

# Reduced-Risk Products Science Update

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## Forward-Looking Statements

This presentation contains forward-looking statements. These statements appear in a number of places in this document and include statements regarding the intent, belief, or current and future expectations of our management with respect to our business, financial condition and results of operations. In some cases, you can identify forward-looking statements by terms such as "may", "will", "should", "would", "expect", "intend", "project", "plan", "aim", "seek", "target", "anticipate", "believe", "estimate", "predict", "potential" or the negative of these terms or other similar terminology. These statements are not guarantees of future performance and are subject to various risks and uncertainties. Actual results, performance or achievements, or those of the industries in which we operate, may differ materially from any future results, performance or achievements expressed or implied by these forward-looking statements. In addition, these forward-looking statements are necessarily dependent upon assumptions, estimates and data that may be incorrect or imprecise and involve known and unknown risks and uncertainties. Forward-looking statements regarding operating results are particularly subject to a variety of assumptions, some or all of which may not be realized.

Risks, uncertainties or other factors that could cause actual results to differ materially from those expressed in any forward-looking statement include, without limitation:

- (1) increase in awareness of health concerns related to smoking;
- (2) regulatory developments; including, without limitation, tax increases and restrictions on sales, marketing, packaging, labeling and use of tobacco products, privately imposed restrictions and governmental investigations;
- (3) litigation around the world alleging adverse health and financial effects resulting from, or relating to, tobacco products;
- (4) our ability to further diversify our business beyond the traditional tobacco industry;
- (5) our ability to successfully expand internationally and make investments outside Japan;
- (6) competition and changing consumer preferences;
- (7) our ability to manage impacts derived from business diversification or business expansion;
- (8) economic, regulatory and political changes, such as nationalization, terrorism, wars and civil unrest, in countries in which we operate;
- (9) fluctuations in foreign exchange rates and the costs of raw materials; and
- (10) catastrophes, including natural disasters.

This presentation contains images of our products in some slides. Those slides have been included exclusively to illustrate JT Group's strategy or performance to our investors. They are not to be used for any other purpose.

