

Title: Registration requirements for drones IA No: RPC Reference No: DfT00359 Lead department or agency: Department for Transport Other departments or agencies: BEIS	Impact Assessment (IA)			
	Date: 25/07/2016			
	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
£NQm	£NQm	£NQm	In scope	Qualifying provision

What is the problem under consideration? Why is government intervention necessary?

Drones can pose a safety risk, and awareness of how privacy and safety laws apply to them is low. Following an accident or breach of the law, it is difficult to identify the drone owner. As drone numbers swell, this poses an increasing challenge as to how best to ensure compliance with the law and safety regulations. There is also a lack of data on UK drones numbers to inform proportional policy-making. To address these challenges, allow drone businesses to develop in a safe way and deal with public concerns, a registration scheme is a first simple step in phasing in a regulatory framework that balances potential benefits and risks.

What are the policy objectives and the intended effects?

1. Increase accountability amongst drone owners, making them aware of the laws they must comply with, with the intended effect to improve compliance.
2. Target education materials regarding safe flying and how to improve flying ability directly at those flying drones.
3. Improve drone policy-making by collecting data on the number of drones in the UK.
4. Improve enforcement of the law, by being able to identify owners of drones involved in incidents.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

There are 3 options: 1) Do not introduce a registration scheme; 2) Introduce a registration scheme in the near future (Most likely option); and 3) Introduce a registration scheme in a few years' time when the impact of the American and Irish schemes is clearer. Options 1) and 3) represent a continuation of the status quo, meaning public perception that government is not taking action to deal with the perceived menace of drones will persist, threatening and not increasing compliance with safety regulation. A later introduction of a registration scheme will also be more difficult and reduce compliance with the measure, as drone ownership and operation grows in the coming years. Introducing a registration scheme now will ensure we take full advantage of the expected benefits referenced in the supporting evidence. The Government does not have a preferred option at this stage, but believes Option 2 to be the most likely to gain support from the consultation which will be used to inform our decision.

Will the policy be reviewed? It will be reviewed. If applicable, set review date: 09/2022						
Does implementation go beyond minimum EU requirements?			No			
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 **Dat**
SELECT SIGNATORY: _____ **e:** _____

Summary: Analysis & Evidence

Policy Option 1

Description: Introduce a registration scheme in the near future

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: NQ	High: NQ	Best Estimate: NQ

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

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

Time for familiarisation and registration process for both business and leisure drone users. Registration fee for all users to recoup administration cost (conservatively set at £5). Total costs to be quantified for final stage impact assessment once we have evidence for current size and potential growth of the market. We expect a total cost of no more than £32 per user. For scale, the USA registration scheme has seen c.470,000 registrations since 21/12/2015, 98% of which are non-commercial.

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

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

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

N/A

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

Police forces and the CAA will face reduced costs in enforcing existing and incoming regulations regarding drone use through increased transparency by linking owners to drones. Drone users developing an enhanced culture of responsibility and becoming better informed about rules regarding safe and legal drone use will bring safety and social benefits. Impacts of changes to policy will be better estimated if a register of drone users is held, enabling proportionate, effective policy development.

Key assumptions/sensitivities/risks

Discount rate

N/A

The key assumption we currently lack (and therefore the reason for not quantifying the costs and benefits) is the forecast growth in firms using drones, leisure drone users and drones purchased. This is a major unknown that we hope to improve our evidence base for through the consultation. Time taken to complete registration and familiarisation will affect costs significantly, but will be controlled through policy design.

BUSINESS ASSESSMENT (Option 1)

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

Summary: Analysis & Evidence

Policy Option 2

Description: Wait to see the impact of foreign registration schemes before introducing a UK registration scheme

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: NQ	High: NQ	Best Estimate: NQ

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

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

As for Policy Option 1, time for familiarisation and registration process for both business and leisure drone users. Registration fee for all users to recoup administration cost (conservatively set at £5). Total costs to be quantified for final stage impact assessment once we have evidence for current size and potential growth of the market. Costs occur later than Policy Option 1. Given the experience of others, we may not want to introduce a registration scheme, meaning in some scenarios no cost would occur.

