

Title: Mandated guidance provision for drones IA No: RPC Reference No: DfT00358 Lead department or agency: Department for Transport Other departments or agencies: Department for Business and Industrial strategy	Impact Assessment (IA)			
	Date: 01/08/2016			
	Stage: Consultation			
	Source of intervention: Domestic			
	Type of measure: Secondary legislation			
Contact for enquiries: [REDACTED]				

Summary: Intervention and Options **RPC Opinion:** Fit for purpose

Cost of Preferred (or more likely) Option				
Total Net Present Value	Business Net Present Value	Net cost to business per year (EANDCB in 2014 prices)	One-In, Three-Out	Business Impact Target Status
N/Q	N/Q	N/Q	In scope	Qualifying provision

What is the problem under consideration? Why is government intervention necessary?
 The increased use of drones poses a safety challenge for aviation and members of the public. There is a need to raise the safety awareness of drone users. Whilst media campaigns can be targeted to an extent, they cannot capture everyone. This can be achieved by supplementing campaigns with ensuring that guidance on safe and legal flying is given out at point of sale. Some sellers of drones do give out guidance on safe and legal drone flying, but others do not. Mandating guidance provision may therefore be required.

What are the policy objectives and the intended effects?
 The policy objectives are to improve drone users' (in particular 'leisure users') awareness of and adherence to safety practices and the law. And to improve the awareness of risks to safety amongst parents and adults responsible for children when flying drones.
 The intended effects are that, as the use of drones increases, the frequency of incidents does not increase, and ideally reduces. Almost all drones are fitted with cameras as standard and many users are also not aware of data protection rules and may inadvertently breach these – this policy is also designed to reduce such incidents.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)
 The Government is considering 2 options for action in its' consultation, the consultation will be use to choose the preferred one: 1) Do nothing beyond what is being done already and planned; and 2) regulate to mandate guidance delivery, potentially including age related guidance. Given the occurrence of some accidents already and the increased risk of more serious accidents as drone use increases, we may need to take further action beyond what is being done currently and what is planned, otherwise more injuries may occur. The CAA is already pursuing an active programme of engagement to encourage improved guidance delivery, but this will not be mandatory for all manufacturers or sellers. As providing guidance can increase a business' costs, some will likely never choose to participate in the interests of competing for customers on price. A legislative requirement that all new drones sold in the UK must have guidance on safety and legal flying included, increases the likelihood that all future drone users learn their responsibility to fly safely.

Will the policy be reviewed? It will be reviewed. **If applicable, set review date:** On a regular basis every 2 – 3 years

Does implementation go beyond minimum EU requirements?	Yes			
Are any of these organisations in scope?	Micro Yes	Small Yes	Medium Yes	Large Yes
What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)	Traded: N/A		Non-traded: N/A	

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible SELECT SIGNATORY: _____ Date: _____

Summary: Analysis & Evidence

Policy Option 2

Description: Regulate to mandate guidance delivery, potentially including age related guidance.

FULL ECONOMIC ASSESSMENT

Price Base Year N/A	PV Base Year N/A	Time Period Years N/A	Net Benefit (Present Value (PV)) (£m)		
			Low: Optional	High: Optional	Best Estimate: N/Q

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate	N/Q	N/Q	N/Q

Description and scale of key monetised costs by 'main affected groups'

Due to a lack of available data, and uncertainty around future industry trends no costs have been monetised. We will call for evidence during the consultation to fill these gaps.

Other key non-monetised costs by 'main affected groups'

Government and regulators: potential costs of running engagement campaign. (likely low impact)
 Government, Regulators & others (potentially industry and other stakeholders) who will be invited to collaborate on this: cost of producing guidance (likely low impact)
 Trading standards: enforcement (likely low impact)
 Drone manufacturers and retailers: cost of disseminating guidance and familiarisation costs (likely low impact), potential packaging change costs (likely moderate impact)

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate	N/Q	N/Q	N/Q

Description and scale of key monetised benefits by 'main affected groups'

Due to a lack of available data, and uncertainty around future industry trends no benefits have been monetised. We will call for evidence during the consultation to fill these gaps.

