

<b>Title:</b> Proposed changes to the statutory fees for gaining patent protection.  <b>IA No:</b> BISIPO016  <b>RPC Reference No:</b> <b>Lead department or agency:</b> Intellectual Property Office ("the IPO") <b>Other departments or agencies:</b>	<b>Impact Assessment (IA)</b>			
	<b>Date:</b> 13/07/2017			
	<b>Stage:</b> Final			
	<b>Source of intervention:</b> Domestic			
	<b>Type of measure:</b> Secondary legislation			
<b>Contact for enquiries:</b> Sarah Barker (sarah.barker@ipo.gov.uk)				
<b>RPC Opinion:</b> Not Applicable				

**Summary: Intervention and Options**

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
£0m	£-39.3m	£4.1m	Not in scope	Not a regulatory provision

**What is the problem under consideration? Why is government intervention necessary?**  
 Statutory fees for applying for patent rights have not changed since 2010. Currently, the low level fees can encourage the filing of hopeless applications which are unlikely to result in a granted patent, adding to the backlogs of patent applications awaiting grant. Government intervention is needed to help shape customer behaviour and encourage the filing of clearer and better defined applications whilst discouraging the filing of hopeless applications. IPO fees will also better match the costs incurred, without moving to full cost recovery and will ensure the IPO has a sustainable income and can continue to operate effectively and efficiently as the UK's IP rights granting and policy making body.

**What are the policy objectives and the intended effects?**  
 The policy objective is to set fees at levels which can help shape customer behaviour and result in clearer, better defined applications whilst reducing the number of hopeless applications filed. The proposed fees will result in better cost recovery for the IPO but will ensure the fees for the processing of patent applications remain relatively low. The costs to the IPO of examining and granting applications will continue to be recovered by the payment of annual "renewal" fees after grant of the patent. The changes are designed to provide a sustainable income for the IPO while at the same time continuing to be structured in a way which encourages the appropriate use of the IP system as a way of promoting and supporting innovation.

**What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)**  
 Option 0: Leave current fee structure in place - not preferred, as this would not address the issues detailed above.  
 Option 1: Adjust fee levels to help shape customer behaviour and give better cost recovery (pre-consultation preferred option). This was the preferred option before consultation responses were taken into account.  
 Option 2: Adjust fee levels to give full cost recovery. This is not preferred as it would lead to substantial up-front costs for businesses and would have a clear negative impact on innovation through restricting access to the IP system.  
 Option 3: Adjust pre-grant fee levels and increase post-grant renewal fees. This is not a preferred option it would not achieve the intended shift towards prompt cost recovery to the same extent as option 4, and is unlikely to influence customer behaviour to the same extent as option 4.  
 Option 4: Adjust fee levels to help shape customer behaviour and give better cost recovery (post-consultation option). This is the preferred option as it will best achieve the aims of prompt cost recovery and influencing consumer behaviour, whilst also taking into account concerns raised during the consultation about the excess claim and pages fees by reducing the number of businesses affected by these.

<b>Will the policy be reviewed?</b> It will be reviewed. <b>If applicable, set review date:</b> 04/2023				
Does implementation go beyond minimum EU requirements?			No	
Are any of these organisations in scope?			<b>Micro</b> Yes	<b>Small</b> Yes
			<b>Medium</b> Yes	<b>Large</b> Yes
What is the CO <sub>2</sub> equivalent change in greenhouse gas emissions? (Million tonnes CO <sub>2</sub> equivalent)			<b>Traded:</b>	
			<b>Non-traded:</b>	

**I have read the Impact Assessment and I am satisfied that (a) it represents a fair and reasonable view of the expected costs, benefits and impact of the policy and (b) that the benefits justify the costs.**

**Signed by the responsible SELECT SIGNATORY:** \_\_\_\_\_ **Date:** 14/08/2017

# Summary: Analysis & Evidence

# Policy Option 1

## Description:

### FULL ECONOMIC ASSESSMENT

Price Base Year 2016	PV Base Year 2016	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: -5.3	High: 5.3	Best Estimate: 0

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional	4.3	36.7
High	Optional	4.9	41.8
Best Estimate		4.6	39.3

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

The changes are for statutory fees payable to the IPO for gaining a granted patent. These fees are payable by individuals or organisations of any size, from anywhere in the world, who choose to protect their invention through a granted patent. The costs to business are estimated to be between £4.3m and £4.9m, depending on the change in demand caused by the increase in fees.

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

To the extent that any of the discouraged applications are of reasonable quality and would otherwise have received a granted patent (i.e. the measure prevents some applications that are not hopeless), there will be a cost to these businesses of not having patent protection. The number of such applications is likely to be very small; the extent of the potential impact cannot be quantified.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional	4.3	36.7
High	Optional	4.9	41.8
Best Estimate		4.6	39.3

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

IPO will benefit from the increase in fee revenue.

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

The fee changes are designed to reduce the number of hopeless applications and result in the filing of clearer and more succinct applications. The combination of this will reduce the time taken by examiners to consider an application resulting in a reduction in the time it takes for patents to be considered and granted at the IPO. Clearer and more succinct applications will also benefit third parties who will better be able to see the nature of the invention and scope of protection.

Key assumptions/sensitivities/risks	Discount rate (%)	3.5
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An assumption has been made that the changes to the initial fees to gain a granted patent will result in a 10% drop in demand for initial applications, a 5% drop in demand for requests for searches and a 2% drop in demand for examination requests. There is a risk that the fee increases may act as a barrier to gaining patent protection but this is mitigated by the fact that any statutory fees are small in comparison to the fees businesses pay when using a patent professional to act on their behalf.

### BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs: 4.1	Benefits: 0	Net: -4.1	
			N/A

# Summary: Analysis & Evidence

# Policy Option 2

## Description:

### FULL ECONOMIC ASSESSMENT

Price Base Year <b>2016</b>	PV Base Year <b>2016</b>	Time Period Years <b>10</b>	<b>Net Benefit (Present Value (PV)) (£m)</b>		
			<b>Low:</b> Optional	<b>High:</b> Optional	<b>Best Estimate:</b> -57.7

<b>COSTS (£m)</b>	<b>Total Transition</b> (Constant Price) Years		<b>Average Annual</b> (excl. Transition) (Constant Price)	<b>Total Cost</b> (Present Value)
<b>Low</b>	Optional		Optional	Optional
<b>High</b>	Optional		<b>Optional</b>	<b>Optional</b>
<b>Best Estimate</b>	0		71.3m	614.0m

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

This option sets patent fees at levels which would ensure full cost recovery of the fees to obtain and maintain a granted patent. The costs to business are estimated to be £32m at existing levels of demand. However, as this option would introduce fee increases of over 1000%, we anticipate this will out price many users of the patent system and we anticipate at least a 50% drop in demand giving a cost to business of £16m. In addition, the sharp drop in demand and large fall in renewal fees will result in a large drop in IPO revenue of around £55.3m per year.

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

There will be non-monetised costs borne by businesses with strong inventions which would otherwise gain a patent, but who are discouraged by the high fees. These firms will lose out in the marketplace from not having this protection. The sharp reduction in renewal fees would be expected to encourage hoarding of patents with little commercial value, as renewal would become almost costless. This would prevent use of the protected technology by other firms (had the patent been allowed to lapse), to the detriment of business development and productivity growth more widely.

<b>BENEFITS (£m)</b>	<b>Total Transition</b> (Constant Price) Years		<b>Average Annual</b> (excl. Transition) (Constant Price)	<b>Total Benefit</b> (Present Value)
<b>Low</b>	<b>Optional</b>		Optional	Optional
<b>High</b>	Optional		Optional	Optional
<b>Best Estimate</b>	0		65.5m	557.1m

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

A move to full cost recovery would see a huge reduction in renewal fees from a total of £4550 to renew the patent for the 20 year lifetime to £64 for 20 years of renewals. The average patent is renewed for around 11 years at a total cost of around £1120. This would involve a reduction in fees paid of around £99m, based on the current level of renewals. However, the true benefit to business is better addressed by accounting for the expected 50% drop in demand into the baseline for renewal fees; in which case, the benefit received by those businesses who continue to use the system and obtain a granted patent is around £48.7m. The IPO would benefit from the increase in patent fees of around £16m.

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

Key assumptions/sensitivities/risks

**Discount rate (%)** **3.5**

There is a strong risk that the increased fees will act as a barrier to gaining patent protection as the costs will be prohibitive to many, especially SMEs and individuals wishing to protect their inventions so we have assumed a 50% drop in demand. The low levels of renewal fees will also not encourage patent owners to review their patent portfolios and discard those patent rights which are no longer commercially viable. This will prevent others from further developing the invention and could stifle innovation and business growth.

