Tobacco policy in Taiwan

Tobacco Hazards Prevention and Control Act Amendment Bill

Comment on proposed amendment to prohibit e-cigarettes

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Tobacco Hazards Prevention and Control Act Amendment Bill
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Tobacco Hazards Prevention and Control Act Amendment Bill

The government of Taiwan is seeking comments on its proposals to amend the Tobacco Hazards Prevention and Control Act (TWCA) of 1997. While we are supportive of many of the proposed amendments, we wish to comment specifically on the proposal to prohibit the manufacture, import, sale or display of e-cigarettes as part of Article 14 of the Amendment Bill. We strongly urge the government of Taiwan not to implement this measure.

1 Smoking prevalence in Taiwan is high and rising

The prevalence of smoking in Taiwan is reported at 17.1 percent (29.9 percent among men and 4.2 percent among women). This translates into a smoking population of 3.27 million in 2015, an increase of 170,000 from the previous year. Both male and female smoking prevalence increased by 0.7 percentage points between 2014 and 2015. This represents a serious and worsening public health threat. The smoking rate among men rose from 29.2 percent in 2014 to 29.9 percent in 2015, while the rate among women increased from 3.5 percent to 4.2 percent.

The harms of smoking are significant and well documented\(^1\) – smoking is a major cause of cancer, cardiovascular disease and respiratory illness, as well as degraded welfare and wellbeing. The United States Surgeon General provided the following graphics to summarise the causes of mortality and morbidity arising from smoking:

Figure 1: Diseases arising from smoking

\(^*\)Organ sites for which there is sufficient evidence that smokeless tobacco causes cancer

Source: US Surgeon General Department of Health & Human Services, 2014

\(^1\) Surgeon General of the United States. The Health Consequences of Smoking—50 Years of Progress. Centers for Disease Control and Prevention (US) 2014. [link]
These diseases reduce both the quality and length of life. As other sources of illness diminish with increasing living standards and life expectancy, it becomes more likely that these non-communicable diseases will become a major cause of death.

The toll of premature death and disease caused by smoking demands a forceful and comprehensive government response. We argue that e-cigarettes are part of the solution, not part of the problem.

2 The risks and benefits of the use of e-cigarettes

2.1 The key insight: people smoke for the nicotine but die from the tar

The main motivation for smoking is to use the mildly psychoactive drug nicotine. But it is not the nicotine that causes most of the harm. The harms are overwhelmingly caused by toxic particles and gases that contain products of combustion of tobacco leaf, not the nicotine itself. While nicotine is not entirely safe, it accounts for a very small fraction of the direct harm caused by smoking. Studies of the health effects of prolonged NRT use and smokeless tobacco have allowed the nicotine health effect to be isolated from the overall smoking health effect. The Royal College of Physicians (2016) describe the effects of nicotine alone as follows:

As use of nicotine alone in the doses used by smokers represents little if any hazard to the user, complete substitution of smoking with conventional NRT products is, for practical purposes, the equivalent of complete cessation in almost all areas of harm to the user. [Section 8.4.1 p125]

Nicotine is the main reason why people smoke, but not the direct cause of harm. To summarise:

People smoke for the nicotine but die from the tar

There is extensive evidence characterising the physics and chemistry of e-cigarette aerosol and cigarette smoke. E-cigarettes create much lower exposures to toxic agents. Taking account of the toxicology evidence, Public Health England and the Royal College of Physicians (London) provided a guideline assessment that e-cigarettes are likely to be at least 95 percent lower risk than smoking.

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2 Royal College of Physicians (London) Nicotine without smoke: tobacco harm reduction 28 April 2016 [link]
5 Burstyn I. Peering through the mist: systematic review of what the chemistry of contaminants in electronic cigarettes tells us about health risks, BMC Public Health 2014;14:18. [link]
11 Royal College of Physicians (London), Nicotine without smoke: tobacco harm reduction. 28 April 2016 [link]
The Royal College of Physicians summarised its guidance as follows:

*Although it is not possible to precisely quantify the long-term health risks associated with e-cigarettes, the available data suggest that they are unlikely to exceed 5% of those associated with smoked tobacco products, and may well be substantially lower than this figure*.