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

N/A

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

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

N/A

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

We would expect to see the same types of benefits as in Policy Option 1, however compliance may be reduced as there will be a larger number of drone owners, for whom registration was not required when they purchased their drone unit. This reduces the benefits of having a comprehensive register and contact list for drone owners and leads to lower benefits overall. This option has the benefit of being able to learn from other regimes to ensure our policy is designed in a way that will make it most effective.

Key assumptions/sensitivities/risks

The key assumption we currently lack (and therefore the reason for not quantifying the costs and benefits) is the forecast growth in firms using drones, leisure drone users and drones purchased. This is a major unknown that we hope to improve our evidence base for through the consultation. Time taken to complete registration and familiarisation will affect costs significantly, but will be controlled through policy design.

Discount rate

N/A

BUSINESS ASSESSMENT (Option 2)

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

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 innovative new technologies are being rapidly grown to deliver new products and services to a range of industry sectors.

The potential economic value of drones is huge. PwC estimates the value of global market for drone applications at over \$127bn by 2025 (<http://www.pwc.pl/en/publikacje/2016/clarity-from-above.html>) with the impacts for safety, efficiency and effectiveness creating further additional economic benefits.

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. Our consultation will build on our stakeholder engagement programme to identify key areas of interest and concern for all stakeholders, including the general public. In the Public Dialogues¹ the Government sponsored ensuring safety emerged as a key concern of the members of the public who participated. To address this, they suggested drones should be registered, to encourage a culture of accountability amongst drone owners, be able to directly target drone owners with educational resources to improve safety and legal compliance when flying, and improve enforcement of the law.

Other countries, such as the US and Ireland have already introduced registration schemes for such reasons. The US Scheme has attracted c.470,000 registrations, 98% of which are non-commercial users. Following an initial assessment, the Government would like to explore registration options for action in its consultation.

The ultimate goal of this policy is that by making drone users more aware of the rules that have been put in place to protect the public and increasing their accountability, compliance with such rules will increase, the costs of them being ignored will decrease and drone related business will grow in a responsible safe way. This will allow businesses to fully utilise drones to bring about the greatest possible level of economic benefits, through increases in safety, efficiency and previously unattainable novel uses.

There will be additional benefits of decreased enforcement costs in the event of an incident (as it will be easier for enforcement agencies to identify the owner of a drone) and a reduction in the number of incidents to be investigated. The costs imposed on society of improper drone use such a privacy violation and physical harm from unsafe use, will also be decreased by increased compliance with existing and new laws.

The existence of a register of drone users will provide valuable data to government to enable proportionate rule-making, ensuring that the level of regulation is appropriate for the level of drone use. We believe the total current estimation of cost (including time) of no more than £32 for each drone user to be relatively modest in comparison with these benefits. We do not believe this will represent a significant cost for business, and the registration fee (of not more than £5) should not affect the affordability of drones for leisure users, nor should the brief time to become familiar with regulations and register their ownership be disproportionate.

Problem under consideration

Drones are a new and emerging technology, which offer exciting opportunities to businesses, but are also of interest to leisure users, labelled a 'must have toy' for Christmas 2015. However, drones can also pose a safety risk to aviation and members of the public - there have been several reports of drones flying very close to planes, and in November 2015 a toddler was badly injured by a drone, losing one of his eyes. There is also some anecdotal evidence to suggest that due to the rapid development of the

¹ a series of facilitated dialogues with members of the public on drones. The report will be published alongside the consultation

technology, drone users are not familiar with all the laws that apply to drones, such as those regarding flying restrictions and data protection. In addition, if an unregistered drone (all drones above 150kg and some over 20kg already have a registration requirement in the UK) is involved in an accident, causes nuisance or is stolen, it is extremely difficult to identify the owner for the drone once it is seized. As the numbers of drones in our skies increase, this poses an increasing challenge as to how best to ensure compliance with the law and safety.

Furthermore, the drone market is currently characterised by a lack of available data on drones, such as how many there are in the UK. This makes it a challenge for Government, industry and other public bodies to correctly assess risks and opportunities and react to these appropriately, to support the development of a drone industry and market in the UK.