## Science is central to our RRP business

*Multi-disciplinary expertise & international collaboration*



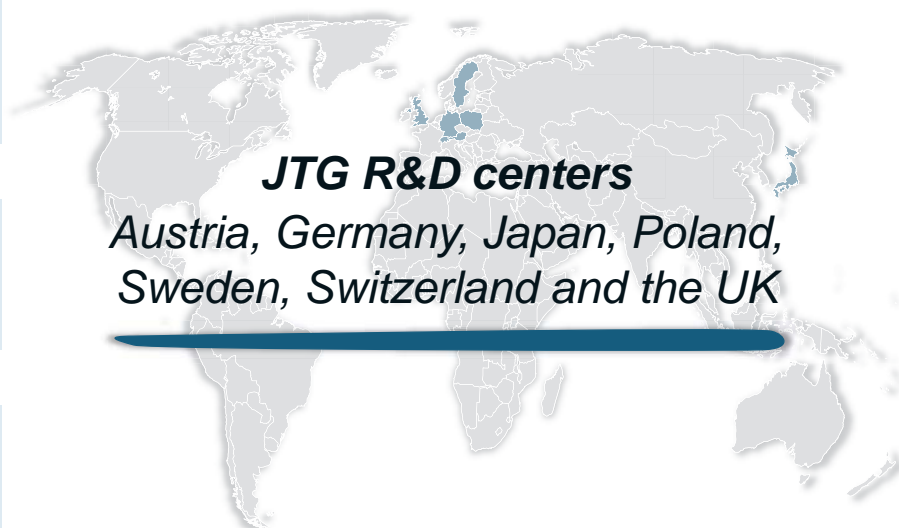
**Fundamental  
Research**



**Applied  
Science**

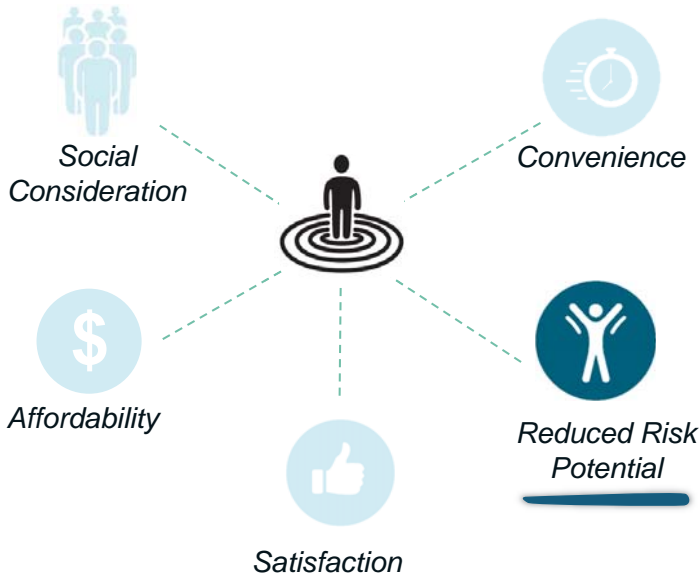


**Reduced-Risk  
Assessment**



## Broadening spectrum of consumer needs

*Focus on Reduced-Risk potential*



**Consumers** are increasingly interested in experiences and products that address a **broadening spectrum of personal and social needs**

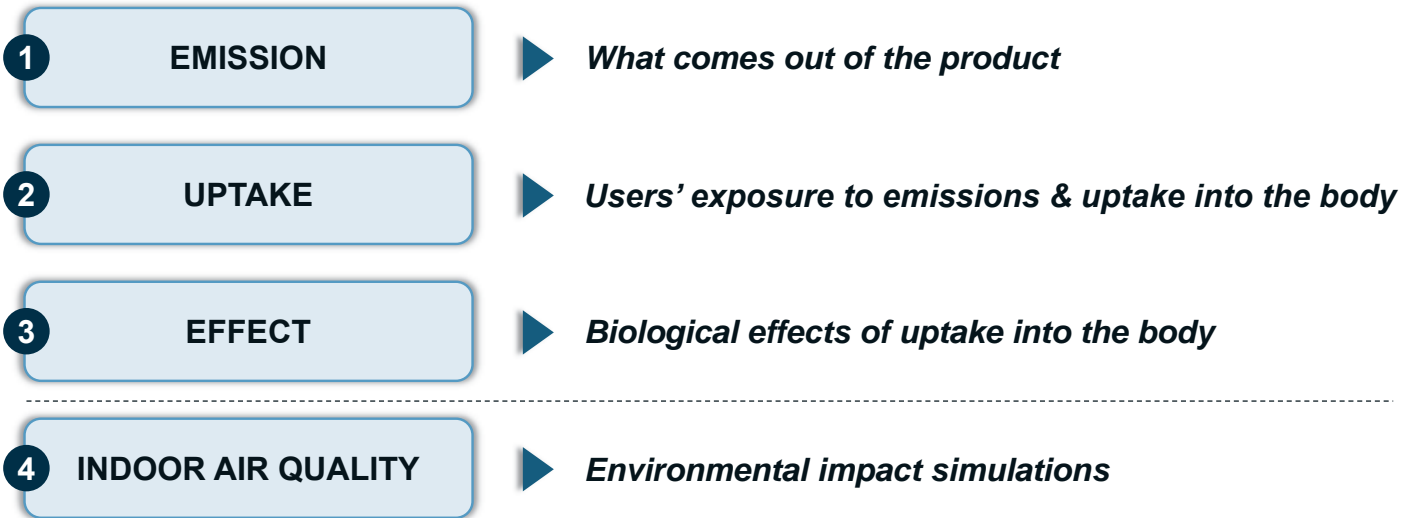
## Combining risk-reduction potential & product acceptance