### BUSINESS ASSESSMENT (Option 2)

<b>Direct impact on business (Equivalent Annual) £m:</b>			<b>Score for Business Impact Target (qualifying provisions only) £m:</b>
<b>Costs:</b> 14.4	<b>Benefits:</b> 43.7	<b>Net:</b> 29.3	
			<b>N/A</b>

# Summary: Analysis & Evidence

# Policy Option 3

## Description:

### FULL ECONOMIC ASSESSMENT

Price Base Year <b>2016</b>	PV Base Year <b>2016</b>	Time Period Years <b>10</b>	<b>Net Benefit (Present Value (PV)) (£m)</b>		
			<b>Low: -17.9</b>	<b>High: -12.6</b>	<b>Best Estimate: -15.2</b>

<b>COSTS (£m)</b>	<b>Total Transition (Constant Price) Years</b>		<b>Average Annual (excl. Transition) (Constant Price)</b>	<b>Total Cost (Present Value)</b>
<b>Low</b>	Optional	20	<b>6.2</b>	53.3
<b>High</b>	Optional		<b>6.5</b>	<b>55.8</b>
<b>Best Estimate</b>	0		6.3	54.6

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

The changes are for statutory fees payable to the IPO for gaining and maintaining a granted patent. These fees are payable by individuals or organisations of any size, from anywhere in the world, who choose to protect their invention through a granted patent. Under this option, changes are made to both pre-grant application fees and post-grant renewal fees. The costs to businesses choosing to apply for or maintain patent protection are estimated to be between £6.2m and £6.5m, depending on the change in demand caused by the increase in fees.

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

To the extent that any of the discouraged applications are of reasonable quality and would otherwise have received a granted patent (i.e. the measure prevents some applications that are not hopeless), there will be a cost to these businesses of not having patent protection. The number of such applications is likely to be very small; the extent of the potential impact cannot be quantified.

<b>BENEFITS (£m)</b>	<b>Total Transition (Constant Price) Years</b>		<b>Average Annual (excl. Transition) (Constant Price)</b>	<b>Total Benefit (Present Value)</b>
<b>Low</b>	<b>Optional</b>		4.4	38.1
<b>High</b>	Optional		4.7	40.6
<b>Best Estimate</b>			4.6	39.3

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

IPO will benefit from the increase in application fee and renewal fee revenue.

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

The European Patent Office ("EPO") will also benefit through increased renewal fees, this benefit has not been included in the total benefits figures. Increased EPO revenue may allow more investment in EPO processes that will benefit users of the EPO.

#### Key assumptions/sensitivities/risks

**Discount rate (%)** **3.5**

An assumption has been made that the changes to the initial fees to gain a granted patent will result in a 10% drop in demand for initial applications, a 5% drop in demand for requests for searches and a 2% drop in demand for examination requests. There is a risk that the fee increases may act as a barrier to gaining patent protection but this is mitigated by the fact that any statutory fees are small in comparison to the fees businesses pay when using a patent professional to act on their behalf.

### BUSINESS ASSESSMENT (Option 3)

<b>Direct impact on business (Equivalent Annual) £m:</b>			<b>Score for Business Impact Target (qualifying provisions only) £m:</b>
<b>Costs: 5.7</b>	<b>Benefits: 0</b>	<b>Net: -5.7</b>	
			<b>N/A</b>

# Summary: Analysis & Evidence

# Policy Option 4

## Description:

### FULL ECONOMIC ASSESSMENT

Price Base Year <b>2016</b>	PV Base Year <b>2016</b>	Time Period Years <b>10</b>	<b>Net Benefit (Present Value (PV)) (£m)</b>		
			<b>Low: -7.3</b>	<b>High: -7.3</b>	<b>Best Estimate: -7.3</b>

<b>COSTS (£m)</b>	<b>Total Transition (Constant Price) Years</b>		<b>Average Annual (excl. Transition) (Constant Price)</b>	<b>Total Cost (Present Value)</b>
<b>Low</b>	Optional	0	4.4	38.3
<b>High</b>	Optional		4.8	41.5
<b>Best Estimate</b>	0		4.6	39.9

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

The changes are for statutory fees payable to the IPO for gaining and maintaining a granted patent. These fees are payable by individuals or organisations of any size, from anywhere in the world, who choose to protect their invention through a granted patent. Under this option, changes are made to both pre-grant application fees and post-grant renewal fees. The costs to businesses choosing to apply for or maintain patent protection are estimated to be between £4.4m and £4.8m, depending on the change in demand caused by the increase in fees.

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

To the extent that any of the discouraged applications are of reasonable quality and would otherwise have received a granted patent (i.e. the measure prevents some applications that are not hopeless), there will be a cost to these businesses of not having patent protection. The number of such applications is likely to be very small; the extent of the potential impact cannot be quantified.

<b>BENEFITS (£m)</b>	<b>Total Transition (Constant Price) Years</b>		<b>Average Annual (excl. Transition) (Constant Price)</b>	<b>Total Benefit (Present Value)</b>
<b>Low</b>	Optional		3.6	30.9
<b>High</b>	Optional		4.0	34.2
<b>Best Estimate</b>			3.8	32.6

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

IPO will benefit from the increase in application fee and renewal fee revenue.

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

The fee changes are designed to reduce the number of hopeless applications and result in the filing of clearer and more succinct applications. The combination of this will reduce the time taken by examiners to consider an application resulting in a reduction in the time it takes for patents to be considered and granted at the IPO. Clearer and more succinct applications will also benefit third parties who will better be able to see the nature of the invention and scope of protection. The European Patent Office ("EPO") will also benefit through increased renewal fees, this benefit has not been included in the total benefits figures. Increased EPO revenue may allow more investment in EPO processes that will benefit users of the EPO.

Key assumptions/sensitivities/risks	<b>Discount rate (%)</b>	<b>3.5</b>
An assumption has been made that the changes to the initial fees to gain a granted patent will result in a 10% drop in demand for initial applications, a 5% drop in demand for requests for searches and a 2% drop in demand for examination requests. There is a risk that the fee increases may act as a barrier to gaining patent protection but this is mitigated by the fact that any statutory fees are small in comparison to the fees businesses pay when using a patent professional to act on their behalf.		

#### BUSINESS ASSESSMENT (Option 3)

<b>Direct impact on business (Equivalent Annual) £m:</b>			<b>Score for Business Impact Target (qualifying provisions only) £m:</b>
<b>Costs: 4.2</b>	<b>Benefits: 0</b>	<b>Net: -4.2</b>	
			<b>N/A</b>

# Evidence Base (for summary sheets)

## Introduction – problem under consideration

Statutory fees for applying for and maintaining patent rights have not changed since 2010. Currently, the low level fees can encourage the filing of hopeless applications which are very unlikely to result in a granted patent, adding to the backlogs of patent applications awaiting grant. These backlogs can result in delays in the time it takes to gain patent protection, impacting on the economic benefits businesses can derive from their patent rights. It also creates uncertainty around the extent of the protection afforded by the patent and this can prevent further innovations being made by interested parties and competitors which can hamper further economic growth.

Government intervention is needed to help shape customer behaviour and encourage the filing of clearer and better defined applications whilst discouraging the filing of hopeless applications. Together, this will help speed up patent processing and reduce patent backlogs which will result in quicker grant time and more certainty on the scope of protection which has been awarded. In addition to this, IPO fees will better match the costs incurred, without moving to full cost recovery and will ensure the IPO has a sustainable income and can continue to operate effectively and efficiently as the UK's IP rights granting and policy making body.

## Rationale for intervention

Individuals and businesses who wish to protect their inventions are required to pay a variety of statutory fees to apply for and subsequently maintain their patent rights. These fees have not changed since 2010 and as a result, statutory fees have not kept pace with the IPO administrative costs. HM Treasury (HMT) guidelines recommend that service charging public bodies regularly review fees and adjust where appropriate.

### Patent fees

In terms of cost recovery for patent applications, it is a long-standing principle of the patents system (not just in the UK but globally) that the up-front costs for applying for patent protection are kept relatively low. This ensures that patent rights are accessible to innovative UK businesses. Once the patent is granted, annual renewal fees must be paid to maintain the patent. These are set at levels which allow the IPO to recover the costs relating to the provision and administration of the patents system in the UK (in particular the costs of searching and examining patent applications).

Whilst it is recognised that this fee structure ensures that patent rights are accessible to innovative UK businesses, the current low level of patent application fees can encourage the filing of hopeless applications which can never result in a granted patent. These applications increase the current backlog of patent applications waiting to be processed, resulting in further delays for all users. Patent backlogs are also affected by unclear and poorly defined patent applications which need further processing to ensure the scope of the patent is clearly defined.

The proposed fee increases are designed to help in several ways. Firstly, they will help shape customer behaviour as the increased cost will discourage the number of hopeless applications which are filed. Often these applications are filed not by businesses but by lone individuals who are convinced they have invented something new, when they have not. Secondly, the

introduction of additional fees for excess claims<sup>1</sup> and excess pages will result in better, more clearly defined applications as the additional fees should encourage applicants to draft more concise and clearer applications. Finally, the current fee structure results in a heavy dependency on the receipt of patent renewal fees as a way of financing the patent granting process. The IPO is looking to slightly reduce this reliance on patent renewal fees by recouping a greater percentage of the costs of processing a patent through to grant (although not moving to full cost recovery) by increasing the level of the statutory fees required to apply for a granted patent.

## **Policy objective**

In general terms, the policy objective is to set fees at levels which can help shape customer behaviour and ensure IPO fees better match the costs incurred, without moving to full cost recovery. In particular, fees for the processing of patent applications should remain relatively low, and costs to the IPO of examining and granting applications should be recovered by the payment of renewal fees.

The proposed changes are intended to ensure a smoother functioning of the patent system with fewer backlogs and greater certainty for both patent holders and interested parties in terms of the patent protection which has been granted. This will allow greater competition and encourage further innovation which together can help foster business growth.