Rationale for intervention

A registration scheme is the first simple step to enable Government to start addressing some of the risks surrounding drones, by developing a suitable regulatory framework. It also gives a reliable source of data on drones to feed into policy-making work with industry and stakeholders as the technology develops.

The number of drones in the UK is likely to increase rapidly over the next years as technological and regulatory barriers decrease (particularly ability to operate beyond visual line of sight (BVLOS)). By acting now, Government can ensure compliance with registration requirements more easily and begin addressing some of the key risks – of which we are already seeing incidents – now.

Policy objective

1. Increase accountability amongst drone owners, making them aware of the laws they must comply with, with the intended effect to improve compliance.
2. Improve safety of drone flying and flying ability by targeting education materials directly at drone users.
3. Improve drone policy-making by collecting data on the number of drones in the UK.
4. Improve enforcement of the law, by being able to identify drones once seized.

Description of options considered

In our consultation we will set out 3 options for drone registration:

1. Do not introduce a registration scheme. (Do nothing)
2. Introduce a registration scheme in the near future (Most likely option)
3. Introduce a registration scheme in a few years' time when the impact of the American and Irish schemes is clearer and 'electronic conspicuity' of drones more widespread

In the short term options 1 and 3 both represent a continuation of the status quo. Drone users will not be required to register their ownership and no central register of drone users will be held. In the do nothing case of Option 1 public perception that government is not taking action to deal with the perceived menace of drones will persist. Waiting to introduce a scheme as in option 3 will make introduction of a registration scheme more difficult and reduce compliance with the measure, as drone ownership and operation is expected to continue to swell in the coming years. One potential upside of waiting to introduce a registration scheme is that 'electronic conspicuity' or 'identification' capability of drones where they can be electronically identified and recognised in the air, through broadcasting its presence (and potentially a registration number) to those near it, may be more widespread making the scheme more impactful. Ultimately these capabilities will allow drones to scan an area, identify where other drones are and thereby 'sense and avoid' them; it would allow a drone traffic management system to do the same in order to approve flightpaths and ensure safety; and it would also aid enforcement of the law.

Introducing a registration scheme now will ensure we take full advantage of the expected benefits such as encouraging a culture of accountability; allowing education campaigns on safety and the law to be

directly delivered to drone operators; and enabling limited enforcement now and more extensive enforcement should drones become 'electronically conspicuous' in the future. Our Public Dialogues process has indicated that a registration scheme could be strongly favoured by the public, and would also provide government and enforcement agencies with a better understanding of the extent of drone operations and the impacts of future policies.

We have not predetermined that a registration scheme is required, and are consulting with genuine interest in public and expert opinion on the need and design for such a scheme. For the purposes of this impact assessment, we believe the most likely option is to introduce a registration scheme in the near future (Option 2). The final shape of the scheme would be determined in response to information gathered from consultation. Our working assumption for the purposes of this impact assessment is that the registration scheme would:

- a. apply to all drone owners (leisure and commercial) for drones above 250g in weight
- b. require registration for drone users rather than each individual drone
- c. be administered online, through a simple self-service portal
- d. be funded by a registration fee of no more than £5, ideally less
- e. require renewal free of charge every 1 year
- f. require users mark their drones with their registration number

Monetised and non-monetised costs and benefits of each option

We have not quantified the costs or benefits due to uncertainty regarding current and future drone ownership. The drone market is rapidly developing which combined with a short time period for data makes identification of trends difficult. We will continue to develop forecasts and seek further information at consultation stage to enable us to carry out quantification for our final stage impact assessment. The following section identifies the costs and benefits of the preferred, alternative and do nothing options, and lays out the methodology we intend to use for quantification at final stage.

Option 1. Do Nothing

Although there will not be any monetary costs of failing to implement a registration scheme, regulators and enforcers will continue to lack the information they need to monitor and ensure the safe use of drones. Accounts of public anxiety may continue to grow if the government is not seen to be appropriately acting to ensure that drone use does not represent a threat to the wider public.