Other key non-monetised benefits by 'main affected groups'

Consumers and wider society: Reduced risk of accidents, property damage, and data protection issues, greater acceptance and utilisation of drone technology (likely low impact)
 Police/CAA: lower enforcement costs because of better awareness of laws and on drones (likely low impact).

Key assumptions/sensitivities/risks

Even our qualitative assessment is largely based on anecdotal evidence and assumptions about how the policy elements would have an impact.
 Risk that manufacturers and retailers wouldn't engage and the guidance wouldn't be delivered, even if mandated
 Assumption that drone users would read and comply with guidance if it was provided.

Discount rate

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m: N/Q
Costs: N/Q	Benefits: N/Q	Net: N/Q	

Evidence Base (for summary sheets)

Introduction

We live in an era of unprecedented change: to our businesses, our economies and our societies. Technological advancement has become a key driver of this change.

The emergence of drones – unmanned aircraft – and drone-powered solutions are good examples of where disruptive technologies can bring about new products, services and challenges to a range of industry sectors.

The application of drones has potential to improve efficiency and safety, delivering better services to customers reducing costs and bringing vast economic benefits for businesses and the public sector. An example of this is scientists using them to observe habitats, support endangered species and accurately count marine populations. Aid workers and doctors use them to survey damage after natural disasters. Geographers use them to update maps. The media use them at sports events to get up-close, exciting footage of competitors and players. Drones are used to oversee accident, and search and rescue situations, giving emergency responders real time information to make better decisions. The energy sector uses drones to inspect oil rigs, wind turbines and power networks, saving money and lives.

The application of drones to everyday challenges is increasing efficiency and safety, and saving money, bringing vast economic benefits for businesses and the public sector delivering services. Thanks to such benefits, the potential economic value of drones is huge. PwC estimates the market value of drone-powered solutions at over \$127bn by 2025¹.

With new technologies come both benefits and risks. The government is committed to ensuring the development of drone services occurs in a responsible, safe way. Earlier this year, the Government sponsored several 'Public Dialogue events'² where safety emerged as a key concern of the members of the public who participated due to the increasing number of reports of drones coming into close proximity with aircraft. To address this, the members of the public surveyed suggested better guidance and education for users, as well as a restriction on what ages could fly drones. The Civil Aviation Authority (CAA) already has a safety 'Dronecode'³ which they have been promoting but it is challenging to measure exposure to the guidance successfully.

Following an initial assessment, the Government would like to explore in a public consultation the possible solutions to address safety, privacy and security risks, including those raised by the Public Dialogues process and by other stakeholders.

Problem under consideration & Rationale for intervention:

The increased use of drones can pose a safety challenge for the aviation sector and members of the public – there have been increasing reports of drones flying close to larger manned aircraft⁴, and, as widely reported at the time, in November 2015 a toddler was badly injured by a drone, losing one of his eyes⁵. There have also been reports of drones being used in

¹ <http://www.pwc.pl/en/publikacje/2016/clarity-from-above.html>

² The 'Public Dialogues' work was a series of facilitated dialogues with members of the public on drones. The report will be published alongside the consultation.

³ <https://www.caa.co.uk/Consumers/Model-aircraft-and-drones/The-Dronecode/>

⁴ reported incidents have risen from 9 in 2014 to 40 in 2015, with an expected increase this year too

⁵ <http://www.bbc.co.uk/news/uk-england-hereford-worcester-34936739>

contradiction of the laws currently in place that ensure safety, privacy and security.⁶ Although not all of these reports can be properly verified, they do suggest some cause for concern. The Government wants to ensure that as drone use increases, that drones are operated safely and the security and privacy of the British public is protected. This is also important for the drone industry, as their success is dependent on the technology being safe and used lawfully. Whilst the drone industry offers great opportunity to boost the UK economy and improve transport, the Government must ensure that this can be done safely.