*To fulfill the Harm Reduction equation*



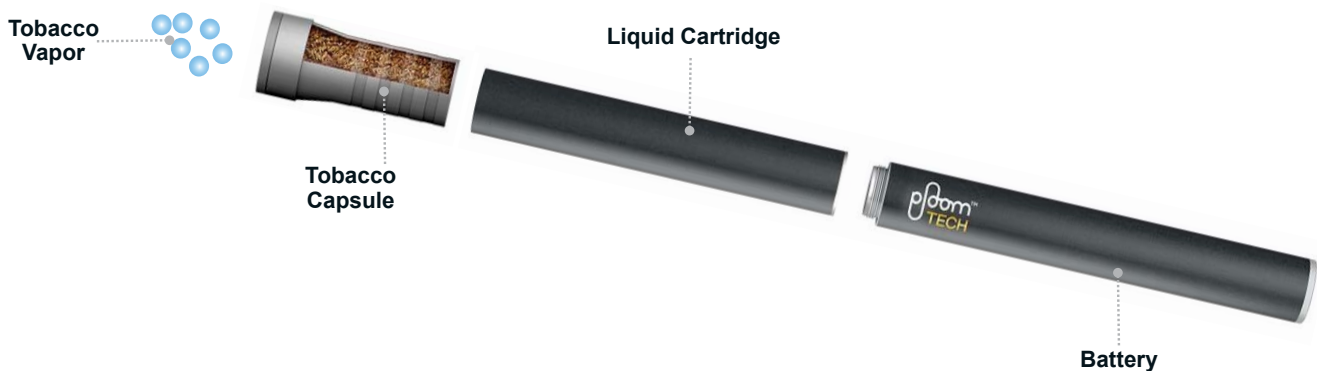
# The JT Group approach to assessment of RRP