(Section 5.5 page 87)

2.2 **It is unethical to ban a much safer product like e-cigarettes**

The key point is that the risk of e-cigarette use is very much lower than smoking – so what rationale could be used to ban the much safer product while leaving the far more dangerous product widely available? There is no ethical, scientific or legal justification for deliberately denying smokers access to products that are a much safer way of using nicotine than smoking. The questions that policymakers should address is: how can a government justify depriving smokers access to these products while keep the much more harmful cigarettes widely available on the market?

2.3 **Banning e-cigarettes will inevitably create a black market**

A *de facto* prohibition of e-cigarettes does not mean this product will not be used in Taiwan. In fact, there is already a thriving, though unquantified, consumer base of people who are using these products to reduce their smoking-related risks and to take control of their health outcomes. Note this is a virtuous black market – people acting to protect their health and wellbeing in response to disproportionate regulation, without harming anyone else.

The economics of the international trade incentivises users to purchase nicotine at higher concentrations (as high as 99 percent), and higher than they would generally use (typically up to 3.6 percent) and then handle, mix and dilute the high strength liquids down to their preferred mix with obvious handling risks. Purchases can be made from many high quality web sites, with prices in multiple currencies, secure payments systems, reputable couriers and paperwork and certification, yet with uncertain quality, ingredients and safety.

We believe that a regulated domestic market for these liquids would be a preferable way to meet the rational and legitimate expectations of Taiwan citizens to be able to use products that can dramatically reduce their risks. These products are widely available in Europe and the United States with no material harms arising.

3 **Experience of e-cigarette use in other countries is very positive**

The amendment as proposed would have the aim and partial effect of preventing smokers using nicotine through technologies that cause much lower risk to health than through smoking, for example through use of e-cigarettes or personal vaporisers. These technologies rely on electricity to heat a liquid to create an inhalable aerosol rather than combustion of tobacco to create smoke. These technologies have grown rapidly over the last five years primarily because advances in battery technology have allowed for small devices with sufficient power and battery life to make viable consumer alternatives to cigarettes. Experience from other countries suggests that the products in

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their current state of advancement can reach many smokers – and given continuing innovation will reach many more in future if the regulation and risk communications are fair and proportionate.

### 3.1 United Kingdom experience – adult smoking falling rapidly

We do not have recent detailed data for e-cigarette use in Taiwan. In the United Kingdom where ENDS are widely available, the use of these alternatives is now at a significant scale relative to smoking. The Office of National Statistics reported data for 2015.

![Figure 2: Smoking e-cigarette use in the United Kingdom 2015](image)

<table>
<thead>
<tr>
<th>Smoking and e-cigarette users 2015</th>
<th>British adults</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current smokers</td>
<td>8,843,000</td>
</tr>
<tr>
<td>Current e-cigarette users</td>
<td>2,201,000</td>
</tr>
<tr>
<td>Of the current e-cigarette users:</td>
<td></td>
</tr>
<tr>
<td>Current smokers</td>
<td>1,297,000</td>
</tr>
<tr>
<td>Ex-smokers</td>
<td>849,000</td>
</tr>
<tr>
<td>Never smokers</td>
<td>56,000</td>
</tr>
<tr>
<td>Ex-smokers and ex-e-cigarette users</td>
<td>717,000</td>
</tr>
</tbody>
</table>

Figures rounded to nearest 1,000

The use of ENDS by never-smokers in the UK is very low (0.2 percent of never smokers use e-cigarettes). This means the appropriate comparator is with the risks to nicotine users who are smoking. Many of those who are both smoking and using e-cigarettes may be on a path to eventual exclusive use and some evidence suggests that these ‘dual users’ are more likely to go on to quit. The 849,000 current ENDS users and 717,000 former ENDS users who have stopped smoking represent a substantial inroad into the smoking population, though it is not possible to attribute their smoking cessation directly to ENDS use. However, the trend in smoking prevalence is also encouraging.