There are already strict regulations that all drone operators in the UK should follow, which set out how small drones must be flown. Existing regulations require those using drones to keep their vehicle in line of sight and not to endanger any person or property through recklessness or negligence. Drones with cameras must also not be flown within 50m of people, buildings or vehicles, or over large crowds or congested areas. There are tough existing penalties for breaking these rules, including up to five years imprisonment for endangering an aircraft. There have recently been some successful prosecutions for breaches of these rules.⁷ There are also regulations in place which allow the CAA to implement airspace flying restrictions around sensitive national infrastructure sites for the purposes of safety or security.

Whilst some drone users may be knowingly flouting the rules (either maliciously, or unaware of the full consequences breaking the rules might have for their and other's safety, or the possible penalties), the Government believes the majority of drone users breaking the rules are, in fact, unaware of them. This was a view shared by participants in the Public Dialogues process mentioned above. In particular, recent focus groups and interviews with 500 drone users run on behalf of the Civil Aviation Authority have also backed this up, suggesting that only 36% were aware of the Civil Aviation Authority's safety Dronecode when buying a drone. Whilst 51% of these drone owners said they were now aware of the Dronecode, few could recall specific rules or advice when asked.⁸ Whilst this survey only looked at the rules the CAA regulates, which are safety-focused, the findings also have implications for privacy, as this suggests a large proportion of users may not be aware of the distance restrictions that apply to drones with cameras, and that are outlined in the previous paragraph and part of the Dronecode.

To target users knowingly flouting the rules, the Government is exploring options in its consultation to strengthen deterrents, and introduce a registration scheme and requirements for drones to be electronically identifiable from a distance in order to aid enforcement.

Whilst an age restriction on who can fly drones was perceived as a potential solution to some of the risks by the participants of the Public Dialogues process, the Government has not so far found evidence to suggest it would be effective. Misuse of drones, either accidental or purposeful, could be undertaken by any age group. Furthermore, by banning drones for those below a certain age, there is a risk of making drones more enticing to those looking for opportunities to flout the law. As well as this, an age ban would seem to place an undue burden on sellers of drones and the police to enforce age restrictions. At a recent informal industry stakeholder forum one of the participants also made the point that young people flying drones is part of 'raising the drone pilots of the future'. Imposing a ban on young people using drones would seem counterintuitive to this. The Government will ask in its consultation whether its initial considerations in this area are sound, and will call for any evidence showing to the contrary that

⁶ <http://www.independent.co.uk/news/uk/home-news/drones-police-crime-reports-uk-england-safety-surveillance-a7155076.html>

⁷ <http://www.telegraph.co.uk/news/uknews/law-and-order/11590164/Man-to-stand-trial-accused-of-flying-drone-camera-illegally-in-first-police-prosecution.html>

⁸ At the time of writing, this research piece is undergoing peer review before being prepared for publication. We expect it to be published before or alongside the consultation document.

a ban could be effective. If sufficient evidence was presented, the Government could reconsider.

However, in order to encourage and nurture the responsible use of drones by young people, the Government will present in its consultation the option to produce age-related guidance for the use of drones. Age-related guidance could take the form of labelling on drone packaging to state ages for which the drone is not suitable, or more extensive information and advice for parents and responsible adults. The Government's consultation will seek views as to the most effective form this guidance should take to ensure our policy goal of a responsible drone use, that maximises benefits and minimises negative impacts on society is realised.