*The emission is our starting point*



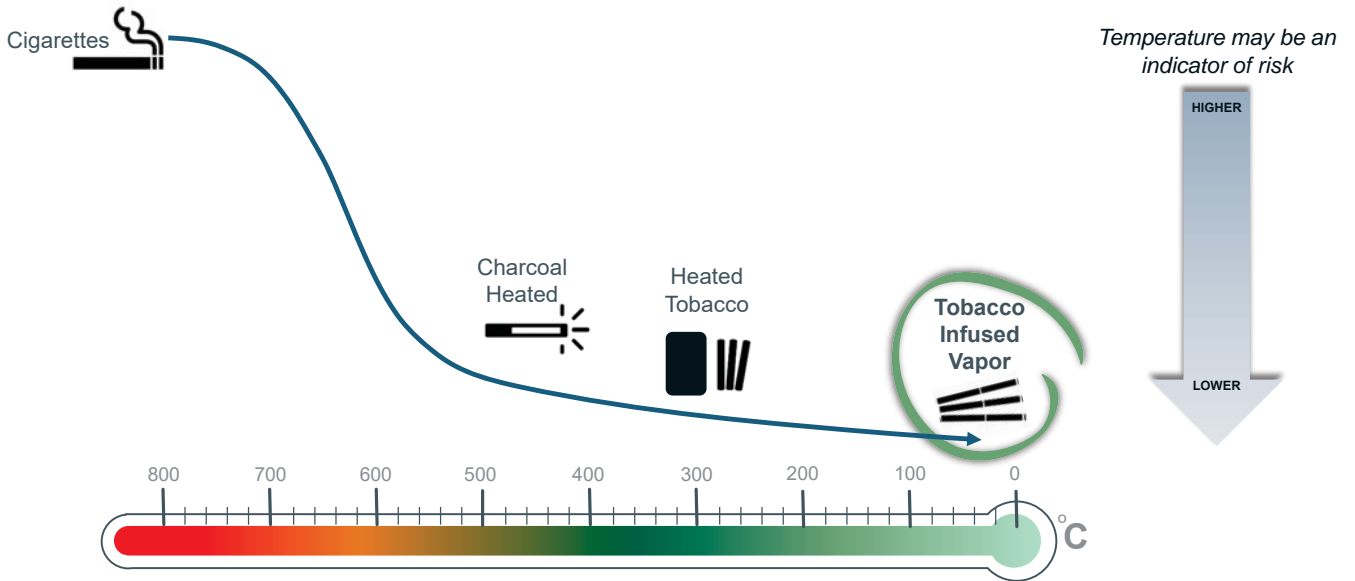
# Tobacco Infused Vapor

*How Ploom TECH works*



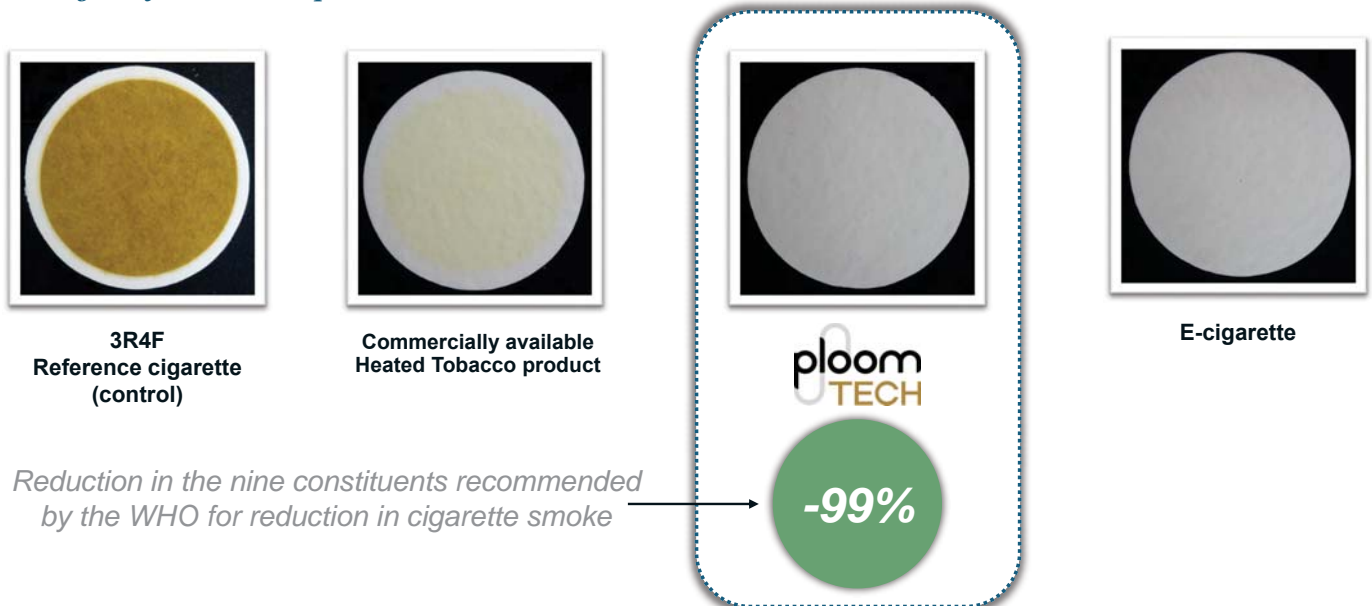
# 1 Emission | The risk cliff concept

## Potential risk-reduction in T-Vapor products



# 1 Emission | Dramatically reduced levels of TPM in