Philip Morris to renormalize smoking and "to scrub its image as a purveyor of cancer-causing cigarettes and present its new smoking alternatives as youthful, upscale lifestyle products."³⁰ *Granting an MRTP for IQOS could allow PMI to use IQOS to reproduce the e-cigarette epidemic among youth that accelerated following the introduction of JUUL.*

Conclusions:

FDA should not authorize Philip Morris International to market IQOS with claims of reduced risk or reduced exposure for the following reasons:

- 1) PMI's proposed reduced risk MRTP claims for IQOS are not supported by the data
- 2) Both the FDA's and independent analyses of PMI's own data concluded that IQOS affects clinical measures of health in humans similarly to conventional cigarettes
- 3) PMI's data showed and FDA acknowledged that IQOS aerosol may present toxicological risks for users, demonstrating that IQOS use would not present lower risk of harm, and may in fact present different or additional harms
- 4) PMI's proposed reduced exposure claim is false and misleading
- 5) PMI's proposed blanket statement that switching from cigarettes to IQOS significantly reduces users' exposure to harmful and potentially harmful chemicals is false and misleading because although there are only reduced levels of *some* toxins in IQOS aerosol, there are *increased levels of other toxins*
- 6) PMI did not consider users' exposure to toxins as IQOS would be "actually used" by consumers
- 7) PMI's proposed reduced exposure claim will be misunderstood by consumers to be a reduced risk claim
- 8) Consumers will interpret PMI's reduced exposure claim in the context of and relative to ENDS
- 9) PMI's labeling and marketing claims may mislead youth to believe that IQOS is less harmful, and may entice youth to try, and continue using, IQOS

Campaign to Popularize "Heat Not Burn" Tobacco. February 21, 2020. Available at: <http://tobacco.stanford.edu/iqosanalysis>

³⁰ Kirkham C, Reuters. Inside the Philip Morris campaign to 'normalize' a tobacco device, February 21, 2020. <https://www.reuters.com/article/us-philipmorris-international-iqos-insig/inside-the-philip-morris-campaign-to-normalize-a-tobacco-device-idUSKBN20F1Q7>

10) PMI's marketing strategies make IQOS appealing to youth and renormalize smoking.

Because PMI's MRTP application for IQOS failed to meet the statutory requirements for either its reduced risk or its reduced exposure claims, FDA must reject PMI's MRTP application and not issue a marketing order for any of PMI's proposed MRTP claims for IQOS.