For those who are unknowingly flouting the rules, the Government wants to raise their awareness and knowledge and comprehension of the rules. Currently the CAA is running a safety awareness campaign, which includes leaflets being handed out at point of sale and articles and appearances in relevant media publications. They are looking to expand this further to reach more users, as well as members of the general public who might become users in future or see drones being flown around them that are breaking the rules. They also have plans to work more extensively with manufacturers and schools, potentially exploring the creation of a 'kitemark' to incentivise participation. However, whilst general and social media campaigns can be targeted to an extent, they are unlikely to reach everyone. And whilst many well-known vendors (including, for example, Maplins, Argos, PC World and MenKind) have worked with the CAA to give out safety leaflets at point of sale, it is a voluntary initiative and we do not believe all do. Equally, guidance handed out at point of sale may not reach the eventual user of the drone, if they receive the drone as a gift.

The Government propose several options in its consultation for raising the awareness of drone users with regards the rules. These are:

1. As part of a mandatory registration scheme, the Government would issue educational material directly to the owners of drones weighing 250g or above who would be mandated to register their drones and themselves. This educational material could be light-touch information, or more extensive, such as a 'knowledge test' that would need to be passed successfully before registration was complete. There are different options for implementing registration – the most effective at the moment would appear to be that of manufacturers voluntarily incorporating the process into a drone's activation⁹ processes, but it has not yet been firmly established at this stage whether manufacturers would be willing or able to do this. Another option for implementation – as implemented in the USA and Ireland – is by means of a registration website that drone owners must visit independently. Whilst this still seems to have been very effective in the USA and Ireland with high numbers of drone owners registering, this way of registering users does suggest that perhaps less drones are registered overall, as it depends on owners becoming aware of the requirement to do so.
2. Ways to better communicate to drone users where 'No Drone Flying Zones' are, such as apps and the voluntary use of geo-limitations software¹⁰
3. Making it mandatory for vendors and/or manufacturers to issue guidance on using your drone safely and legally – which could be applicable to all drones regardless of weight and ensure information was delivered directly either to the purchaser, or the eventual owner of the drone by being included in the packaging. How to ensure the guidance is

⁹ Activation process – this is a process some manufacturers already have, whereby the owner of a new drone is required to give the manufacturer certain information (perhaps to activate the warranty) before then being given a code with which to activate the drone and enable it to be flown for the first time.

¹⁰ Geo-limitations software allows a drone to be programmed not to fly in certain GPS coordinates. In order for this approach to be successful, manufacturers have to include the software in their products, and regular updates of locations that should not be flown in must be provided.

then read will also be something considered in the consultation and on which the Government will also seek advice. This approach is the subject of this impact assessment.

The Government is using its consultation to seek evidence and input from members of the public, drone users and industry stakeholders as to whether the options outlined above would be effective, and whether only one or a combination of options should be implemented to ensure an effective increase in drone user awareness. The submissions to the Government during the consultation period will then be used by the Government in considering which options to take forward.

The following sections of this impact assessment will compare this option of introducing mandatory delivery of guidance by manufacturers and vendors against only one other option, the continuation of the current status quo. This is because there is at this stage considerable uncertainty as to which of the above options could be implemented, the possibility that a combination of measures may be required or only one measure, and that there are other reasons for which the other two options might be implemented (i.e. to better enable identification of drone owners, or better data collection, or to specifically protect sensitive infrastructure more effectively). The registration option has already been the subject of a separate impact assessment, and the option outlined under 2) would not be mandatory and would therefore not impose a mandatory cost on business.

Policy objective:

The Government's assessment of the risk outlook deems that it is leisure users of drones who are most likely to be unaware of the rules and could therefore pose a safety risk and challenge to other laws such as those on privacy and data protection. The operators of commercial drones are more likely to have health, safety and risk assessment processes embedded in their company's culture. They are also more likely to be using a more expensive drone, and will not want to damage their asset, nor their company's reputation and business.

The policy would therefore be primarily aimed at leisure users, although by default of the policy, commercial operators would also receive the guidance. The policy objectives are therefore:

1. To improve leisure users' awareness of and adherence to safe and legal flying standards.
2. Improve the awareness of risks to safety amongst parents and adults responsible for children when flying drones.