The 8.8m current smokers represents current record low adult smoking prevalence of 17.5 percent. After stalling in the late-2000s smoking prevalence has fallen rapidly as e-cigarette use has increased from negligible levels in 2011. Throughout this period of widespread ENDS use there have been no major health problems or any other problems – though many ENDS users are now no longer smoking and will be gaining significant benefit from smoking cessation.

### 3.2 United States experience – adult smoking falling rapidly

Similar patterns are seen in the United States. The National Health Interview Survey shows that U.S. adult smoking prevalence (18 years and over) has fallen from 18.9 percent in 2011 to a record low of 15.1 percent in 2015 – with an especially sharp decline between 2014 and 2015. As with

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14 Office of National Statistics (UK), E-cigarette use in Great Britain, 2015 Dataset. 18 February 2016 [link] Table 2a.
16 Office of National Statistics (UK), Adult Smoking Habits in Great Britain1974-2014. 18 February 2016 [link] Table 1.
Britain, the impact of ENDS on the cigarette trade is substantial: in 2015, there were approximately 37.5m smokers, but there were 8.3m e-cigarette users of whom 2.5m were ex-smokers\(^\text{18}\).

![Figure 3: Decline in U.S. adult smoking prevalence 1997-2015](source: National Center for Health Statistics, National Health Interview Survey, 1997–2015)

### 3.3 Adolescent e-cigarette use is displacing smoking

There have been concerns expressed that adolescent uptake of e-cigarettes may be ‘addicting future generations’. However, the data suggest a different pattern. Most use is by teenage smokers and data is consistent with e-cigarette use displacing smoking.

In the UK, use of ENDS among adolescents is low and confined mainly to young smokers. A March 2015 survey found 2.4 percent of 11-18 year olds had used e-cigarettes in the last month, and these were mainly smokers\(^\text{19}\).

In the United States, almost all adolescent users of ENDS are former or current smokers, and therefore ENDS represents a change in the way nicotine is used for most. Analysis of CDC 2014 data shows that 90 percent of the 1.96m current e-cigarette high school users are current or former users of other tobacco products\(^\text{20}\). Some of the remaining 10 percent may have become smokers in the absence of e-cigarettes. There is no evidence supporting a gateway from ENDS to smoking\(^\text{21}\).

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\(^{18}\) CDC, National Health Interview Survey, 2015 Data Release [link]; Cited in Rodu B. How Many Americans Vape? CDC Data Show Fewer Vapers & Smokers in 2015, Tobacco Truth 17 July 2016 [link]

\(^{19}\) YouGov for Action on Smoking and Health (UK) Smokefree GB Youth Survey. Published in ASH Fact sheet [link]


In the United States, the rate of teenage and adult smoking has been declining rapidly since the introduction of e-cigarettes. For example, the Monitoring the Future dataset tracks the long-term trend in cigarette smoking in American 12th grade (age 17-18) students. The chart below plots this data, and shows a post-2010 rate of decline three times the long run average prior to 2010 for daily smoking and four times for current smoking (in the last 30 days).

**Figure 4: Accelerating decline in U.S. 12th grade smoking 1975-2010 and 2010-2016**

![Graph showing the decline in smoking rates](image)

Other surveys confirm that smoking among American adolescents has been falling rapidly. The National Youth Tobacco Survey (CDC) shows that between 2011 and 2015, current use of cigarettes by high school students fell from 15.8 percent to 9.3 percent, and use of cigars and pipes also fell. There is no evidence that e-cigarettes are causing adolescents to become smokers as they enter adulthood.

The data are consistent with a decline in smoking partly due to displacement by much lower risk ENDS (an ‘exit gateway’). While the nature of the available data cannot show that the accelerated decline is caused by the rise of e-cigarettes after 2010, they do provide some reassurance that e-cigarettes are not creating a surge of new adolescent smokers emerging from the other side of a gateway. Far more likely is that they are providing an alternative to smoking and so opening an ‘exit’ gateway or diversion from smoking.