More specifically, the fees changes are intended to do several things:

- Adjust customer behaviour so that clearer and better defined applications are filed whilst reducing the number of hopeless applications.
- Adjust fee levels so that fees for particular services/stages/processes better match costs incurred, without moving to full cost recovery. This will increase the income received at the time of processing and so reduce the reliance on renewal fees which are paid at a later date but which help with overall cost recovery.
- Provide the IPO with a sustainable income, while at the same time continuing to be structured in a way which encourages the appropriate use of the IP system as a way of promoting and supporting innovation.

The IPO has considered whether these policy objectives could be met through non-regulatory measures and activities but have concluded this would not be the case. In terms of affecting customer behaviour, the IPO carried out detailed consideration of the types of cases and applicants involved, worked with the Behavioural Insight Unit at Cabinet Office, and concluded that a package combining both non-regulatory and regulatory steps is most likely to achieve this objective – with interventions being made before, at the time of, and after filing. We have recently taken steps to increase the advice and guidance we provide to applicants prior to them filing a patent application. This includes giving:

- advice on whether patenting an invention is the most suitable and appropriate way of protecting their idea
- information on other forms of protection which may be more relevant
- information on the complexity of the patenting process
- clear guidance on the need for the applicant to take steps to enforce or defend their patent once it is granted
- improved guidance (with examples) of how to file a clear and succinct application

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<sup>1</sup> In order to gain a granted patent, the applicant must clearly define the invention they wish to protect by setting out the distinctive technical features of the invention in a series of "claims".

Once the application has been filed, we have also amended some of our internal processes and letters to help make it clear to the applicant that they are unlikely to gain a granted patent. This includes:

- clearer, more direct written advice in our letters
- taking a more proactive approach to limit the work we complete on the application by inviting applicants to withdraw their application and receive a refund of some of the fees paid on cases where the application is highly unlikely to be granted
- not issuing certain standard reminder letters to all applicants when we had previously stated that the application is unlikely to proceed to grant.

These changes are a step forward in trying to discourage the filing of and subsequently limit the processing of the hopeless applications we receive. However, as noted above, our conclusion is that our attempts to manage such applications are more effective if regulatory fee changes can support this work – giving these steps more impact and result in the desired change in customer behaviour.

In addition to this, it is of course important to note that the non-regulatory measures detailed above will not help us achieve the other key financial objectives of better matching our fees with the costs we incur in processing a patent application through to grant, reducing our reliance on renewal fees and providing the IPO with a sustainable income for the future.

## Options

### Option 0 - baseline – maintain the current fee levels

If the current fees remain unchanged, we would not meet the policy objective of adjusting customer behaviour as the low level of application fees will continue to encourage the filing of hopeless applications, which lead to backlogs and greater uncertainty for interested parties which can restrain business growth. It will also not achieve the objective of better cost recovery and reducing the reliance on renewal fees as a way of better recovering the IPO costs of running the patent process. This would introduce the risk that the IPO's financial model would no longer provide the sustainable income necessary for it to function effectively and to continue to provide a well-functioning and value-generating IP system for UK businesses.

### Option 1 – adjust fee levels to help shape customer behaviour and give better cost recovery (pre-consultation option)

This was the preferred option before consultation responses were received. It would allow the IPO to encourage the appropriate use of the IP system and improve the levels of cost recovery, both of which will help ensure a sustainable fee structure for the IPO. This would also be more in line with HM Treasury guidelines for service charging public bodies which recommends cost recovery for the services provided.

This option would introduce the following fee changes:

Patents Fee changes	Existing fee		New Fee	
	Paper	E-filed	Paper	E-filed
Application Fee	£30	£20	£90	£60
25% surcharge for paying the application fee after the filing date	N/A	N/A	£22.50	£15
Search Fee	£150	£130	£180	£150



Search Fee for an International application	£120	£100	£150	£120
Examination Fee	£100	£80	£130	£100
Excess claims fees	N/A	N/A	£30 per claim for claims over 15	
Excess pages fee	N/A	N/A	£10 per additional page over 35 pages (to be paid at initial application stage)	

### Option 2 – adjust fee levels to give full cost recovery

Introducing changes to the fees to allow the IPO to recover all of its costs at each stage of the patent process would result in huge patent application fee increases. For example, the combined upfront fees for patent application, search and examination would increase by around 1000%. This is highly likely to act as a bar to most innovative SMEs and individuals making use of the patents system. This could result in fewer innovative products and processes being successfully brought to market due to the lack of patent protection.

In addition to this, if a full cost recovery model was adopted, the annual renewal fees payable to keep a patent in force would drop to an almost negligible amount due to the low costs to the IPO of processing a renewal request. This would be the case for all renewals, even for those valuable rights that have been in force and revenue generating for over 15 years. The current fee structure for patent renewals includes higher fees at the latter end of the patent lifecycle as a way of encouraging rights holders to relinquish those rights where they are no longer valuable, making the technology free for others to use. If renewal fees were set at cost recovery levels, this is likely to result in patent rights being maintained for their full 20 year term regardless of whether the patent holder wanted to use the patent monopoly or not. This would undermine this as a key policy objective of the IP system.

### Option 3 – Adjust pre-grant fee levels and increase post-grant renewal fees

This option would increase application fees but by half the amount of option 1, and increase renewal fees by £10 a year, as shown in the tables below:

Pre-grant patent application fees	Existing fee		Option 1		Option 3	
	E-filed	Paper	E-filed	Paper	E-filed	Paper
Application Fee	£20	£30	£60	£90	£40	£60
25% surcharge for paying the application fee after the filing date	-	-	£15	£22.50	£10	£15
Search fee	£130	£150	£150	£180	£140	£165
Search fee for an international application (UK)	£100	£120	£120	£150	£110	£135
Substantive examination fee	£80	£100	£100	£130	£90	£115
Excess claims fees	-	-	£30 per claim for claims over 15		£15 per claim over 15	
Excess pages fee	-	-	£10 per additional page over 35 pages		£5 per page over 35 pages	

Patents renewal fees	Existing fee	Option 3 (add £10 to each)
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Year 5	70	80
Year 6	90	100
Year 7	110	120
Year 8	130	140
Year 9	150	160
Year 10	170	180
Year 11	190	200
Year 12	210	220
Year 13	250	260
Year 14	290	300
Year 15	350	360
Year 16	410	420
Year 17	460	470
Year 18	510	520
Year 19	560	570
Year 20	600	610

#### **Option 4 – adjust fee levels to help shape customer behaviour and give better cost recovery (post-consultation preferred option)**

##### **Change to preferred option following consultation**

A total of 23 responses to the patent fees consultation were received, including responses from representative organisations, patent attorneys, businesses, and individuals.

Respondents were generally supportive of the proposed increases to the fees for application, search and substantive examination. The Government therefore intends to proceed with the increases set out in proposals 1 and 2 of the consultation document. However there was a lack of support for the excess claims and pages fees set out in proposals 3 and 4. The Government therefore intends to adjust these proposals quite significantly, as set out below, in response to the concerns raised

##### **Details of new preferred option**

Following consultation responses that showed concern about excess claims and pages fees, Option 4 is a new option which reduces the number of businesses and individuals who would be affected by the excess claims fee, by increasing the threshold for excess claims from 15 to 25 pages. The fee is also reduced from £30 per claim to £20. The excess pages fee remains at the same level, but now is charged at the substantive examination stage. This followed a number of comments from the consultation that the fee should be part of the fee for search or substantive examination (or even as part of a fee for grant) rather than the application fee, so as to avoid “punishing” priority filings which are never searched or examined.

In order to recover costs to the IPO of the loss of revenue from these changes, the IPO will increase patent renewal fees for the 12<sup>th</sup> year of the life of a patent onwards, this will mean that the fee increase has the greatest impact on those who have the longest revenue stream from their patent. We received feedback from our consultation that this proposal of ‘back loading’ patent renewal fees will affect SMEs to a lesser extent than larger businesses.

<b>Patents Fee changes</b>	<b>Existing fee</b>		<b>New Fee</b>	
	<b>Paper</b>	<b>E-filed</b>	<b>Paper</b>	<b>E-filed</b>
Application Fee	£30	£20	£90	£60
25% surcharge for paying the application	N/A	N/A	£22.50	£15

fee after the filing date				
Search Fee	£150	£130	£180	£150
Search Fee for an International application	£120	£100	£150	£120
Examination Fee	£100	£80	£130	£100
Excess claims fees			£20 per claim for claims over 25 pages	
Excess pages fee	N/A	N/A	£10 per additional page over 35 pages (to be paid at examination stage)	
Renewal fees	N/A	N/A	£10 increase in renewal fee from the 12 <sup>th</sup> year onwards (see table below)	

Patents renewal fees	Existing fee	Option 3 (add £10 to each)
Year 12	210	220
Year 13	250	260
Year 14	290	300
Year 15	350	360
Year 16	410	420
Year 17	460	470
Year 18	510	520
Year 19	560	570
Year 20	600	610

## Impacts, costs and benefits of each option

### **Option 0: baseline – maintain the current fee levels**

Maintaining the current fee levels will have no impact on the costs or benefits to business.