The intended effects are that, as the use of drones increases, the number of breaches of safety, privacy and security laws are minimised

Description of options considered (including do nothing):

1. Do nothing beyond what is currently being done and is planned. This is the voluntary delivery of guidance, perhaps complemented by a kitemark for those who do and communications campaigns. Some vendors voluntarily hand out leaflets of the CAA's Dronecode on how to fly your drone safely and comply with the law, and this is likely to continue. However, it is uncertain how much impact this has. Given the occurrence of some incidents already and the increased risk of more serious incidents as drone use increases, the CAA has begun pursuing an active programme of engagement to encourage improved guidance delivery, but this will not be mandatory for all manufacturers or sellers. As providing guidance can increase a business' costs, some will likely never choose to participate in the interests of competing for customers on price. The CAA could encourage participation through the creation of a kitemark for manufacturers delivering this improved level of

guidance delivery, but it remains to be seen what level of engagement this will elicit. A CAA communications campaign is also being designed which will reach additional drone users. It is unlikely to reach all, meaning that some drone users may never be made aware of the relevant guidance that applies to them and will not adjust their behaviour accordingly. As these projects have only just been commissioned, their full impact is yet to be measured. The Government plans on carefully reviewing these workstreams as they progress to assess and improve their effectiveness. There is a risk that this option will not be adequate to manage or mitigate the risk that more injuries and damage occur.

- 2. Regulate to mandate guidance delivery.** A legislative requirement that all drones sold in the UK must have guidance on safety and legal flying included ensures that all future drone users receive some kind of guidance about their responsibility to fly safely and in compliance with the law. The Government will use its consultation on drones to focus on whether this option would be most effective, how best to implement it and seek input as to innovative ways of communicating or educating on safe and legal flying standards.

How to ensure guidance is read:

With regards both options, an assumption is currently being made that drone users will read and act upon the guidance they receive. The Government will use its consultation to consider what the best form for the guidance is to ensure buyers are encouraged to read it and engage with it. As part of this the Government will also consider what areas of risk and the law the guidance should cover.

Implementation Plan

The Government will use the consultation to collect available evidence on our options, following which a decision will be taken on how to proceed

Consultation questions will focus on assessing support for these proposals, their effectiveness and how they could be improved.

Monetised and non-monetised costs and benefits of each option (including administrative burden)

Due to uncertainty as to how the drone market will develop and data limitations it is not possible to quantify or monetise any of the effects of the policy at this time. There is a lack of publically available data on the drone market, which is young and developing rapidly, making it difficult to identify trends and likely policy impacts. During the consultation we will seek views on the best way to implement the proposals and call for evidence and data to assess the impact of option 2. At this stage therefore we offer only a qualitative assessment of the likely impacts with a sense of the magnitude of each. A summary of these impacts is given below, by affected group. The

details of the impacts are then given for each option. Where possible, we set out the mechanism by which each impact would have an effect and the likely magnitude

Table 1: Summary of the potential costs and benefits to affected groups

Affected Group	Possible Impacts	
	Benefits	Costs
Consumers	Fewer accidents; Less property damage	
Wider society	Fewer accidents; Less property damage; Trespass and data protection	
Central government		Cost of making guidance available
Trading standards		Enforcement costs
Police/CAA	Improved compliance with existing laws and regulations leading to lower enforcement costs	
Drone manufacturers		Producing guidance; Changing packaging; Familiarisation costs
Retailers		Producing guidance; Familiarisation costs

Appraisal period

We are likely to deviate from the standard 10 year appraisal period and instead propose to use a 5 year time horizon. This is due to the uncertainty around future short term developments in what is still a very young and rapidly growing industry. The lack of historic data also makes it difficult to forecast any further ahead with any certainty. It is also likely that given the rapidly developing nature of the market, the policy will need to be revisited and amended long before a standard 10 year appraisal period. For this IA where we do not quantify these impacts this decision does not have an impact, but we discuss the issue to bring to light the uncertainty we face.