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24 O'Leary R, MacDonald M, Stockwell T, Reist D. Clearing the Air: A systematic review on the harms and benefits of e-cigarettes and vapour devices. University of Victoria, BC: Centre for Addictions Research of BC.; 2017 [link]
3.4 The rise in e-cigarette use is concentrated in smokers

In the United States, there has been a significant increase in the numbers of young people using e-cigarettes, and this has coincided with a decline in smoking over the period to 2015. The chart below illustrates the shift in U.S. teenage nicotine use from highly harmful to much less harmful delivery systems. This represents a significant benefit.

**Figure 5: Changing patterns of U.S. high school student nicotine and tobacco use 2011-15**

![Figure 5](image-url)

However, it is important to understand what is happening below the headline figures. The measure used for e-cigarette use is “used at least once in the last 30 days”. However, four characteristics about the rising e-cigarette use stand out:

**Mostly infrequent use.** Most high school e-cigarette use is infrequent – in 2014, 45.4 percent of those using e-cigarette in the last 30 days had used on only 1-2 days and 61.6 percent on five days or fewer.

**Mostly non-nicotine.** The University of Michigan Monitoring the Future survey found that most e-cigarette use among teenagers is without nicotine and flavours only.

*Among students who had ever used a vaporiser, 65–66% last used ‘just flavoring’ in 12th, in 10th and in 8th grade, more than all other responses combined.*

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Mostly concentrated in smokers with negligible use in never-smokers. Warner (2016)\textsuperscript{28} examined prevalence and frequency of use among smokers and non-smokers:

Non-smoking high school students are highly unlikely to use e-cigarettes; among those who do, most used them only on 1–2 of the past 30 days. By contrast, current smokers are likely to use e-cigarettes and on many more days.

Villanti et al (2016)\textsuperscript{29} found negligible frequent e-cigarette use among never smokers.

Few never tobacco users had used e-cigarettes on 10 or more days in the past month (absolute percent < 0.1%).

The data reviewed here are consistent with a highly positive explanation: that frequent e-cigarette use with nicotine is concentrated in smokers, or people who would otherwise smoke, for whom it is an alternative to smoking or a means of quitting. Much of the rest of the use is infrequent and does not involve nicotine – i.e. it is experimental or frivolous use, rather than a consolidated habit that poses risk of addiction or risks to health.

3.5 E-cigarettes protect both adults and teenagers from smoking risks

There are also more proportionate means to protect young people than to deprive millions of adult nicotine users of the means to access much lower risk products. Young people also have an interest in the health of adults: their older relatives, and themselves, family and friends as they grow up. Overreaction to unproven and unlikely theoretical risks is not in their interests. The data on youth uptake of e-cigarettes and effects on youth smoking are misrepresented in the reasoning as presented, and provide no support for the interim decision.

4 Nicotine e-liquids do not pose a significant safety risk

4.1 No unusual risks created by accidental nicotine exposure

Public Health England’s expert review addressed the toxicity risks of nicotine liquids used for personal vaporisers\textsuperscript{30}. The review noted that:

- fatal nicotine poisoning is extremely rare
- conventional estimates of LD\textsubscript{50} for humans (30-60mg ingestion) are grounded in ‘dubious’ 19\textsuperscript{th} Century experiments and the likely lethal dose is much higher\textsuperscript{31}
- that individuals attempting suicide with nicotine have survived very high doses
- nicotine inhalation is self-regulating as users become nauseous
- that nicotine is an emetic and swallowing a significant dose ends in vomiting

American activists have publicised rapidly rising calls to poison centers as though it is a proxy for poisoning risks\(^{32}\). However, these calls are from a low base, rise in line with growth in the product from 2011 and refer to ‘exposures’ (any contact) rather than poisoning or harm. E-liquid or e-cigarette related calls to poison centers rose from 271 in 2011 to 3,783 in 2014, though have been declining since\(^{33}\). These figures are small compared to other normal household exposure risks\(^{34}\).