### **Option 1 - adjust fee levels to give better cost recovery (pre-consultation preferred option)**

#### **COSTS**

In terms of monetary costs, the proposed fee increases result, in total, in an estimated cost in the range of £4.3m to £4.9m to users of the UK patent system, based on the forecasted changes in demand for the relevant stages of the patent process. The range in increased cost depends on the change in application, search and examination demand caused by the increase in fees, and the predicted use of patent excess claims fees and excess pages. Because the increased fees are paid to the IPO, this cost to business is offset by a benefit to Government.

Non-monetary costs are expected to be minimal. Importantly, we do not believe the proposed increases to up-front fees will significantly affect those innovative UK businesses and individuals who seek patent protection as a way of ensuring the growth of their business. We expect the reduction in demand will be accounted for by low-value, hopeless applications which would have little or no prospect of receiving a granted patent but which take examiner time and resource to process through the patent system. There is a risk that this may not be the case and we could experience a drop in demand of the high quality applications which would otherwise proceed to grant if the fees had not increased. This carries with it a risk that innovative individuals and businesses will not seek to protect their ideas which could reduce the likelihood of business success and impact on the overall economic growth of the UK.

However, we fully expect that stronger applications based on novel inventions which have market potential will be unaffected by the proposed fee increases. Inventors and SMEs with a genuine invention and the desire to exploit it commercially will almost always take legal advice from a patent attorney, before or during the patent application process. The fees for such advice dwarf the statutory fees in question (for example, we understand that with professional help, a patent application can typically cost £4,000 as opposed to the current £230 statutory fees for electronically filed applications). For such meritorious inventors, with commercial intent, the likelihood of a change in a statutory fee deterring them from pursuing patent protection is very low indeed. For example, in April 2010, we introduced changes which saw the examination fee increase by 33-40%. By this stage of the patenting process many of the hopeless applications have fallen out of the system and it is mainly the stronger applications which have a greater likelihood of achieving a granted patent which move on to the examination stage. Despite the high increases to the examination fee, we experienced no discernible impact on the number of examination requests filed.

Many individuals and businesses from outside the UK make use of the system and acquire rights in the UK, so the cost specifically to UK-owned or UK-based businesses will be significantly less than the figures shown (approximately two-thirds of patent applicants have a UK-based first-named applicant on filing<sup>2</sup>). However, according to the Green Book<sup>3</sup> the impact on business that should be estimated is the impact on firms *operating in the UK*; given that foreign firms are taking out patent protection in the UK, it is reasonable to assume they are operating in this country too. Therefore, the estimates of costs and benefits presented here are not adjusted downwards to capture only UK-owned businesses.

### ***Changes to upfront patent fees***

The patent application process is divided up into three main areas of processing – the initial application stage where the applicant files the information on the invention for which they are seeking patent protection; the search stage where a search of technical documents is undertaken to determine whether the invention (or anything similar) has been done before, and finally the examination stage to determine whether the patent application meets all of the legal requirements to be granted a patent.

In order to gain a granted patent, the applicant must file the initial application and then request that it progresses on to the search and examination stages. Based on data from the financial year 2015/2016 the estimated costs to business of the proposed fee changes are as follows:

#### Increases to the application fee

In 2015/2016, 23,000 patent applications were filed, with approximately 75% filed electronically (attracting a fee of £20) and 25% of applications filed on paper (attracting a fee of £30). If the proposed fee changes were introduced the costs of filing an initial application would increase by £60 for those applicants who file on paper and £40 for those who file using our electronic filing systems.

Using the current levels of demand as a baseline, the proposed changes would represent an overall cost to business of £1.5m – an increase of £1m. These costs have been calculated as follows:

Application type	Numbers filed	Fee	Total costs to	Increase to
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<sup>2</sup> IPO Facts and Figures:

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/526793/Facts-Figures-2014-2015.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/526793/Facts-Figures-2014-2015.pdf)

<sup>3</sup> <https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government>

			business	business
Electronic	17,312	£60	£1,038,720	£692,480
Paper	5,771	£90	£519,390	£346,260
Totals	23,082		£1,558,110	£1,038,740

However, as detailed above, the proposed fee increases are designed to encourage the appropriate use of the patents system and lead to a reduction in the number of hopeless applications filed. Based on evidence from previous economic studies<sup>4</sup>, it is likely that there will be some decline in applications when fees increase. The existing literature has not, though, covered percentage increases of the magnitude we face here. Previous estimates have implied a price elasticity of demand in the region of 0.4, which for a 200% increase in costs would imply an 80% decrease in demand; this is clearly unrealistic in a situation where fees are increasing by as little as £40. We can conclude that past studies are not robust to increases from a low base, do not take full account of the role of attorney fees in the total application cost<sup>5</sup>, and that the estimated elasticity is unlikely to be linear.

We assume an estimate of a 10% fall in demand for new applications, a 5% fall in demand for search requests and a 2% fall in demand for examination requests. This reflects the dissuasion of hopeless applications and the significant proportional increase in costs faced by private applicants who do not use the services of an attorney. Although the consultation responses gave some indication that excess claims and pages fees would lead to a fall in demand within the system, the effect could not be quantified by the responses. To reflect the significant uncertainty around the behavioural change, we have also produced cost estimates based on a lower bound of zero (i.e. no fall in demand) and an upper bound of 20% for new applications, 10% for search requests and 5% for examination requests<sup>6</sup>.

Taking into account the estimate for the fall in demand, the higher application fees would represent an overall cost to business of £1.4m; an increase of just under £935,000. These costs have been calculated as follows:

Application type	Numbers filed	Fee	Total costs to business	Increase to business
Electronic	15,581	£60	£934,800	£632,232
Paper	5194	£90	£467,451	£311,634
Totals	20775		£1,402,251	£934,866

The scenario where demand remains unchanged has already been presented above, resulting in an increased cost to business of £1m. If instead demand falls by 20%, total costs to business would be £1.24m; an increase of around £831,000. This is calculated as:

Application type	Numbers filed	Fee	Total costs to business	Increase to business
Electronic	13,850	£60	£830,976	£553,984
Paper	4,617	£90	£415,512	£277,008
Totals	18,467		£1,246,488	£830,992

### Paying the application fee later than at the time of filing

<sup>4</sup> See National Economic Research Associates "Review of UK Patent Fees" 2002 and the Centre for Economic Policy Research discussion paper NO. 7029 "On the price elasticity of demand for Patents" - [http://cepr.org/active/publications/discussion\\_papers/dp.php?dpno=7029](http://cepr.org/active/publications/discussion_papers/dp.php?dpno=7029),

<sup>5</sup> In practice, attorney fees represent the vast majority the total cost of applying for a patent.

<sup>6</sup> Note that the "lower bound" here results in the highest cost (with no adjustment from affected businesses), and conversely the "upper bound" results in the lowest cost.

Under current patent legislation, it is possible to file an initial patent application without paying the application fee. This fee can be paid up to twelve months after the date of the initial application. This ability to pay later, combined with a low application fee can also act as an incentive for the filing of hopeless applications. Currently, approximately 27% of all applications received take advantage of this option and choose to pay the application fee at a later date. The introduction of a 25% surcharge for paying the fee later, when combined with the proposed increases in the application fee, is another way in which the statutory fee levels may help encourage the appropriate use of the patent system.

We expect the introduction of a fee for late payment to lead to a significant change in applicant behaviour, as until now there has not been a charge – or even any indication that it is not appropriate – for paying after the filing date (within 12 months). It is reasonable to assume far fewer than 27% of applicants would pay late when given a strong incentive to pay on time.

To gauge the extent of behavioural change, we can observe payment patterns for renewal of existing patents, which are subject to a similar late payment surcharge. According to this data, only 1.3% of patent holders pay sufficiently late to incur the surcharge<sup>7</sup>, which from the second month past-due is only £24. Applying this figure would greatly reduce the expected cost to business; however, given the uncertainties around this estimation we have decided here to use a more cautious figure for late filing of 5%.

Therefore, assuming an overall decline in demand of 10% (our estimate for new applications) and a late-payment frequency of 5%, the total cost to business from introducing a late payment fee would be approximately £17,500.

This is based on a 75/25 ratio of electronic filings to paper filings and has been calculated as follows:

Application type	Numbers filed paying the fee later than at the time of filing	Fee	Total costs to business	Increase to business
Electronic	779	£15	<b>£11,686</b>	<b>£11,686</b>
Paper	260	£22.50	<b>£5,843</b>	<b>£5,843</b>
Totals	1,039		<b>£17,529</b>	<b>£17,529</b>

In the scenario where demand falls by 20% instead of 10%, the cost to business falls to £15,600; if demand instead holds constant the cost to business rises to £19,500.

### Increases to the search fees

In 2015/2016 17,008 requests for a patent search were filed, with approximately 75% filed electronically (attracting a fee of £130) and 25% of requests filed on paper (attracting a fee of £150). If the proposed fee changes were introduced the costs of requesting a search would increase by £30 for those applicants who file on paper and £20 for those who file using our electronic filing systems.

Using the current levels of demand as a baseline, the proposed changes would represent an overall cost to business of £2.7m – an increase of £382k. These costs have been calculated as follows:

Search request type	Numbers filed	Fee	Total costs to business	Increase to business
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<sup>7</sup> The surcharge for renewals kicks in from the second month after the due date (payment in the first month incurs no fee), after which point the fee rises for each additional month without payment over a 6 month period, after which time the patent lapses if the fee is not paid.