Option 1: Do Nothing

Developments in the drone market and practices by suppliers and consumers over the appraisal period will have a significant bearing on the size of the possible costs and benefits of Option 2. Unfortunately, due to lack of data, it is not possible to produce a robust forecast of what these areas would be like in the absence of policy intervention at this stage. During the consultation

we will be calling for evidence on the following in a bid to build a robust picture of the counterfactual:

Evidence needed to develop the counterfactual

Number of drones sold/ forecast over the appraisal period in the UK

This figure underpins many of the impact calculations. We have very little data on this currently which severely limits the analysis we can do at this stage. To give a sense of the scale of the market, anecdotal evidence from the CAA suggests that UK retailer Maplin sold around 30,000 drones over the Christmas period in 2015, Although, it should be noted that many of these drones sold are likely to be small 'toy' products and hence some of the policy impacts listed above will have less of a consequence for them, e.g. reducing the risk of accidents and damage.

We will also seek evidence on forecasts of drone sales over the appraisal period but this is inherently difficult to predict, especially with such a young, rapidly changing market and so cannot guarantee that robust evidence can be obtained. Final analysis may need to rely heavily on assumptions

Number of accidents/injuries reported and forecast over the appraisal period

One of the benefits of the policy options is to reduce the number of breaches of safety, privacy and security laws, and thereby avoid potential damage and injury caused by drones and reduce the potential for this in future. During the consultation we will consult with Department of Health (DH), the Civil Aviation Authority (CAA), the Police and others to estimate, if data is available, the extent of these currently and how they're likely to develop in the absence of any intervention. We have no evidence to suggest that this is anything other than a minor problem at present.

Extent of current guidance provision

It is thought that some retailers and manufacturers are already providing guidance to customers on the safe use of drones. During the consultation we will seek to establish how widespread this is as this will determine the marginal impact of the policy options considered below. We will also ask retailers and manufacturers who are currently producing guidance how much it costs them. This will inform the estimates of the impact of the policy change.

Number and type of breaches of existing law and regulations governing the use of drones

Knowing the current extent of this issue will help inform the scope for improvement in this area as a result of better familiarity with the guidance. The Government is currently working to collect some data on this, but it is not available at this stage.

Option 2: Mandatory guidance provision for drones, potentially including age related guidance

At this stage there is a lot of uncertainty over what this policy would look like so it's difficult to assess what the costs and benefits would look like compared to the counterfactual. It will be important to gather evidence on these during the consultation in order to assess whether this or option 1 - do nothing - is the preferred option

Costs:

Guidance publication and dissemination

The CAA currently already produces a guidance piece known as the 'Dronecode'. The Government will consider in its consultation, in what other areas guidance is needed, and how this guidance is produced – potentially through collaboration between Government, Regulators and industry, or some other structure. Manufacturers and retailers would then be required to disseminate this guidance. It's not clear what format this would be in as yet, but once produced and made available it would be for the supply chain to make it available to their customers. We intend to use the consultation to establish the best form in which to publish/generate the guidance- leaflet, video, computer file, and gather evidence on likely costs. Combining this with data on the anticipated number of drones sold, and the number of UK manufacturer and retailers will allow us to calculate the total cost of this impact. At this stage, given anecdotal evidence on the size of the drone market in the UK and the likely low costs of issuing guidance we would not anticipate the value of this impact to be large. We will ask for evidence from the CAA and others regarding how much this guidance is likely to cost.

Familiarisation costs

This could fall to retailers or manufacturers or both depending on who issues the guidance. This is likely to affect head office and factory staff as well as those that are more customer facing. During the consultation we will seek to gather evidence on the number of drone manufacturers and retailers in the UK and the number of employees in order to monetise these costs. We'd also call for evidence on how long this familiarisation process would take and seek data on the wages of the employees involved as a measure of their time costs. Evidence from IPSOS Mori¹¹ suggests that the number of leisure and commercial use drone manufacturers in the UK is fairly small with manufacture of retail drones being focused in China and many customers buying online. They identified 13 UK manufacturers of complete units and 55 manufacturers of components. Familiarisation costs falling to UK businesses are therefore anticipated to be small and be estimated by multiplying average wages, by the number of employees needing to become familiarised with the regulations for each UK firm identified.

