



立法會

《2019年吸煙(公眾衛生)(修訂)條例草案》

法案委員會主席

黃定光議員

黃主席：

### 關於2021年6月25日會議席上 所提出關注事項的跟進工作

政府當局早前向本委員會提交立法會 CB(2)1198/20-21(02)號的文件，就委員提出的關注事項作出回應。文件引述加熱煙製造商向美國食品及藥物監督管理局提交的數據，指出有「80種化學物質屬加熱煙氣霧中獨有，或比傳統捲煙煙霧有較高濃度」。

當局引用數據的來源是美國食品及藥物監督管理局（FDA）就一種加熱煙產品的審查報告。本人在6月25日的會議上已指出，當局的回應文件並不全面，有混淆視聽之嫌，其中完全沒有提到報告的結論是該產品「適合於保護公共衛生」<sup>1</sup>（appropriate for the protection of the public health），基於此結論，FDA批准該產品在美國上市。FDA報告亦清楚指出，雖然加熱煙產品釋出的部分化學物質具有毒性，「但這些化學物質的含量非常低，且有害或潛在有害成分（HPHC）的種類和水平均大幅低於傳統香煙，因此足以抵消這些物質的潛在影響」<sup>2</sup>，但當局的回應文件以及在會議上回應議員質詢時均沒有指出以上要點，本人對此表示遺憾及失望。

顯然，當局忽略FDA報告提及的關於加熱煙「適合於保護公共衛生」的大量證據，而選擇性羅列加熱煙釋出的物質以支持其「全禁」加熱煙的極端政策，此舉可能會對議員及公眾造成誤導。

本人在會議上已經指出幾個重點，詳見如下：<sup>3</sup>

1. FDA在報告中，清楚分析了加熱煙IQOS所含80種化學物質，其中30種是安全物質，46種是添加物質（大部分為香料），只有4種是可能致癌物質。（註：請見附件32頁第一段原文：4 are possibly carcinogenic, 30 are identified by the applicant as Generally Recognized as Safe (GRAS), and 46 additional ingredients (mostly flavoring ingredients)）

<sup>1</sup> FDA. PMTA Technical Project Lead Review (p.32). Available at <https://www.fda.gov/media/124247/download>

<sup>2</sup> FDA. PMTA Technical Project Lead Review (p.11). Available at <https://www.fda.gov/media/124247/download>

<sup>3</sup> FDA. PMTA Technical Project Lead Review (p.32). Available at <https://www.fda.gov/media/124247/download>

2. 事實上，當局文件中提及「80種化學物質屬加熱煙氣霧中獨有，或比傳統捲煙煙霧有較高濃度」這一句子，正正取自於FDA文件中32頁第一段的第二行的分析，而明顯地接著下去第三行及第四行亦說明內裡76種物質都分別是安全及添加香料，但當局似乎有意沒有將此說明納入回應文件中，不禁令人疑惑當局是否有以偏蓋全之嫌。
3. 在FDA文件32頁第二段中也表明4種可能致癌物質中，並不構成毒理學問題，因為水平低於公認的飲食或職業暴露限制。而當局在回應文件中對此說明亦隻字不提。  
(註：請見附件32頁第二段原文：four possible carcinogens (glycidol, 3-chloro-1,2-propanediol [3-MCPD], 2-furanmethanol, and furfural) do not pose a toxicological concern because the levels are below recognized dietary or occupational exposure limits)
4. 正如本人在會議上指出，據了解，以上被FDA視為在IQOS中水平含量低的4種可能致癌物質中，其中glycidol是在很多酒類產品都含有的物質，而2-propanediol [3-MCPD], 及2-furanmethanol, 和furfural亦是添加食品或添加飲品中的常見物質；如果上述幾種均為日常食品中常見，當局為何避而不談？
5. 另外，非常重要的是，FDA的文件中兩次提及加熱煙產品「符合保障公眾健康」（分別在第32頁第三段第11行至第14行及第四段第12行至第15行），清楚表明，沒有結論指加熱煙IQOS對使用者完全無風險，但是，接觸可能致癌物質的水平為低，如果與其他數據一起考慮，絕不能排除產品「符合保障公眾健康」的結論。  
(註：請見附件32頁第三段原文：The explanation provided by the applicant does not support a conclusion that these pose no risk to IQOS users; however, the levels of exposure to these possible carcinogens appear low and when considered with other data does not preclude a conclusion the products are appropriate for protection of public health.)  
(註：請見附件32頁第四段原文：The data provided by the applicant is not sufficient to support their conclusion that these compounds pose no risk to IQOS users; however, although there is potential for genotoxicity with some of these compounds, the exposure levels appear low and the available data does not preclude a conclusion the products are appropriate for protection of public health.)