This option would benefit businesses and leisure users (compared to the do something cases) by minimising the need for additional paperwork, familiarisation and payment of registration fees, however they will miss out on the benefits of receiving timely accurate information relating to safe and legal drone use and of societal acceptance of drones, which could bring about new economic possibilities.

Option 2. Introduce a registration scheme in the near future. (Most Likely Option)

Introducing a registration system will bring benefits to regulators, enforcement agencies, drone users and the wider public.

For regulators and enforcement agencies being able to identify the owner of a drone in the event of an incident will aid successful enforcement of safety and privacy regulations, and encourage an increase in compliance with those rules. This development of a culture of responsibility will also benefit the public, as rules put in place for their protection will be complied with more widely. Ensuring a central register of drone users is created and kept up to date will enable government to better consider the impacts of policies on drone users, communicate with them directly and ensure that they are made aware of any developments that affect drone operation.

The benefits above are difficult to monetise, even if we are able to gather more data through consultation.

In contrast, the costs to leisure and business drone users will be clearly monetisable, once we have data on the expected growth in the drone market. These costs come in the form of familiarisation time, compliance process time and fees of a registration framework.

The following section presents the methodology we intend to use to monetise the cost impacts of a registration scheme in our final stage impact assessment. We have not been able to do this for this consultation stage impact assessment due to our lack of data on the current and future number of drone users. Sales data for drone units is not widely shared due to the commercially sensitive nature of this information. There are some figures in the public domain such as "Maplin alone sold more than 17,000 drones in the UK in the past 12 months" (<http://www.bbc.co.uk/news/uk-england-34269585>) but this gives sales for only one retailer and no indication for what proportion of units are small "toy" drones that would likely be exempted from any registration scheme. Statistics from the USA FAA registration scheme can provide an indication of the order of magnitude for current drone ownership, with 460,000 registrations since December 21st 2015. In addition to the obvious population differences (317m compared to 64m) it is unclear whether the UK market is more or less developed than the USA market.

The biggest unknown we face is the future growth of the market. The CAA has data on the number of commercial operator registrations issued. 1753 such registrations had been issued from June 2015 until June 2016, however with only one year of data, estimating a trend is not possible. We may see a low scenario, in which the limitations on drone use growth (technological, social and regulatory) mean that drone adoption slows leaving only several thousand commercial operators and the leisure market shrinks as drones are seen as a "fad". A "central" scenario in which drone use continues to accelerate at approximately the current rate may seem reasonable, but it is unclear whether a linear growth rate based on 1 year of data would accurately estimate potential growth, particularly as we are in the early stage of technology adoption, and we expect growth to increase rapidly in response to the developments in technology and regulation allowing a wider range of activities to become "drone powered". We should therefore also consider a "high scenario" representing a further acceleration of drone adoption, however here we have the question of how quickly drone use will increase, when this acceleration will occur and at which point market saturation occurs.

Given our limited evidence for UK commercial use and complete lack of data for UK leisure drone use, making unfounded forecasts for the sake of quantification, will only stand to make our analysis less robust. In the consultation we will make a call for evidence for data and estimates of current and future drone adoption, and work with disruptive technology experts across government to ensure any assumptions used in the final stage are reasonable. We will carry out sensitivity tests and present a range of scenarios, which although will not be certain bounds of potential costs and benefits, will give an indication of the expected reasonable variation.

For each scenario we will calculate the cost to business based on:

- Each firm needing to become familiarised with the requirement for registration
- Monetary cost of registration (per company)
- Time cost of registration (per company)

Depending on the evidence we can gather we will estimate these costs for an appraisal period of either five or ten years and use a standard green book discount rate of 3.5%.

The following calculations show how we will arrive at the estimates for the central scenario. Alternative scenarios will be generated by varying the assumption for the forecast number of operators as discussed above.

For each firm we estimate familiarisation costs of the new regulation by multiplying the average hourly £22.40 wage from ASHE (Uplifted by 20.2% for non-capital non-wage staff costs) by 0.5 to represent one manager spending half an hour reading and understanding the information, and then putting the steps for compliance in place. This cost of £13.46 per firm will be multiplied by the expected number of firms to provide a total familiarisation cost for the appraisal period.