The following chart shows calls to U.S. poison centers by exposure substance, and shows that the exposure calls are negligible compared to routine exposures of common household items.

**Figure 6: Calls to U.S. poison centers by exposure substance**

![Exposure reports (US 2014)](image)

Data source: American Association of Poison Control Centers 2014 Annual Report

The 4,024 e-cigarette exposure calls amounted to 0.15 percent of the total in 2014. The number of exposure calls related to analgesics was over seventy-times greater than for e-cigarettes.

The approach to poisoning risks with nicotine liquids should be as with other moderate household hazards. There is a well-established approach to address this risk:

- Use of child-resistant packaging
- Warning of the hazard
- Providing advice on what to do if exposed

This can be specified through ordinary consumer regulation, and is a standard approach for a large number of consumer products. Taiwan’s proposed ban on e-liquids will force many users to purchase from unauthorised sources, some of which may not be adopting these standards, thereby increasing these risk. Furthermore, international trade may be in highly concentrated and much more hazardous nicotine liquids: it is possible to purchase near pure nicotine concentrate from

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32 Campaign for Tobacco Free Kids, Poisoning Cases Related to E-Cigarettes Keep Spiraling Upward, September 2014 [link](http://campaignfortobaccofreekids.org/)

33 American Association of Poison Control Centers, E-Cigarettes and Liquid Nicotine, viewed 21 August 2106 [link](http://www.aapcc.org/)

The more responsible approach is to make the product available in a legal regulated market in which the authorities require appropriate labelling.

4.2 No significant risks identified for long term nicotine use

The long term safety of nicotine has been extensively studied through the use of NRT\textsuperscript{36} and snus (oral tobacco)\textsuperscript{37} and not been found to be a cause of significant disease. The influence of nicotine on adolescent brain development remains speculative and based largely on animal studies\textsuperscript{38}, with little supporting evidence in humans – for example observations of adverse effects in the large population of nicotine users who have smoked over many decades. There is extensive knowledge available in systematic reviews – for example, Glasser and colleagues recently reviewed 687 published articles\textsuperscript{39} to conclude:

\textit{Studies indicate that ENDS are increasing in use, particularly among current smokers, pose substantially less harm to smokers than cigarettes, are being used to reduce/quit smoking, and are widely available.}

5 E-cigarettes are part of the solution not part of the problem

5.1 Comprehensive tobacco control strategy embraces “harm reduction”

Policymakers have been working for five decades to control the burden of tobacco related diseases. The tobacco control strategy should be focussed on reducing premature death and serious harms like cancer, cardiovascular and respiratory disease as rapidly as possible. To that end, the most effective tobacco control strategy has four main elements:

1. To provide strong incentives not to start smoking;
2. To motivate and help people to quit smoking;
3. To reduce harm to non-smokers arising from exposure to toxins in second hand smoke;
4. To reduce harm to those who continue to use nicotine.

The fourth strand of tobacco control strategy is known as tobacco harm reduction. The WHO Framework Convention on Tobacco Control (article 1) explicitly endorses tobacco harm reduction strategies in tobacco control\textsuperscript{40}:

(d) “tobacco control” means a range of supply, demand and harm reduction strategies that aim to improve the health of a population by eliminating or reducing their consumption of tobacco products and exposure to tobacco smoke; (emphasis added)

\textsuperscript{35} Bates C. Regulators and the compliance fallacy - buying 99% nicotine e-liquid from China, Counterfactual 4 May 2016. [link]
\textsuperscript{36} Lee PN, Fariss MW. A systematic review of possible serious adverse health effects of nicotine replacement therapy. Arch Toxicol. Springer Berlin Heidelberg; 2016 Oct 3;1–30. [link]
\textsuperscript{37} Lee PN. Epidemiological evidence relating snus to health - an updated review based on recent publications. Harm Reduct J. England; 2013;10(1):36. [link]
\textsuperscript{38} Naiura R. Re-thinking nicotine and its effects, Schroeder Institute, Truth Initiative, United States. 2 December 2016 [link][PDF]
\textsuperscript{40} WHO Framework Convention on Tobacco Control, Article 1(d), 2003 [link]
E-cigarettes can meet this need by providing a much safer way of using nicotine for people who cannot or do not wish to quit using nicotine.