有見及此，謹請主席代為向當局轉達本人的以下要求：就當局引述的 FDA 審查報告，向本會提交完整資料，特別是有關 FDA 闡述 80 種化學物質相關的分析及結論，需以完整全面的原則為依歸，將相關內容提交給委員會了解。

本人相信以上資料對於權衡《條例草案》的利弊至關重要，除非有強烈證據顯示加熱煙的危害性大於傳統香煙，否則「全禁」加熱煙是不合邏輯的。

法案委員會委員

A handwritten signature in black ink, appearing to read '邵家輝' (Shou Ka-hui), written in a cursive style.

邵家輝謹啟

2021 年 7 月 12 日

連附件

The statute provides that the finding as to whether the marketing of a product for which a PMTA is submitted would be appropriate for the protection of the public health shall be determined with respect to the risks and benefits to the population as a whole, including users and nonusers of the tobacco product, and taking into account –

- (A) the increased or decreased likelihood that existing users of tobacco products will stop using such products; and
- (B) the increased or decreased likelihood that those who do not use tobacco products will start using such products.

Scientific review of these applications has demonstrated the following:

- There are adequate process controls and quality assurance procedures to help ensure the IQOS Holder, IQOS Charger, Marlboro Heatsticks, Fresh Menthol Heatsticks, and Smooth Menthol Heatstick are manufactured consistently to meet the applicant's specifications.
- Marlboro, Smooth Menthol, and Fresh Menthol Heatstick aerosols contain some chemicals which are different from those found in combusted cigarettes (CC).<sup>6</sup> Although some of the chemicals are genotoxic or cytotoxic, these chemicals are present in very low levels and potential effects are outweighed by the substantial decrease in the number and levels of HPHCs found in CC (see below).
- The toxicological profiles of Marlboro, Smooth Menthol, and Fresh Menthol Heatsticks are essentially identical except for the quantity of menthol. The available toxicological data indicates the potential for a relative benefit compared to CC for smokers who switch completely to IQOS.
- Smooth Menthol Heatsticks contain 6.98 mg menthol/Heatstick. Fresh Menthol Heatsticks contain 13.23 mg menthol/Heatstick. The applicant compared this to 23 mentholated cigarette brands in the U.S. which had 2.9-19.5 mg menthol/cigarette.
- PK studies show Marlboro, Smooth Menthol, and Fresh Menthol Heatsticks have nicotine delivery, addiction potential, and abuse liability similar to CC. This is potentially beneficial for smokers trying to switch to IQOS as they are more likely to have satisfactory results and not resume CC smoking. The nicotine levels do pose an addiction risk for non-tobacco users who initiate use of these products; however, the risk is no higher than for other, currently available, tobacco products and initiation is expected to be low generally. (See also the discussion regarding the inclusion of a nicotine addiction warning below.)
- The 5-day studies demonstrate improved biomarkers of exposure (BOE) which indicates reduced HPHC exposures. These improvement trends persisted in the 90-day studies despite reduced compliance and use of other tobacco products. Additionally, the applicant recently submitted data from a six-month clinical trial which demonstrated reduction in eight BOE as well as NNAL and COHb for self-reported users of IQOS compared to CC users.  
Although the studies conducted by the applicant do not demonstrate reduction in long-term disease risks, the currently available evidence indicates CC smokers who switch completely to IQOS will have reduced toxic exposures and this is likely to lead to less risk of tobacco-related diseases. The data for CC smokers who use IQOS while continuing to smoke (dual use) is less clear but the available evidence shows no increase in HPHC exposures for those who dual use.
- There have been no specific, short-term health-related or product quality issues unique to IQOS in the clinical studies, the current world-wide markets, or the published literature.
- Misuse of IQOS is uncommon and the product design makes it unlikely users will have a satisfactory experience (e.g., no significant nicotine is delivered with reusing a Heatstick).
- Dual use of IQOS and CC was common in all countries in the pre- and post-market studies though the CC users in the U.S. actual use study who switched to exclusive IQOS use during the study remained