Ploom TECH

## Analysis of smoke & vapor constituents



## 2 Uptake | Clinical study design

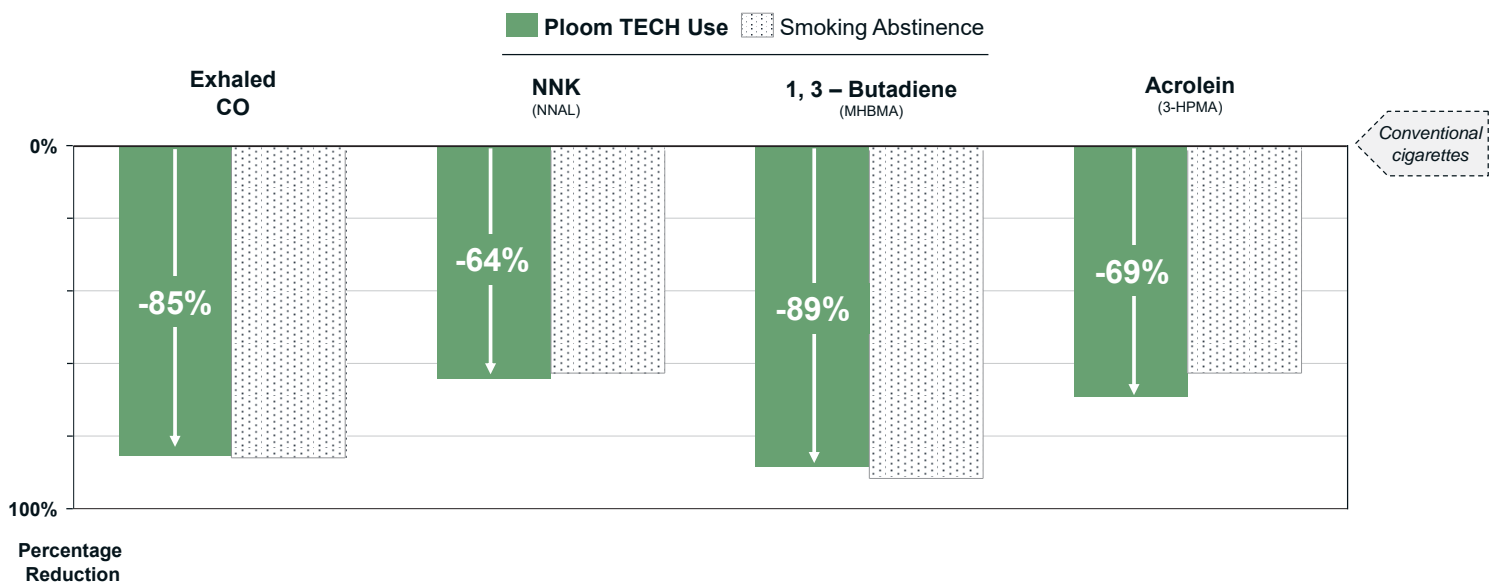
### Biomarkers of exposure



The subjects used products *ad libitum* for 5 days

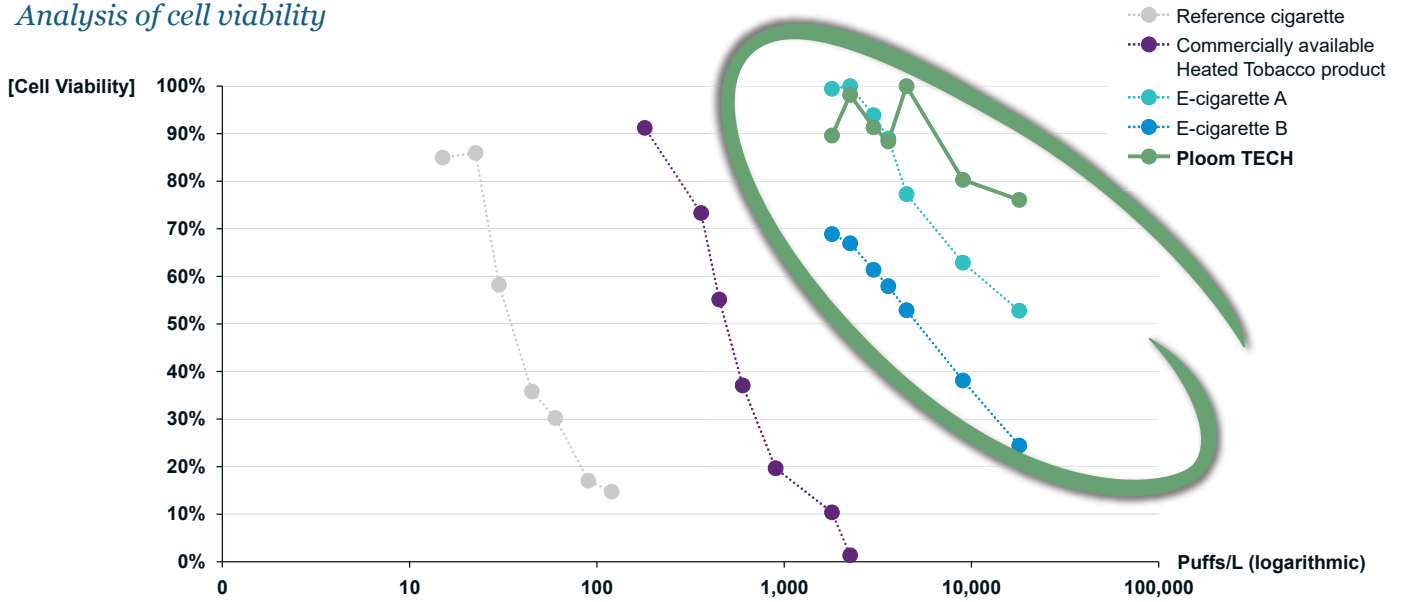
## 2 Uptake | Reductions similar to smoking abstinence