Tobacco harm reduction remains controversial\textsuperscript{41}, but there is mounting evidence that it could be transformative in reducing the burden of disease. Many of the top scientists in the field of tobacco and nicotine research now recognise the opportunity to achieve rapid reductions in disease risk\textsuperscript{42} and WHO has been severely criticised for presenting a distorted view of the risks and opportunities of e-cigarettes and harm reduction. It produced a poor quality assessment of science for delegates to the 7th Conference of the Parties of the WHO Framework Convention on Tobacco Control\textsuperscript{43}.

5.2 World Health Assembly targets to reduce tobacco use demand a new approach

Taiwan has complicated relations with the United Nations and World Health Assembly for historic reasons, but since 2009 it has generally aimed to participate in the WHA as fully as possible within the constraints imposed by others\textsuperscript{44}. The UN and WHA have agreed targets to reduce the premature death caused by non-communicable diseases (NCDs) mainly cardiovascular diseases, cancers, chronic respiratory diseases and diabetes. More than 36 million people die annually from NCDs (63% of global deaths), including 14 million people who die prematurely before the age of 70\textsuperscript{45}.

In a series of political declarations, the members of the UN General Assembly in 2011\textsuperscript{46} and World Health Assembly in 2013\textsuperscript{47} 48 committed to taking concerted action to reduce the burden of NCDs by attaining nine voluntary global targets\textsuperscript{49}, including an over-arching target to reduce non-communicable disease mortality and tobacco use.

Figure 7: Relevant World Health Assembly non-communicable disease targets

<table>
<thead>
<tr>
<th>Framework element</th>
<th>Target</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target 1: Non-communicable diseases</strong></td>
<td>A 25% relative reduction in the overall mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases by 2025 compared to 2010.</td>
<td>• Unconditional probability of dying between the ages of 30 and 70 from cardiovascular diseases, cancer, diabetes or chronic respiratory diseases • Cancer incidence, by type of cancer, per 100 000 population</td>
</tr>
<tr>
<td><strong>Target 5: Tobacco use</strong></td>
<td>A 30% relative reduction in the prevalence of current tobacco use in persons aged 15+ years by 2025 compared to 2010.</td>
<td>• Prevalence of current tobacco use among adolescents • Age-standardized prevalence of current tobacco use among persons aged 18+ years</td>
</tr>
</tbody>
</table>

\textsuperscript{41} Abrams DB. Promise and Peril of e-Cigarettes Can Disruptive Technology Make Cigarettes Obsolete? JAMA 2014;311:135–6. [link] and Reply by Wasim Maziak [link]

\textsuperscript{42} Letter to Dr Margaret Chan, Director General WHO, Reducing the toll of death and disease from tobacco – tobacco harm reduction and the Framework Convention on Tobacco Control 26 May 2014 [context][letter]

\textsuperscript{43} UKCTAS, Commentary on WHO report on ENDS and ENNDS, October 2016 [link][PDF]

\textsuperscript{44} Gerrit van der Wees, Taiwan and the World Health Assembly, The Diplomat, 10 May 2016 [link]

\textsuperscript{45} World Health Organisation, Non-communicable diseases and their risk factors [link]

\textsuperscript{46} UN General Assembly Resolution A/RES/66/2, Heads of State and Government in the United Nations Political Declaration on the Prevention and Control of Non-communicable Diseases [link]

\textsuperscript{47} World Health Assembly Resolution 66/8 Draft comprehensive global monitoring framework and targets for the prevention and control of non-communicable diseases, March 2013 [link]

\textsuperscript{48} World Health Assembly Resolution 66/9 Draft action plan for the prevention and control of non-communicable diseases 2013–2020 [link]

\textsuperscript{49} World Health Organisation, Global Monitoring Framework for NCDs About 9 voluntary global targets [link]
Given that tobacco use smoking prevalence has been increasing in Taiwan, it will be difficult for Taiwan to meet these targets without a new strategy. We argue that this a strategy should be tobacco harm reduction, and that the primary means of realising tobacco harm reduction would be through e-cigarettes and other vapour products.