<sup>6</sup> For the purposes of this review CC=combusted cigarette(s) or conventional cigarette(s)



### *b. Constituents Unique to IQOS*

The non-targeted differential screening of Heatstick aerosols and 3R4F cigarette smoke found 80 chemicals that were either present in higher concentration in Heatstick aerosols than 3R4F smoke or not found in 3R4F smoke: 4 are possibly carcinogenic, 30 are identified by the applicant as Generally Recognized as Safe (GRAS), and 46 additional ingredients (mostly flavoring ingredients).

The applicant indicates the four possible carcinogens (glycidol, 3-chloro-1,2-propanediol [3-MCPD], 2-furanmethanol, and furfural) do not pose a toxicological concern because the levels are below recognized dietary or occupational exposure limits. The applicant provided the following toxicological assessments:

- Comparison against occupational exposure limits (OELs)
- Use of OSHA's Permissible Exposure Limit (PEL) as a standard for some exposures
- Compared the exposure from IQOS aerosol for the four chemicals to maximum dietary intake

The assessment of these carcinogens is not considered adequate. Comparison of estimated exposures from use of tobacco products to OELs is not appropriate for a risk assessment of chemicals found in tobacco product smoke and aerosols. OELs are not health values and are not intended for use to evaluate potential health hazards from inhaled tobacco products. OSHA PELs are intended for a specific scenario in the workplace including exposure during an 8-hour work shift within a 40-hour work week. PELs are also intended to be used together with proper engineering controls (e.g., monitoring the work environment, application of feasible technological controls) and good work practices (e.g., wearing respirators) to minimize hazardous substance generation and exposure. Extrapolation of risk from dietary exposure to determine risk from inhalation is inappropriate, as the most sensitive effects and target organs drastically differ depending on whether a toxicant is ingested or inhaled. Extrapolation from dietary limits for inhalation exposure ignores differences in toxicokinetics or distinct effects at the portal of entry. The explanation provided by the applicant does not support a conclusion that these pose no risk to IQOS users; however, the levels of exposure to these possible carcinogens appear low and when considered with other data does not preclude a conclusion the products are appropriate for protection of public health.

Initially the applicant did not provide any analysis of the GRAS compounds. In response to a request for additional information, the applicant provided predictive toxicology modeling and available toxicological data for 30 chemicals present in higher levels in Heatstick aerosol compared to 3R4F smoke. Four of the 30 chemicals have known respiratory effects (irritation, sensitization, respiratory depression) and one has potential to influence nicotine metabolism. For other chemicals, toxicological data via the inhalation route is not available and their individual contributions in inhalation toxicology are unknown. Genotoxicity and carcinogenicity information for many of these chemicals is not available. The applicant analyzed all 30 chemicals with the OECD quantitative structure-activity relationship (QSAR). Eleven chemicals were identified with genotoxic potential. Based on the available toxicological data and predictive toxicology modeling analysis submitted by the applicant, 20 of the 30 chemicals exhibit concerns for potential health effects. Many of the chemicals do not have sufficient inhalation toxicity or genotoxicity/carcinogenicity data to inform the toxicological evaluation of heated tobacco products. The data provided by the applicant is not sufficient to support their conclusion that these compounds pose no risk to IQOS users; however, although there is potential for genotoxicity with some of these compounds, the exposure levels appear low and the available data does not preclude a conclusion the products are appropriate for protection of public health.

The applicant analyzed the remaining 46 chemicals (primarily flavor ingredients) with the OECD QSAR Toolbox to detect structural alerts for DNA binding or carcinogenicity. Of these 46 chemicals, 8 were identified as potentially genotoxic and/or carcinogenic. Along with the 11 noted above, the applicant