Cost of packaging changes

Should this be a requirement, this could impose costs on manufacturers of drones in the UK. This will depend on the package lifecycle. Firms regularly change their products' packaging even in the absence of regulatory change. If we allow firms sufficient time to bring in any mandatory labelling then they may be able to absorb the change as part of regular packaging updates. If the changes are required sooner this would impose a direct cost on them. During the consultation we will seek views on the merits of this potential policy aspect and data on the associated costs. Given the relatively small number of manufacturers in the UK we would not expect this requirement to have to a large impact, but the cost to each individual manufacturer could be quite large so overall the impact could be moderate. If the requirement is for all drones purchased in the UK must carry guidance on their packaging, the packaging for foreign made drones may need amendment for the UK market, the cost of this may be passed on to consumers creating an additional cost for UK users. Costs would be calculated by multiplying fixed costs of changing packaging design by the number of drone models sold in the UK. The per unit costs are unlikely to be significant (something else would have been printed if not the

¹¹ BIS Research Paper Number 282; Literature Review of the UK Value Stream for Remotely Piloted Civil Aircraft Systems (RPAS); April 2016; not yet published

guidance) so it is the number of types of drones rather than the quantity sold that will drive the level of costs.

Enforcement costs

Enforcement would be required under a mandatory scheme. We anticipate this would be done by the trading standards service within local authorities. There would be time costs involved in them inspecting retail premises and merchandise. These costs would be calculated in the standard way using information on likely inspection times and enforcers' wages which we would seek to gather during the consultation. In total these are not expected to be large but it would depend on the extent of inspecting as drones are sold across a range of retail stores including electrical shops and motorway service stations.

Benefits

Reduced Damage and Injury

These benefits are likely to fall to consumers using the drones, emergency services, and firms and individuals in society at large who experience fewer adverse impacts from drone use. During the consultation we will seek views on the extent to which accidents and damage to property could be reduced through mandated guidance provision. Even then it is likely that this will be very difficult to quantify due to the lack of available data. Given that the extent of current damage and injury is thought to be small, we would not expect the scope of this benefit to be large.

Better compliance with existing drone legislation

Better familiarity with the guidance should improve compliance from drone users with existing legislation governing the leisure and commercial use of drones. If so, enforcement costs to the Police and CAA should fall as infringements reduce. We do not anticipate this would have a large impact but we will seek evidence during the consultation to assess the likely magnitude and value of this impact.

Improved perception of the Drone industry

Better safety standards are likely to improve the perception of the drone industry which could spur development and improve overall productivity as other businesses make more extensive use of this innovative technology. It's difficult to estimate the magnitude of this effect and it is likely to remain unquantified even after the consultation.

Equivalent Annual Net Direct Cost to Business (EANDCB)

The nature of the net costs to business would depend on the details of the mandatory guidance provision policy but would include the following in some format:

- Cost of producing guidance if regulations stipulate that is manufacturers or retailers that are responsible for creating it.
- Disseminating guidance – either by manufacturers, retailers, or both. This could include printing leaflets, providing web-links, or changing packaging.
- Familiarisation costs – this could fall on manufacturers, retailers, or both and would reflect the time staff spend in learning the legislation and understanding what they have to do to comply with it.

We have not quantified the costs and benefits to business at this stage due to the uncertainty in the policy and lack of available data, but we will carry out a full monetised analysis of the policy

for the secondary legislation that will accompany the primary legislation. At this stage the measure will be in scope for OITO.