### Biomarkers of exposure



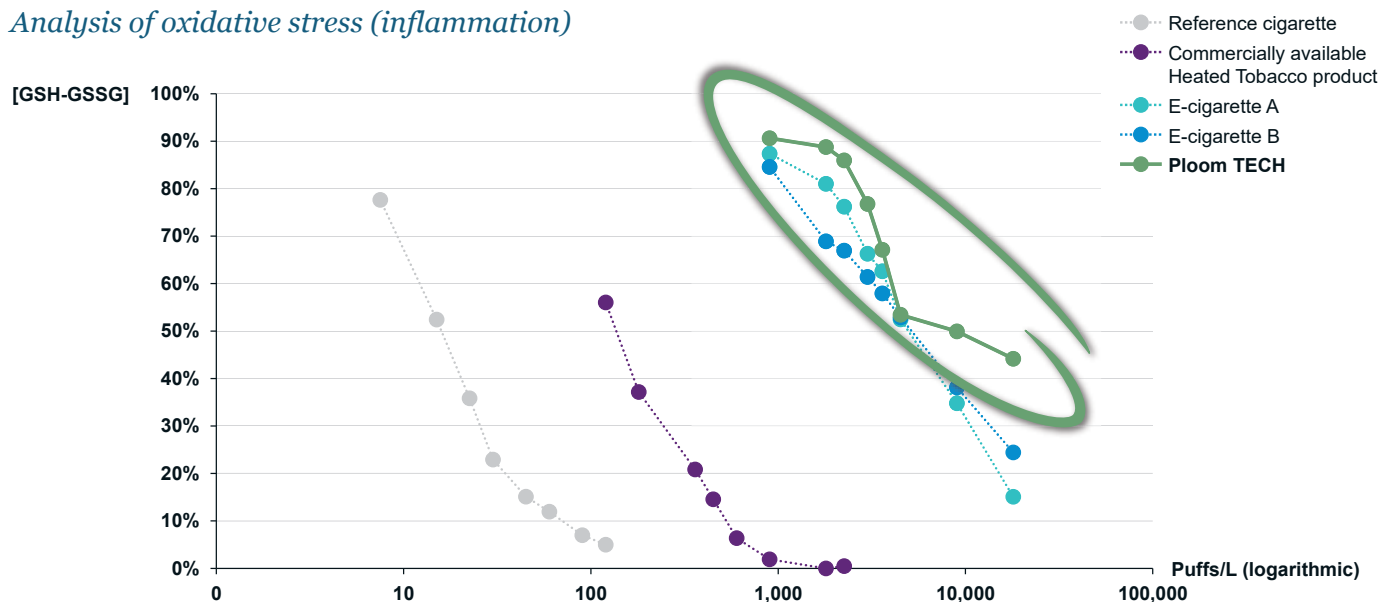
### 3 Effect | Less biological impact compared to smoking