6 Taiwan could establish a world-leading regulatory regime for e-cigarettes

Taiwan has an opportunity to define a world-leading proportionate public-health orientated regulatory framework for e-cigarettes. The regime defined in the United States is built on legislation designed for tobacco products before e-cigarettes existed. The European Union Tobacco Products Directive is based on pre-2012 understanding of the risks and potential benefits. Neither provides a model for Taiwan, or anywhere else. Regulation should be based on the following:

- **Age restrictions.** The products are for sale to adult smokers and sales to under-18s should be prohibited. These are likely to be a political pre-requisite for accessibility of e-cigarettes in the open market.

- **Products standards.** Such an approach would be based on industry-wide standards for e-cigarettes and e-liquids. Standards would be proportionate to risk and address mechanical, thermal, electrical and chemical risks, together with testing regimes. Such standards could be variations on those developed by British Standards Institute (BSI)\(^50\) and in France under the equivalent body, AFNOR\(^51\), or a forthcoming European CEN standard.

- **Child resistant packaging.** Standards that would make e-liquid containers more difficult to open by children. ISO 8317:2015 *Child resistant packaging* provides such a standard.

- **Labelling.** Provisions of useful information to consumers regarding risks and risk comparison to smoking, the hazards or nicotine liquids and what to do if exposed. Information on the producer and where to report any adverse effects or problems.

- **Marketing controls.** It is possible to place constraints on marketing – a practice used for many adult products including alcohol or gambling in many jurisdictions. The U.K. Committee on Advertising Practice has set out guidelines for U.K. advertising of e-cigarettes that were widely welcomed\(^52\) and could be adapted for use in Taiwan. These are similar to the restrictions placed on alcohol advertising in the UK.

- **Indoor use restrictions.** We do not consider legally mandated use restrictions to be justified unless there is a material risk to bystanders. This has been the main justification for banning cigarette smoking. No such justification exists for e-cigarettes\(^53\). For ENDS, the issue is one of nuisance and etiquette, and therefore it should be a matter for owners or managers to determine the best policy.

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\(^{53}\) Burstyn I. Peering through the mist: systematic review of what the chemistry of contaminants in electronic cigarettes tells us about health risks. *BMC Public Health*, 2014 [link]
7 The danger of e-cigarette prohibition or regulation increasing smoking

The danger of excessive regulation or prohibition is that it will do the exact opposite of what health authorities are trying to achieve: increase smoking and protect the cigarette trade. In its 2016 report, the Royal College of Physicians drew attention to this risk of unintended consequences:

*A risk-averse, precautionary approach to e-cigarette regulation can be proposed as a means of minimising the risk of avoidable harm, eg exposure to toxins in e-cigarette vapour, renormalisation, gateway progression to smoking, or other real or potential risks.*

*However, if this approach also makes e-cigarettes less easily accessible, less palatable or acceptable, more expensive, less consumer friendly or pharmacologically less effective, or inhibits innovation and development of new and improved products, then it causes harm by perpetuating smoking. Getting this balance right is difficult.* (Section 12.10 page 187 – emphasis added)

In fact, there is now tentative evidence suggesting that this is happening. Research from the United States suggests that age restrictions placed on vaping have the effect of increasing teenage smoking\(^{54}\)\(^{55}\)\(^{56}\). Note that if this effect is true for age restrictions, it is likely also to be true for any broader prohibitions (such as that proposed for Taiwan) that blocks access to safer alternatives to smoking. This evidence should be taken as indicative of potential harmful unintended consequences arising from prohibition of e-cigarettes.