One in Three Out & Business Impact Target Status

If the mandatory option is followed (Option 2) and statutory guidance is produced, the policy would be a Qualifying Regulatory Provision which will score against the Business Impact Target which will be in scope of One-in, Three-out.

Rationale and evidence that justify the level of analysis used in the IA (proportionality approach);

As we are currently at consultation stage there is considerable uncertainty in the shape of the policy and this IA has therefore not considered any monetised costs and benefits. We intend to develop the policy taking account of the consultation and will also conduct analysis into the impacts of this policy as it takes shape.

There has also been limited scope to collect robust data in an industry that is still in its infancy. Whilst this consultation is live we will work closely with stakeholders to fill these data and evidence gaps in order to carry out a complete, robust analysis in the final stage IA.

Risks and Assumptions

In considering the benefits we assume that if guidance is issued, drone users would read it and act on it. If not, the possible benefits are unlikely to materialise.

If users do heed the guidance, and there is an accident, there is a risk that the government may be blamed. We would need to word the guidance in such a way as to make it clear: a) that there is still a risk associated with operating drones, even if the guidance is followed, and that the government cannot be held liable for any damage or injury caused; and b) that the guidance is not legal advice.

Analytical Assurance Statement

Given that there is no substantive quantitative analysis in this Impact Assessment given the current data limitations in the area, a formal analytical assurance statement is not required. However the document has undergone a process of peer review by an Economic Advisor to

help ensure the main affected groups and likely impacts have been captured for further investigation during and after the consultation.

Specific Impact Tests

Small and Micro Business Assessment

The majority of drone manufacturers in the UK are believed to be small or micro businesses. If regulation were to relate to manufacturers (as opposed to retailers), and these firms were exempt, the policy goal would not be achieved.

In consideration of this, the requirements will be developed with these types of businesses in mind. For example we will try to find ways of keeping down the costs of regulatory compliance.

Competition Assessment

This measure impacts all firms equally. The costs are likely to be small and although they will be relatively greater to small firms than larger manufactures or retailers, their very low absolute

values give us confidence that this measure will not have a significant impact on any firm's ability to compete.

Human Rights Impact

This measure is not expected to have any impact on people's human rights.

Justice Impact Test

This measure will provide additional guidance on the safe use of drones, to assist compliance with existing drone regulations.

Greenhouse Gases Impact Test

This measure is not expected to impact greenhouse gas emissions.

Equalities Impact Assessment

This measure is not expected to impact any particular group in a discriminatory or unfair way.

Wider Environmental Impact

This measure is not expected to impact the wider environment.

Family Test

This measure is not expected to impact families in any way that could not be justified on safety grounds.

Health Impact Assessment

This measure is not expected to impact health.

Rural Proofing Toolkit

This measure is not expected to impact those in a rural setting unfairly.

Sustainable Development

This measure is not expected to impact sustainable development.

Annex 1

Draft Costings method

The consultation will need to seek the following information for us to be able to accurately appraise the likely cost of mandated provision of information by retailers:

- Number of UK Drone retailers (Online and In store)
- Number of staff in those retailers (Online and In store)
- Number of Drones sold in the UK (Online and In store)

We will then need to make the following assumptions:

- Time taken for Head Offices/manufacturers to be familiarised with rule
- Time taken for customer facing staff to be familiarised with the rule
- Time taken to provide information at point of sale
- Hourly wages for head office staff and retailers likely taken from the Annual Survey of Hours and Earnings¹² (ASHE)

This will allow us to estimate the cost of this measure in our final stage IA as:

Number of UK drone retailers * Familiarisation time for head offices * estimated hourly wage
+
Number staff in drone retailers * familiarisation time for customer facing staff (or box packing staff for online retailers/ manufacturers) * estimated hourly wage
+
Number of drones sold in the UK * time taken by customer facing staff to provide information * estimated hourly wage

Apply relevant tax and overhead uplifts

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<http://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/bulletins/annualsurveyofhoursandearnings/previousReleases>