Once familiar with the regulation, firms will need to complete the registration process. As described in the description of options considered, each firm/ user will be registered rather than each individual drone and users will simply mark the drone with their allocated reference number. This imposes time costs as well as a direct monetary cost of the registration fee (up to £5, but ideally less). Using the same wage rate we estimate that the time cost per firm is £13.46 assuming the registration process takes 0.5 hours. The

maximum total cost of compliance for each firm is therefore £18.46 (£13.46 + £5 registration fee) which will be multiplied by the forecast number of firms to give a total compliance cost for the appraisal period.

Combining the familiarisation and compliance costs gives a maximum firm level cost of £31.92 i.e. (familiarisation cost of £13.46 + £18.46 registration cost and maximum registration fee) which will be multiplied by the expected number of firms to give the total maximum cost to business for the appraisal period.

We expect the registration fee of up to £5, and ideally less to cover all costs for the CAA, including administration and advertising to ensure compliance, and therefore do not consider these costs separately.

By imposing a cost on operators of drones, the attractiveness of owning and using a drone may be diminished. However due to the very small cost (at most the total per firm cost of £31.92), the number of users for whom this is significant enough to put them off drone owning a drone is likely to be very small (only those for whom the net benefit of owning a drone exceeds the cost of purchase by less than the cost of familiarising and complying with the registration regulations and those for whom the £5 registration fee makes a drone no longer affordable). We therefore believe it is not proportionate to estimate an impact on producers and retailers.

Leisure users will also be subject to registration requirements and the costs that brings. The costs experienced by leisure users will have the same make up of familiarisation, compliance and fees, and be estimated in exactly the same approach as above. However estimating the correct wage rate is more difficult. We can use the average wage rate of £15.07, although the work/ leisure time decision leads to uncertainty as to whether this is appropriate.

Benefits

A registration scheme will aid enforcement of existing and incoming regulations by the CAA and Police. If Drone users are expected to mark their drones with their registration details, those involved in incidents can be better identified, reducing process costs. This should also encourage a culture of responsibility, reducing the incidence of antisocial or dangerous drone use on the general public. Although these benefits are clearly valuable, quantifying their value will not be possible, due to the inability to develop a robust counterfactual of the level of drone incidents and nuisance and the impact of registration.

A registration scheme will also provide a comprehensive contact list of drone operators. This will allow information on drone policies and education campaigns on safe and legal drone use to be communicated directly to all those affected, further increasing regulatory compliance, bringing safety benefits and reducing privacy intrusion for the general public. It will also provide improved information for the development of drone policies, enabling policymakers to better understand the potential impact of changes they make that affect drone users, helping rule-makers to ensure that the level of regulation is proportionate to drone usage. These benefits are also unlikely to be quantifiable, due to difficulty estimating the impact and value of improved information.

Option 3. Delay introduction of a registration framework.

By waiting to see how successful the registration schemes already introduced in the USA and Republic of Ireland are, we can develop our own registration scheme that builds on the strengths of those methods and takes account of their failings. Alternatively if these schemes are not seen to be successful, we could forgo introducing a registration scheme entirely.

The types of costs and benefits and those affected of this approach will be same as the preferred option (as described above), however the expected surge in drone ownership in the near future may mean that ensuring compliance is more difficult. The initial administration cost for the regulator will be greater as they require greater capacity for the initial lump sum of registrations. It also means the benefits of being able to better understand and communicate drone related policies will be missed in the short term. This is particularly significant as the regulatory landscape for drones is likely to change significantly in the coming years.

Ultimately, delaying introduction of a registration scheme leads to greater costs, and fewer benefits, whilst the benefit of being able to adopt our policy in light of evidence from elsewhere can still be reaped by making changes to an existing registration scheme previously introduced.