Electronic	12,756	£150	£1,913,400	£255,120
Paper	4,252	£180	£765,360	£127,560
Totals	17,008		£2,678,760	£382,680

As detailed above, the proposed fee increases are designed to encourage the appropriate use of the patents system and lead to a reduction in the number of hopeless applications filed. This should result in an associated decrease in demand for the number of requests for search we receive. However, we do not envisage a similar drop in demand to those forecast for initial applications and our current forecasts for searches are based on a 5% drop in demand.

To get a patent, the invention in the application must be new and not an obvious development of what has gone before. The search process identifies any prior inventions or disclosures of information (known as “prior art”) which may show that the invention cannot be patented for this reason. The current costs for a search are relatively high in comparison to the application fees and this may prevent some applicants from progressing to the search stage. However, many applicants value the quality of search produced by the IPO and use this facility as a way of identifying any prior art before they then go on to seek patent protection in other countries. As this service is valued by those companies, inventors and SMEs who wish to protect their invention and the fees involved are less than getting a similar search from a commercial company, we do not see that the relatively small increases in the costs of the search will result in as much of an impact on demand as those forecast for application fees and this is why we have based our calculations on a 5% drop in demand for searches.

Given this forecast, the proposed changes would represent an overall cost to business of £2.5m – an increase of £249k. These costs have been calculated as follows:

Search request type	Numbers filed	Fee	Total costs to business	Increase to business
Electronic	12,118	£150	£1,817,730	£242,364
Paper	4,039	£180	£727,092	£121,182
Totals	16,157		£2,544,822	£363,546

In the scenario where demand falls by 10%, the cost to business falls to £2.4m.

In addition to these search requests, the IPO also undertakes searches on applications filed on international patent applications. As an alternative to filing for patent protection in the UK only, it is possible to file for an international patent (“PCT”) application through the Patent Co-operation Treaty (PCT). This allows the applicant to file one application which will eventually end up in patents giving protection in up to 140 countries. Through this system, the applicant files one patent application which is then searched and examined by the International Bureau and the International Searching Authority who provide the applicant with the results of the search for prior art and a non-binding opinion on whether a patent can be granted.

These tasks are carried out in the “International phase” of the process and once this has been completed, the applicant then has to request entry into the “National phase” of the PCT system, where the application will be considered for its suitability under the national laws of each country prior to a patent being granted in that country. To enter the National Phase in the UK, the applicant is required to pay an application fee of £30 and a search fee of £100 for those who request a search electronically and £120 for those who file on paper.

In line with the proposed increases to search fees discussed above, we are also proposing to increase the fees for requesting a UK search on an international patent application. This will see the fees increase by £20 for electronically filed applications and by £30 for paper filed applications.

In 2015/2016, 2,577 requests for a search on an international patent application were filed. Using these current levels of demand as a baseline, the proposed changes would represent an overall cost to business of £328,560 – an increase of £57,980. These costs have been calculated as follows:

Search request type	Numbers filed	Fee	Total costs to business	Increase to business
Electronic	1,933	£120	£ 231,960	£38,660
Paper	644	£150	£ 96,600	£19,320
Totals	2,577		£ 328,560	£57,980.

If we consider a 5% decrease in demand in line with the forecasts given above, this would represent an overall cost to business of £312,120 – an increase of £55,080. These costs have been calculated as follows:

Search request type	Numbers filed	Fee	Total costs to business	Increase to business
Electronic	1,836	£120	£220,320	£36,720
Paper	612	£150	£91,800	£18,360
Totals	2448		£312,120	£55,080

In the scenario where demand falls by 10%, the increased cost to business is £52,200.

#### Increase in examination fees

In 2015/2016 12,654 requests for examination of the patent application were filed, with approximately 75% filed electronically (attracting a fee of £80) and 25% of requests filed on paper (attracting a fee of £100). If the proposed fee changes were introduced the costs of requesting an examination would increase by £30 for those applicants who file on paper and £20 for those who file using our electronic filing systems.

Using the current levels of demand as a baseline, the proposed changes would represent an overall cost to business of £1.4m – an increase of just under £285k. These costs have been calculated as follows:

Examination request type	Numbers filed	Fee	Total costs to business	Increase to business
Electronic	9,491	£100	£949,050	£189,810
Paper	3,164	£130	£411,255	£94,905
Totals	12,654		£1,360,305	£284,715

Examination of the application is the last stage of processing before the patent is granted and the applicant has to specifically request that this takes place by filing the relevant form and paying the examination fee. As discussed above, the search stage identifies whether there is any prior art which may prevent the grant of a patent. Where prior art is found, this can result in the patent application being withdrawn before proceeding to the examination stage, as applicants see no business benefit in proceeding with an application which may not be granted. From this, we can assume that those who do request an examination are confident in the likely commercial benefits they will gain from a granted patent and are happy to pay the examination fees. Many will also have paid considerable amounts in patent attorney fees by this point in the patenting process and so would not be put off by the relatively small increases we are proposing to the examination fees.



As detailed above, this assumption is based on previous experience in 2010 where we saw no discernible decrease in examination demand, despite the fact that examination fees were increased by 33-40%. Given this, we are forecasting a small decrease in demand of 2% which would result in an overall cost to business of £1.3m – an increase of £279k. These costs have been calculated as follows:

Examination request type	Numbers filed	Fee	Total costs to business	Increase to business
Electronic	9,301	£100	£930,069	£186,014
Paper	3,100	£130	£403,029	£93,007
Totals	12,401		£1,333,098	£279,021

In a scenario where demand falls by 5%, the cost to business falls to £1.3m.

### Excess claims fee

A patent must contain a set of legal statements (“claims”) which clearly define the nature and scope of the patent protection. Applicants can sometimes file large numbers of claims which can make it difficult to identify the exact nature of the invention. It also significantly increases the time needed to examine the patent application for legal compliance. This all requires additional examiner resource, to clarify the scope of the protection being sought and iron out other legal issues.

As a way of discouraging large numbers of unclear claims, the IPO is proposing to adopt a system used by many other patent offices (including the European Patent Office) and introduce a fee for each individual claim which exceeds a threshold of 15 claims in total.

In terms of the costs to business, it is envisaged that the excess claims fee will be payable at the search stage. Using as a baseline the number of search requests filed in the financial year 2015/2016 minus a 5% fall in demand, this would mean that just over 16,000 applications could be within scope of the measure (this figure would be just over 15,000 with a 10% fall in demand, or just over 17,000 with demand unchanged). According to internal IPO claims data analysed since the consultation stage Impact Assessment, around 60% of individual claims exceed this threshold, with the average application that will pay the fees having approximately 15 claims above the 15 threshold.

However, the introduction of a charge for excess claims is expected to impact upon filing behaviour, such that fewer applications breach the newly-imposed limit<sup>8</sup>. Evidence from the EPO’s introduction of a similar charge for excess claims (above a limit of 15) found that it led to a fall in the total number of excess claims of 37%.

Putting together the average number of claims, number of searches and behavioural response, gives the following estimates:

Assuming a total number of excess claims of before the fee is introduced of 147,097 (around 60% of 16,158 applications needing to pay for an additional 15 claims on average), applying the behavioural response to reduce the total by 37% yields a figure for excess claims of 92,671. This is multiplied by a fee of £30 per claim to give a total cost to business of just under £2.8m.

If demand falls by 10%, the lower number of applications would lower the total cost to business to £2.6m; whereas with no change in demand the business cost increases to £2.9m.

<sup>8</sup> It is also likely that below the new limit the number of claims on new applications rises, as the limit becomes seen as a “standard” to aim for. This was observed when the EPO introduced a fee for excess claims – the number of claims per application converged on the limit of 15 from both directions. The consequence of this convergence was lower-than-expected fees incurred by businesses, but little change in the total amount of examiner time required to process applications.

## Excess pages fee

A patent must contain a technical description of the invention, in sufficient detail to allow others to work the invention once the patent has expired. Clearly explained and defined patent applications can reduce the staff resources needed to process a patent application through to grant and result in quicker processing for patent applicants. It also helps the public to understand the technical details of the invention and the patent protection which is being sought. As a way of encouraging clearly and succinctly defined applications, the IPO is proposing to introduce a fee for each page of description filed over 35 pages. At present, our internal research has shown that around 10% of applications are over 35 pages.

Using as a baseline the number of applications filed in the financial year 2015/2016 minus the anticipated 10% fall in demand (just over 20,000 cases), around 2,200 applications might be in line to pay the charge based on current behaviour (this figure would be 1,900 if demand falls by 20%, or 2,400 if demand is unchanged). However, as with excess claims, it should be expected that the introduction of a page limit will lead those currently over the proposed limit to file shorter applications<sup>9</sup>, thereby reducing the overall cost to businesses. We do not have evidence that specifically covers a limit on the number of pages, so we re-use the proportional response to the claim limit here as a proxy for overall application length. In other words, we reduce the expected cost of the new page limit by 37% to account for the change in behaviour of applicants.

If 40 pages of description are filed (i.e. 5 excess pages per application in breach of the limit), the total cost to business would be around £68,100 (around 2,200 cases multiplied by 5 pages at £10 each, minus 37% for the behavioural response). If instead 45 pages were filed per long application (10 excess pages), the total cost to businesses rises to around £136,100 (2,200 cases multiplied by 10 pages at £10 each, minus 37% behavioural response).

If demand instead fell by 20%, the total cost to business would be a little under £60,500 for 5 excess pages per application breaching the limit, or around £121,000 for 10 excess pages.