#### Analysis of cell viability



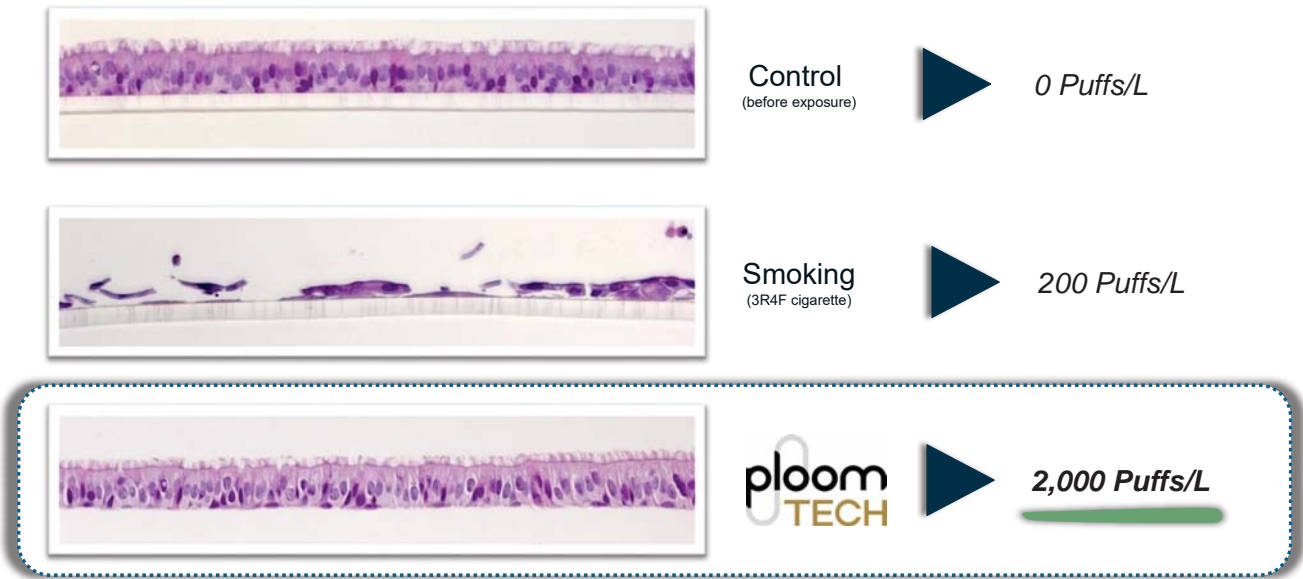
### 3 Effect | Less biological impact compared to smoking

#### Analysis of oxidative stress (inflammation)



### 3 Effect | Observably less effect on tissue model, even at 10 times more puffs

#### In vitro airway model



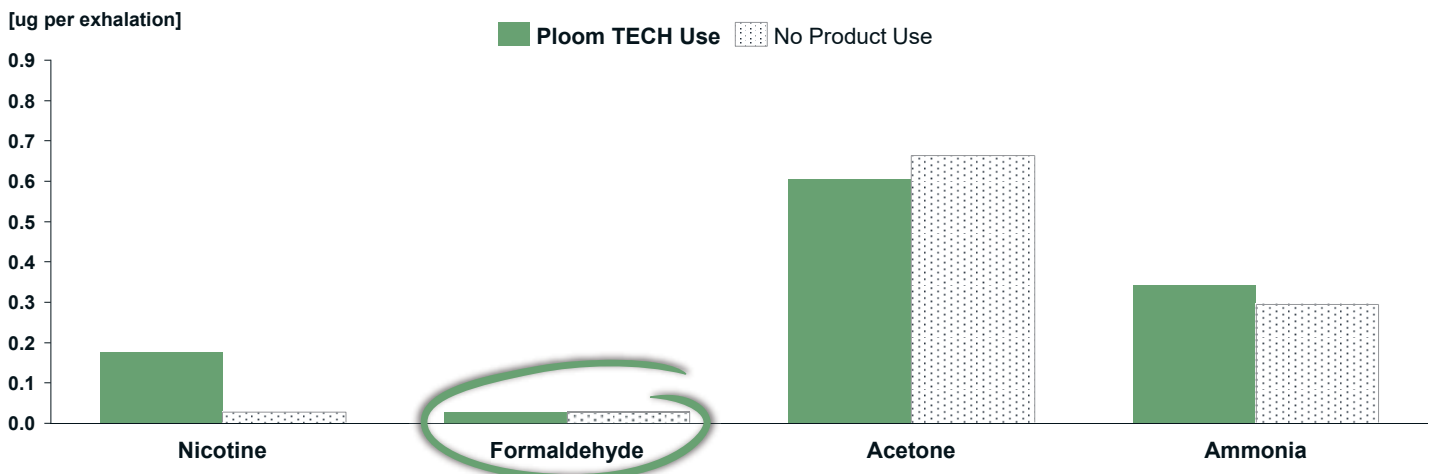
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Reference: Internal JT Group Studies.