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

Although we have laid out the approach we would use to monetise the most significant costs to estimate the impact of this measure on business and leisure users, lack of not just robust figures, but any reasonable estimates for the current and near future growth in purchase and operation of drones means that final quantification is not possible. The rapid recent development of the market, and uncertainty about its potential growth mean that the evidence base is limited, but we will continue to identify potential sources and have added specific questions to our consultation to fill the evidence gaps we have identified.

In the consultation, we will lay out what a registration scheme in the UK could look like and use consultation questions to assess and refine its effectiveness, who would have to register, what information registration might require, how registration could be incorporated into already existing processes, how much it might cost, and how the data should be held and used.

Risks and assumptions

Due to the uncertainty regarding the future shape of the market, and the limited evidence base, there are several risks and assumptions for our analysis. To minimise the impact of these we will use the best available evidence, and carry out sensitivity tests.

Specific assumptions which will impact the final cost estimates are:

- Growth rate of drone users.
 - The small amount of data and the rapid development of the drone market means we do not currently have forecasts upon which we can base our estimate of drone usage. In addition to seeking information on this assumption in the consultation we will continue work to identify data sources and forecasting techniques in tandem with disruptive technology subject matter experts at BIS and GO science. Ultimately all other costs and benefits hinge on this assumption and underestimating uptake or erroneously forecasting exponential growth could lead to wholly inaccurate estimates of impact for the policy.
- Time taken to fill out an application.
 - The registration process is not yet finalised, however ensuring the process is intuitive and minimises burden on those registering will be key parts of the process design. We are therefore confident in our assumption that the process will take no longer than 30 minutes. In reality it should be much shorter (ideally 5-10 minutes) but this longer time allowance is used to counteract optimism bias.
- Familiarisation time.
 - Becoming aware of the new registration system and identifying the steps required for compliance will impose a cost on commercial and leisure drone users. We do not expect the legislation to be complex and the steps required to comply will be clearly communicated. This will be done by direct communication with existing registered commercial drone operators when the policy is announced and then through the commercial drone operator registration system for new operators. A publicity campaign will be required to ensure compliance of leisure users, this will be designed to clearly articulate the new requirements, to minimise familiarisation time for users.
- Wages of those responsible for familiarisation and complying with the new legislation.
 - Given the wide range of industries, sectors and firm sizes determining the wage rate of those becoming familiar with the regulation and carrying out the registration process is difficult. We have used the average wage rate including on-costs from ASHE based for managers in commercial drone companies, and all full time workers for leisure users. Given the relatively short familiarisation and compliance time costs, we expect the impact of this assumption to be fairly limited.

Direct costs and benefits to business calculations (following OITO methodology)

We have not yet monetised the costs and benefits of this policy, but intend to provide estimates of the cost to business of familiarisation, registration time and fees in our final stage impact assessment.

Wider impacts

Small and Micro Business Assessment

The majority of commercial drone operators are believed to be small or micro businesses. If regulation were to exempt these firms, the policy goals would not be achieved. We do not expect the maximum per business cost of £31.92 (including time taken) to represent an unaffordable cost, even for very small firms.

Competition Assessment

This measure impacts all firms equally, and although the very minor costs will be relatively greater to small firms than larger commercial drone operators, their very low absolute values give us confidence that this measure will not have a significant impact on any firm to compete.

Human Rights Impact

This measure is not expected to have a human rights impact / one that could not be justified.

Justice Impact Test

This measure will provide additional information about the users of drones, to aid enforcement of 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.

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.

Summary and preferred option with description of implementation plan.

As a regulatory framework is introduced to govern this new sector, we want business to develop in a responsible, safe way. This means regulation that is risk-based and proportionate, whilst ensuring safety, compliance with the law and improving enforcement. The availability of drone data will also be integral to delivering this approach when policy-making. Registration could be a vital first step in encouraging a culture of accountability amongst participants in this new technology market, improving safety by targeting drone users directly and improving enforcement, as well as collecting data.

The Government will use its planned consultation to test whether Option 2 – to introduce a registration scheme in the near future – will have the intended policy impacts, and whether there are any other unintended negative impacts. We will also consult on the details of the policy and how it will be implemented. If the proposal receives support and is deemed effective by the consultation, the Government will look to implement a registration process within the next year.