Alternatively, assuming no change in demand the total cost to business would be just over £75,600 for 5 excess pages per application breaching the limit, or around £151,200 for 10 excess pages.

## **Non-monetary costs**

This measure is intended to prevent the filing of hopeless applications, which stand little chance of receiving a granted patent. Strong applicants should not be put off by the increase in fees, particularly as the bulk of application costs are accounted for by attorney fees. However, to the extent that some otherwise strong applications, which would otherwise have received a granted patent, are discouraged by this measure, these businesses will face a cost to their business from not having this IP protection – most likely in the form of lost sales as rivals copy and commercialise their technology.

We do not believe many businesses with otherwise strong applications would be in this situation, and are not able to quantify the financial cost of these cases. The overall impact is likely to be small.

## **BENEFITS**

### ***IPO benefits from increased up-front fees***

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<sup>9</sup> It is also likely to encourage those below the limit to file longer applications if the limit becomes seen as a “standard” to aim for, in a similar way that a limit on claims encourages convergence on the limit from both sides. This limits the saving in terms of examiner time.

The costs section above detailed the cost to businesses from increased application fees. As these higher costs are payable to the IPO, they generate offsetting benefits to Government. Depending on the expected change in demand and the precise detail of the new fees, the benefit to Government is estimated at between £4.3m and £4.9m.

### ***Non-monetary benefits***

As detailed above, the proposals for fee changes are designed to help reduce the number of hopeless applications which are received, freeing up resources to help reduce patent backlogs and speed up patent processing. This benefits those businesses making use of the patent system by reducing the time it takes to gain a granted patent.

Speeding up the patent process and reducing the time taken to gain a granted patent is also of benefit to interested parties and competitors. A granted patent clearly defines the scope of protection which has been granted, making it easier for interested parties and competitors working in the same area of technology to see whether they are likely to infringe a competitor's patent. This can lead to further innovation and development of a product, encouraging competition which can lead to economic growth.

The proposed changes also ensure the IPO remains an effective rights-granting and policy-making body which provides a well-functioning and value-generating IP system for UK businesses. This provides the benefit of a stable and high-performing IPO which can continue to administer the UK patents system in a way which is beneficial to innovators in the UK and the rest of the world.

### **Summary of costs and benefits of Option 1 (best estimate)**

*Note: We assume demand is uniform across the ten year appraisal period*

<b>Benefits</b>	<b>£m</b>
IPO – increased fee revenue from the application and examination process (detailed below in business costs)	£4.7m
Total benefits per year	£4.6m
<b>Total benefits (10 year net present value with discount rate 3.5%)</b>	<b>£39.3m</b>
<b>Costs</b>	<b>£m</b>
Business – increase in application fees	£0.9m
Business – increase in late fees	£0.02m
Business – increase in search fees	£0.4m
Business – increase in examination fees	£0.3m
Business - excess claim fees	£2.8m
Business - excess pages fees (10 pages)	£0.1m
Business - international search fee	£0.06m
Total costs (per year)	£4.6m
<b>Total costs (10 year net present value with discount rate 3.5%)</b>	<b>£39.3m</b>
<b>Net Benefit</b>	<b>£0.0m</b>

Note: figures may not sum due to rounding

## **Option 2 - adjust fee levels to give full cost recovery**

### **COSTS**

The current estimated cost to the IPO of processing a patent application through to grant is £2463 with the initial application stage costing £166, the search stage costing £972 and the examination costs being £1325. Adopting a policy of full cost recovery would therefore result in huge increases to those businesses who wish to protect their patent rights with the application fees needing to increase by 548%, search fees needing to increase by 605% and examination fees needing to increase by 1445<sup>10</sup>%.

Any move to a full cost recovery model would be applied across the range of upfront patent fees and this would see increases to the search and examination fee introduced alongside increases to the application fee as discussed in option 2 above. A move to this model would remove the need for the introduction of the additional fees for excess claims or pages which are detailed in option 2. This is because the full cost of the work of examining excess claims or detailed patent specifications would be averaged out and recovered through the fees charged across each patent application which is filed.

Given the huge increases in application, search and examination fees involved in this option, it is expected to have a large impact on demand, particularly from smaller firms and private applicants. This in itself could be considered to make the option unsuitable for the wider business population. For the purposes of this costing, we have assumed a 50% decline in applications as a result of such large changes in fees.

Applying the fee changes and 50% decline in applications to current levels of demand, and assuming a small differential discount fee of £30 to encourage people to electronically file their application, search and examination requests, a move to full cost recovery would represent a total overall cost to business of around £18m for gaining a granted patent, representing a total increase of £16m. These costs have been calculated as follows:

#### **Increases to the application fee**

The fee for filing an application is currently £20 via the electronic route and £30 if filed on paper. A move to full cost recovery would see these fees increase to £136 for electronically filed applications and £166 for paper filings. This would represent an additional cost to business of £1.4m which has been calculated as follows:

Application type	Numbers filed	Fee	Total costs to business	Increase to business
Electronic	8,656	£136	£1,177,216	£1,004,096
Paper	2886	£166	£478,993	£392,428
Totals	11,541		£1,656,209	£1,396,524

#### **Increases to the search fee**

The fee for requesting a search on a patent application is currently £130 if the request is filed electronically and £150 if filed on paper. As detailed above, a move to full cost recovery would see these fees increase to £942 for electronically filed requests and £972 for paper filings. This would represent an additional cost to business of £6.9m which has been calculated as follows:

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<sup>10</sup> These figures are weighted averages of the increases expected for electronic and paper filing routes.

Search request type	Numbers filed	Fee	Total costs to business	Increase to business
Electronic	6,378	£942	£6,008,076	£5,178,936
Paper	2,126	£972	£2,066,472	£1,747,572
Totals	8504		£8,074,548	£6,926,508

### Increases to the examination fee

The fee for requesting an examination of a patent application is currently £80 if the request is filed electronically and £100 if filed on paper. As detailed above, a move to full cost recovery would see these fees increase to £1,295 for electronically filed requests and £1,325 for paper filings. This would represent an overall cost to business of £7.7m which has been calculated as follows:

Examination request type	Numbers filed	Fee	Total costs to business	Increase to business
Electronic	4,745	£1,295	£6,145,099	£5,178,936
Paper	1,582	£1,325	£2,095,819	£1,937,644
Totals	6,327		£8,240,918	£7,703,123

### **Impact on IPO revenue**

The increases in the upfront patent fees represent a cost to business but can also be seen as a corresponding benefit to the IPO in the form of increased revenue, as discussed above. However, in this particular case the cost to Government is not symmetric. As detailed below, the benefit to business from reduced renewal fees can only be considered for those firms who continue to file and receive granted patents, after accounting for the expected 50% fall in demand. The total benefit using this reduced baseline is around £49.5m per year.

The fall in revenue to the IPO, on the other hand, would be the full amount of the decrease from before to after the change in renewal fees. Current renewal fee revenue is just under £56m per year<sup>11</sup>; moving to full cost recovery would reduce income from renewal fees to around £500,000. Therefore, the cost to Government would be around £55.3m per year in reduced renewal fee income. This asymmetry between business benefit and Government cost causes the overall NPV for this option to be significantly negative.

### **Non-monetary costs**

A move to full cost recovery would see total upfront fees for gaining a granted patent increasing from £230 for electronically filed applications and £280 for paper filed applications to £2,373 and £2,463 respectively. In comparison to other national offices, these increases would make the UK IPO one of the most expensive countries in which to gain patent protection ahead of both Australia and the US Patent Office, where overall fees for gaining a granted patent are currently the most expensive with fees in the region of £1,500 and £1,200 respectively<sup>12</sup>. It would also see UK IPO fees move closer to the fees charged by the EPO where a fee of just under £4000 gives protection in 38 countries.

Clearly setting upfront patent fees at these levels will benefit the IPO by ensuring full cost recovery of the work undertaken to process and grant patent protection. However, increasing fees by over 1,000% will be prohibitive to many innovative businesses, especially SMEs and will prevent them from protecting their valuable ideas which could affect commercial success and impact on the business growth and the economy as a whole. This would go against the policy of

<sup>11</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/545615/Annual\\_Report\\_and\\_Accounts\\_2015-16.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/545615/Annual_Report_and_Accounts_2015-16.pdf) p.67

<sup>12</sup> Based on fees and exchange rates in October 2014

making patent protection affordable in the UK and damage the UK IPO's reputation for operating and maintaining a clear and accessible IP system in the UK.

The large increases in application, search and examination fees are likely to deter a significant number of strong applications which would otherwise receive a granted patent. These discouraged applicants will face costs from not having patent protection on their invention: rivals might copy their technology if they attempt to bring their invention to market, or they might miss out on licensing revenue, for example. Either way, the lack of IP protection would mean a firm misses out on revenue from their invention. The number of businesses involved may be significant, but we are not able to quantify the impact on these firms, so this effect is included here as a non-monetised cost.

A further potential cost to this option arises from the accompanying decrease in renewal fees it entails. Renewal fees are currently set such that they rise later in a patent's life, to encourage owners to abandon those which are no longer commercially viable. This allows other firms to make use of a technology to help grow their business. If renewal fees fall sharply, to the point where renewal is effectively costless, this will encourage hoarding of patents which may have little commercial value, to the detriment of other firms which might benefit from access to the protected technology. The overall effect is a (non-monetised) cost to the wider economy.