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### 4 Indoor Air Quality | Minimal impact

#### Exhaled breath analysis



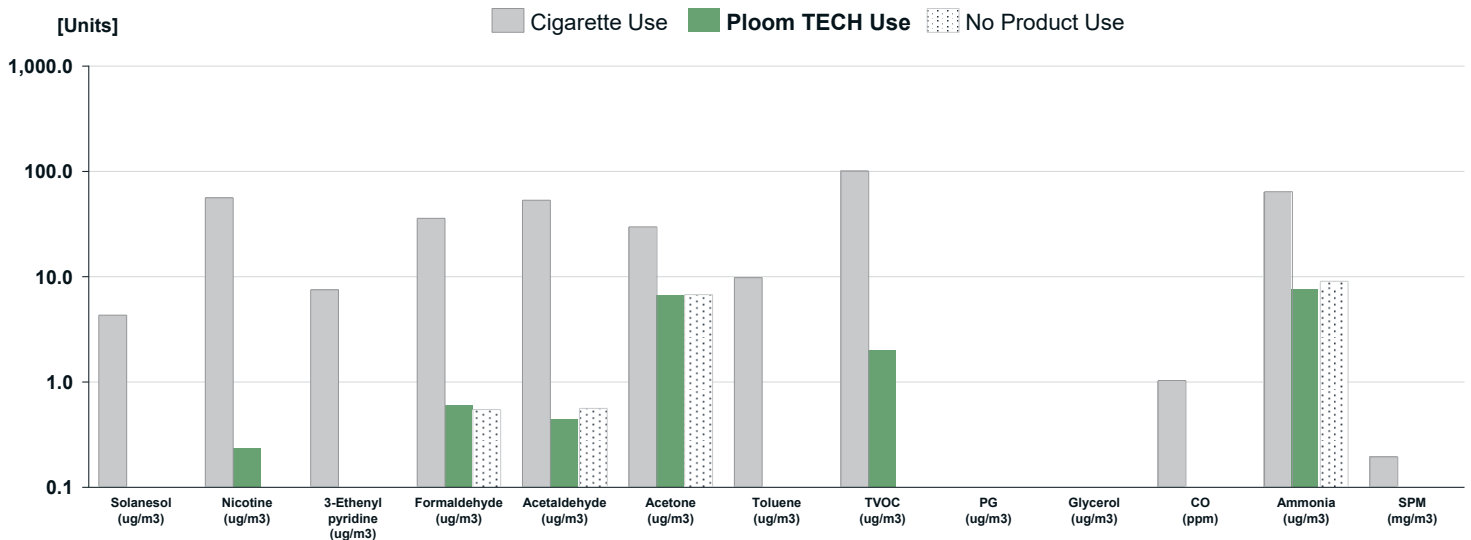
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Reference: H. Ichitsubo and M. Kotaki, 2018. Indoor air quality (IAQ) evaluation of a Novel Tobacco Vapor (NTV) product. Regul Toxicol Pharmacol. 92, 278-294.

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## 4 Indoor Air Quality | Minimal impact

### Simulation of an occupied smoking lounge



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Reference: H. Ichitsubo and M. Kotaki, 2018. Indoor air quality (IAQ) evaluation of a Novel Tobacco Vapor (NTV) product. Regul Toxicol Pharmacol. 92, 278-294.

## Positive scientific results to date

### Summary of Reduced-Risk potential

- 1 EMISSION ✓
- 2 UPTAKE ✓
- 3 EFFECT ✓
- 4 INDOOR AIR QUALITY ✓



*Our scientific assessments on Ploom TECH are providing very encouraging results, highlighting its strong Reduced-Risk potential*

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