There is again scope for unintended consequences arising from excessive restriction of the advertising of low risk alternatives to smoking – namely that there will be more smoking and less use of low risk alternatives. Basic economic analysis would support that expectation and some care is needed to avoid unintended consequences\(^ {57}\). There are other e-cigarette policies that may risk increases in smoking:

- **Warnings** that scare users rather than informing them that e-cigarettes are much less risky than smoking.
- **Pervasive bans** on e-cigarette use indoors may encourage relapse to smoking and discourage switching from smoking to e-cigarette use.
- **Excessive taxation** on e-cigarettes would adversely change price differentials between e-cigarettes and cigarette, reducing or eliminating the financial incentive to switch.
- **Bans on e-cigarette flavours** or other product restrictions could make the products less appealing and discourage switching from smoking to e-cigarette use.

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\(^{54}\) Friedman AS. How does Electronic Cigarette Access affect Adolescent Smoking? *J Health Econ* Published Online First: October 2015. [link]

\(^{55}\) Pesko MF, Hughes JM, Faisal FS. The influence of electronic cigarette age purchasing restrictions on adolescent tobacco and marijuana use. *Prev Med (Baltim)*, February 2016 [link]

\(^{56}\) Pesko M, Currie J. The Effect of E-Cigarette Minimum Legal Sale Age Laws on Traditional Cigarette Use and Birth Outcomes among Pregnant Teenagers. Cambridge, MA; 2016 Nov. [link]

\(^{57}\) Tuchman A. Advertising and Demand for Addictive Goods: The Effects of E-Cigarette Advertising, Stanford University, (working paper) September 2015 [link]
8 Summary: the benefits of the legal availability of e-cigarettes in Taiwan

Policymakers must base decisions with real-world life-or-death consequences on a dispassionate view of the evidence, and the scientific evidence now suggests that electronic nicotine delivery systems (ENDS) could be a benefit to millions of smokers.

- Smokers who switch to ENDS are likely to avoid at least 95% of the major smoking-related risks for cancer, heart disease and respiratory illness. They will also experience significant short-term gains in health and wellbeing and they are likely to be financially better off.
- Harm reduction strategies can contribute to meeting national health policy goals and international commitments to tackle non-communicable diseases and reduce tobacco use.
- It is unethical to deny a smoker access to products that are much safer than the dominant product on the market, cigarettes. Outside the field of tobacco and illicit drugs, there are no precedents for banning safer alternatives to widely used products. No government should deliberately try to deny smokers this option – now adopted by millions of smokers world-wide.
- The availability of e-cigarettes is not an alternative to conventional anti-smoking policy but complementary. By providing smokers with an easier way of responding to the pressures of high taxes and other measures of conventional tobacco control, the overall tobacco control policy will become both more responsive and more humane.
- There is no credible evidence to suggest that e-cigarettes undermine tobacco control, induce young people to smoke, or reduce the rate that adults quit smoking. The evidence, when examined dispassionately, shows what a neutral observer would expect: people use much safer products to reduce their health risks or to quit smoking.
- E-cigarettes are an effective tool for switching from smoking at no cost to the public finances. Individual smokers bear the costs and the ‘health promotion’ expenditures are made by manufacturers advertising e-cigarettes as alternatives to smoking.
- A widespread switch to e-cigarettes would also reduce exposure to second-hand tobacco smoke. E-cigarettes pose no material risk to bystanders and it should be a matter for owners of public places, not the law, to decide if e-cigarette use should be permitted or not permitted.
- The quality of products available from reputable manufacturers is now very high and they are on widespread sale in Europe, North America and throughout Asia without any major problems. Taiwan should aspire to develop this industry for exports and as a rival to the cigarette trade.
- There is a growing international experience with the regulation of e-cigarettes as popular consumer products, and, by changing its approach, Taiwan has the opportunity to take a leadership role in these developments.
- It would be better for Taiwan to have its own legitimate and properly regulated supply chain and to have responsible producers contributing corporate and sales taxes as appropriate, and less international internet trade in high strength liquids.
- We urge the government of Taiwan not to protect the cigarette trade in Taiwan from competition from superior low-risk products by prohibiting them. The danger of prohibiting e-cigarettes is that it will protect the cigarette sales, promote smoking and harm health.