## **BENEFITS**

### ***Business benefits from decreases in renewal fees***

A move to full cost recovery would see huge decreases in the level of fees for renewing a patent. Currently, the fees for renewing a patent range from £70 to £600. Renewal fees are currently set at levels which help recover the costs of processing a patent through to grant. They are set on an increasing sliding scale to help with the start-up costs associated with the exploitation of an invention during the early years of patent protection and to recognise the value of the monopoly which has been granted and the increasing business benefits this can bring the longer the patent is kept in force.

Higher renewal fees at the latter end of the lifetime of the patent can also encourage patent owners to give up their patent if they feel that the economic benefit is no longer viable. If they let the patent lapse, this frees up the technology for others to use and build upon, which in turn can lead to further innovation and economic growth.

If renewal fees were set at levels which reflect the costs of processing a patent renewal, this would see renewal fees set at a standard £4 for every year the patent is renewed. Assuming the 50% drop in demand under this option feeds through to renewals (i.e. good quality applications are being discouraged), this would represent a cost to business of approximately £800,000.

This figure is far lower than the total cost of £99.1m at current levels of demand and costs<sup>11</sup>(given 50% of EU patent renewal revenue is received by the EPO); however, it is difficult to regard the full amount as a saving to business (although it is recorded above as a cost to Government), as the benefit of lower fees will only accrue to those businesses who still file and receive granted patents. If we instead use as a baseline the current fee structure with the demand reduction included, the benefit to businesses in the form of reduced fees would be £48.7m (£49.5m (given 50% of renewal revenue total fees in adjusted baseline<sup>13</sup> minus the approximate £800,000 fees under the cost recovery option).

### ***IPO benefits from increased up-front fees***

The costs section above detailed the cost to businesses from the large increase in application fees. As the costs are payable to the IPO, they generate offsetting benefits to Government. Assuming a 50% fall in demand, the benefit to Government is estimated at around £16.0m per year.

A policy of setting fees to allow for full cost recovery of upfront patent fees would no longer necessitate setting renewal fees at levels which provide additional revenue to cover the costs of processing a patent through to grant. However, setting renewal fees at such low levels would not fulfil the policy of encouraging patent holders to abandon their rights and free up the technology for others to use and further develop. This could stifle innovation and be harmful to economic growth in the UK.

For these reasons, the IPO does not intend to move to full cost recovery for either the processing of patent applications through to grant or for the maintenance of patent rights.

### **Summary of the costs and benefits of Option 2 (best estimate)**

*Note: We assume demand is uniform across the ten year appraisal period*

<b>Benefits</b>	<b>£m</b>
IPO – increased fee revenue (detailed below in cost section)	£16.0m
Business – reduction in renewal fees (assuming 50% drop in demand)	£48.7m
Total benefits (per year)	£64.7m
<b>Total benefits (10 year net present value with discount rate 3.5%)</b>	<b>£557.1m</b>
<b>Costs</b>	<b>£m</b>
Business- increase in application fees	£1.4m
Business- increase in search fees	£6.9m
Business- increases in examination fees	£7.7m
IPO – reduction in renewal fees	£55.3m
Total costs (per year)	£71.3m
<b>Total costs (10 year net present value with discount rate 3.5%)</b>	<b>£614.0m</b>
<b>Net Benefit</b>	<b>-£56.8m</b>

Note: figures may not sum due to rounding

### **Option 3: Increase to application and renewal fees**

#### **COSTS**

The proposed additional cost to business from the increase in application fees would range from £2.1m to £2.4m depending on how applicant behaviour might change, based on the same assumptions as Option 1.

The increase in renewal costs would apply to all current patent holders, including those that applied through the European Patent Office. Based on 2015/16 renewal figures assuming no change going forward there were around 405,500 renewals in 2015/16 financial year, an increase in £10 would lead to an increase cost on patent holders of £4.05m per year (assuming similar numbers of renewals in future years). Of these renewals around 52,300 were from UK patents, and 353,200 were from European patents designating the UK.

### **Impact on IPO revenue**

IPO would benefit from the increase in application fees equal to the cost on applicants. For renewals the IPO would benefit by the cost of the increase for UK patents (an increase of around £523,000). However for European Patents designating the UK, 50% of the renewal fee is taken by the European Patent Office, so the IPO will only receive 50% of the increased renewal fees. Based on 2015/16 figures this would be around £1,766,000. The total increase in IPO income based on 2015/16 figures would therefore be £2,289,000 from increased renewal income. When the increases to application fees are also taken into account, the total increase to IPO revenue would be around £4.5m to £4.8m.

### **Comparison with option 1**

Option 3 would impact existing patent holders in addition to those who apply in the future for patent protection. In addition, option 3 would increase costs for those who patent through the EPO as well as those who apply for UK protection via the UK IPO. EPO applicants are more likely to be foreign applicants (based on applicant address), whereas applicants who patent through the UK IPO are more likely to be UK-based applicants.

### **BENEFITS**

The benefits of option 3 are primarily the same as for option 1.

The IPO will benefit from increased pre-grant fees (but at a smaller amount than in option 1), and through increased renewal fee income from both existing and future right holders. These are noted in the cost section.

The EPO will also benefit from the increased renewal fees for European patents designating the UK. The benefit to the EPO based on 2015/16 figures will be approximately £1.8million. This increased revenue may allow addition investment in EPO processes that will benefit users of the EPO.

### **Summary of costs and benefits of Option 3 (best estimate)**

*Note: We assume demand is uniform across the ten year appraisal period*

<b>Benefits</b>	<b>£m</b>
IPO – increased renewal fee revenue	£2.3m
IPO – increased fees from the patent application and examination process (detailed below in business costs)	£2.3m
Total benefits per year	£4.6m
<b>Total benefits (10 year net present value with discount rate 3.5%)</b>	<b>£39.3m</b>
<b>Costs</b>	<b>£m</b>
Business – increase in application fees	£0.5m



Business – increase in late fees	£0.01m
Business – increase in search fees	£0.2m
Business – increase in examination fees	£0.1m
Business - excess claim fees	£1.4m
Business - excess pages fees	£0.1m
Business - international search fee	£0.06m
Business – increase in renewal fees	£4.1m
Total costs (per year)	£6.3m
<b>Total costs (10 year net present value with discount rate 3.5%)</b>	<b>£54.6m</b>
<b>Net Benefit</b>	<b>£-15.2m</b>

Note: figures may not sum due to rounding

#### **Option 4 - adjust fee levels to give better cost recovery (post-consultation option)**

#### **COSTS**

In terms of monetary costs, the proposed fee increases result, in total, in an estimated cost in the range of £4.4m to £4.8m to users of the UK patent system, based on the forecasted changes in demand for the relevant stages of the patent process. The range in increased cost depends on the change in application, search and examination demand caused by the increase in fees, and the predicted use of patent excess claims fees and excess pages.

The increase in renewal costs would apply to all current patent holders, including those that applied through the European Patent Office. Based on 2015/16 renewal figures assuming no change going forward there were around 193,900 renewals in 2015/16 financial year, an increase in £10 would lead to an increase cost on patent holders of £1.9m per year (assuming similar numbers of renewals in future years). Of these renewals around 23,600 were from UK patents, and 170,300 were from European patents designating the UK.

#### **Differences in costs to Option 1**

##### **Excess claims fee**

A patent must contain a set of legal statements (“claims”) which clearly define the nature and scope of the patent protection. Applicants can sometimes file large numbers of claims which can make it difficult to identify the exact nature of the invention. It also significantly increases the time needed to examine the patent application for legal compliance. This all requires additional examiner resource, to clarify the scope of the protection being sought and iron out other legal issues.

As a way of discouraging large numbers of unclear claims, the IPO is proposing to adopt a system used by many other patent offices (including the European Patent Office) and introduce a fee for each individual claim which exceeds a threshold of 25 claims in total.

In terms of the costs to business, it is envisaged that the excess claims fee will be payable at the search stage. Using as a baseline the number of search requests filed in the financial year 2015/2016 minus a 5% fall in demand, this would mean that around 16,000 applications could be within scope of the measure (this figure would be around 15,300 with a 10% fall in demand, or just over 17,000 with demand unchanged). According to internal IPO claims data analysed since the consultation Impact Assessment, around 25% of individual claims exceed this

threshold of 25 claims, with the average application that will pay the fees having around 19 claims above the 25 threshold.

However, the introduction of a charge for excess claims is expected to impact upon filing behaviour, such that fewer applications breach the newly-imposed limit. Evidence from the EPO's introduction of a charge for excess claims (above a limit of 15) found that it led to a fall in the total number of excess claims of 37%. In the absence of data on a limit of 25, we assume the change will lead to a similar reduction in excess claims.

Putting together the average number of claims, number of searches and behavioural response, gives the following estimates:

Assuming a total number of excess claims of before the fee is introduced of 76,852 (25% of 16,158 applications needing to pay for an additional 19 claims on average), applying the behavioural response to reduce the total by 37% yields a figure for excess claims of 48,417. This is multiplied by a fee of £20 per claim to give a total cost to business of just under £1m.

If demand falls by 10%, the lower number of applications would lower the total cost to business to £0.9m; whereas with no change in demand the business cost increases to just over £1m.

### Excess pages fee

A patent must contain a technical description of the invention, in sufficient detail to allow others to work the invention once the patent has expired. Clearly explained and defined patent applications can reduce the staff resources needed to process a patent application through to grant and result in quicker processing for patent applicants. It also helps the public to understand the technical details of the invention and the patent protection which is being sought. As a way of encouraging clearly and succinctly defined applications, the IPO is proposing to introduce a fee for each page of description filed over 35 pages. However, following consultation, under this option, excess pages fee remains at the same level, but now is charged at the substantive examination stage. This would avoid charging those applicants who do not take their application through to this stage. Internal IPO data shows that around 10% of applications filed in 2016 contained more than 35 pages.

Using as a baseline the number of examinations filed in the financial year 2015/2016 minus the anticipated 10% fall in demand (around 12,700 cases), around 1300 applications might be in line to pay the charge based on current behaviour (this figure would be 1250 if demand falls by 20%, or around 1320 if demand is unchanged). However, as with excess claims, it should be expected that the introduction of a page limit will lead those currently over the proposed limit to file shorter applications<sup>14</sup>, thereby reducing the overall cost to businesses. We do not have evidence that specifically covers a limit on the number of pages, so we re-use the proportional response to the claim limit here as a proxy for overall application length. In other words, we reduce the expected cost of the new page limit by 37% to account for the change in behaviour of applicants.

If 40 pages of description are filed (i.e. 5 excess pages per application in breach of the limit), the total cost to business would be around £40,600 (around 1300 cases multiplied by 5 pages at £10 each, minus 37% for the behavioural response). If instead 45 pages were filed per long application (10 excess pages), the total cost to businesses rises to around £81,300 (around 1300 cases multiplied by 10 pages at £10 each, minus 37% behavioural response).

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<sup>14</sup> It is also likely to encourage those below the limit to file longer applications if the limit becomes seen as a "standard" to aim for, in a similar way that a limit on claims encourages convergence on the limit from both sides. This limits the saving in terms of examiner time.

If demand instead fell by 20%, the total cost to business would be around £39,400 for 5 excess pages per application breaching the limit, or £78,800 for 10 excess pages.

Alternatively, assuming no change in demand the total cost to business would be around £41,500 for 5 excess pages per application breaching the limit, or £82,900 for 10 excess pages.

## **Increase in renewal costs**

### **Impact on business**

The increase in renewal costs would apply to all current patent holders, including those that applied through the European Patent Office. Based on 2015/16 renewal figures assuming no change going forward there were around 193,900 renewals of patents in their twelfth year of renewal or beyond in 2015/16 financial year, an increase in £10 would lead to an increase cost on patent holders of £1.9m per year (assuming similar numbers of renewals in future years). Of these renewals around 23,600 were from UK patents, and 170,300 were from European patents designating the UK.

### **Impact on IPO revenue**

For renewals the IPO would benefit by the cost of the increase for UK patents (an increase of around £236,000). However for European Patents designating the UK, 50% of the renewal fee is taken by the European Patent Office, so the IPO will only receive 50% of the increased renewal fees. Based on 2015/16 figures this would be around £851,500. The total increase in IPO income based on 2015/16 figures would therefore be around £1,087,800 from increased renewal income. When the increases to application fees are also taken into account, the total increase to IPO revenue would be around £3.6m to £4.0m.

### **Non-monetary costs**

This measure is intended to prevent the filing of hopeless applications, which stand little chance of receiving a granted patent. Strong applicants should not be put off by the increase in fees, particularly as the bulk of application costs are accounted for by attorney fees. However, to the extent that some otherwise strong applications, which would otherwise have received a granted patent, are discouraged by this measure, these businesses will face a cost to their business from not having this IP protection – most likely in the form of lost sales as rivals copy and commercialise their technology.

We do not believe many businesses with otherwise strong applications would be in this situation, and are not able to quantify the financial cost of these cases. The overall impact is likely to be small.

## **BENEFITS**

### ***IPO benefits from increased up-front fees***

The costs section above detailed the cost to businesses from increased application fees. As these higher costs are payable to the IPO, they generate offsetting benefits to Government. Depending on the expected change in demand and the precise detail of the new fees, the benefit to Government is estimated at between £3.6m and £4.0m.

### ***EPO benefits from increased renewal fees***

The EPO will also benefit from the increased renewal fees for European patents designating the UK. The benefit to the EPO based on 2015/16 figures will be approximately £0.9 million. This increased revenue may allow additional investment in EPO processes that will benefit users of the EPO.

### ***Non-monetary benefits***

As detailed above, the proposals for fee changes are designed to help reduce the number of hopeless applications which are received, freeing up resources to help reduce patent backlogs and speed up patent processing. This benefits those businesses making use of the patent system by reducing the time it takes to gain a granted patent.

Speeding up the patent process and reducing the time taken to gain a granted patent is also of benefit to interested parties and competitors. A granted patent clearly defines the scope of protection which has been granted, making it easier for interested parties and competitors working in the same area of technology to see whether they are likely to infringe a competitor's patent. This can lead to further innovation and development of a product, encouraging competition which can lead to economic growth.

The proposed changes also ensure the IPO remains an effective rights-granting and policy-making body which provides a well-functioning and value-generating IP system for UK businesses. This provides the benefit of a stable and high-performing IPO which can continue to administer the UK patents system in a way which is beneficial to innovators in the UK and the rest of the world.

Summary of costs and benefits of Option 4 (best estimate)

*Note: We assume demand is uniform across the ten year appraisal period*

<b>Benefits</b>	<b>£m</b>
IPO – increased renewal fee revenue	£1.1m
IPO – increased fees from the patent application and examination process (detailed below in business costs)	£2.8m
Total benefits per year	£3.8m
<b>Total benefits (10 year net present value with discount rate 3.5%)</b>	<b>£32.6m</b>
<b>Costs</b>	<b>£m</b>
Business – increase in application fees	£0.9m
Business – increase in late fees	£0.02m
Business – increase in search fees	£0.4m
Business – increase in examination fees	£0.3m
Business - excess claim fees	£1.0m
Business - excess pages fees	£0.1m
Business - international fee	£0.06m
Business – increase in renewal fees	£1.9m
Total costs (per year)	£4.6m
<b>Total costs (10 year net present value with discount rate 3.5%)</b>	<b>£39.9m</b>
<b>Net Benefit</b>	<b>£-7.3m</b>

Note: figures may not sum due to rounding

## **Assumptions**

The costs to business (for options 1, 3 and 4) have been based on an assumption that the impact of the fees changes will result in a reduction in demand of around 10% on the number of applications, a 5% fall in demand for search requests and a 2% fall in demand for examination requests which were filed in the financial year 2015/2016. Generally, as many businesses make use of a patent attorney to prosecute their patent applications<sup>15</sup>, the fees charged by the IPO are a small percentage of the costs which businesses incur to gain a granted patent.

Past experience has shown that previous fee changes have resulted in relatively small or no changes in demand. However, the proposed new fee levels are designed to impact on the filing behaviour of those who use the patent system in the UK by making customers stop and consider whether applying for patent protection will be of benefit to them before they apply. Given this, we have assumed that around 10% of individuals and businesses will reduce the numbers of applications they file, around 5% will reduce the numbers of searches they request and around 2% will reduce the numbers of examination requests they make. If these assumptions prove to be an overestimate, the costs to businesses detailed above may increase slightly.

Evidence from the EPO's introduction of a charge for excess claims (above a limit of 15) found that it led to a fall in the total number of excess claims of 37%. In the absence of data on a limit of 25 (the limit chosen for option 4, we assume the change will lead to a similar reduction in excess claims. We also assume a fall in the fees paid for excess pages will fall by 37% (using excess claims evidence as a proxy for pages) due to changes in filing behaviour by applicants.

## **Risks**

For businesses seeking to protect their invention through a granted patent, there is a risk that the increase in fees will be seen as prohibitive and will act as a barrier to gaining patent protection. The risk is mitigated by the fact that any statutory fees are small in comparison to the fees that most businesses pay when using a patent professional to act on their behalf.

## **One in, Three Out**

Under the "One In, Three Out" rule, a measure that has a net cost to business must have a measure or measures of triple the equivalent cost removed in order to be implemented. Fees and charges which relate to a regulatory activity fall outside the scope of the "One In, Three Out" rule, unless the change in the level of fees and charges results from an expansion or reduction in the scope of regulatory activity.

The proposed fee changes all relate to the existing regulatory activity which is associated with the granting of patent rights and as such the costs to businesses detailed above fall outside the scope of the "One In, Three Out" rule.

## **Wider impacts**

The proposed patent fee changes are designed to reduce the number of hopeless applications which are filed. This will have a wider impact in terms of a reduction in the time it takes for patents to be granted. Examiners within the IPO will spend less time processing applications which are unlikely to get to grant and which add little benefit to the UK economy as a whole.

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<sup>15</sup> In the financial year 2015//2016, only 22% of applications were filed by private applicants who did not use the services of a professional patent attorney or patent advisor.

In addition to this, the fees for excess claims and excess pages are designed to encourage patent applicants to file succinct and clear applications. This will also have a wider impact on the time it takes examiners to consider an application and will help to speed up the patent process.

Together these impacts will help speed up patent processing and reduce patent backlogs resulting in quicker grant times. This gives greater certainty for both patent holders and interested parties around the patent protection which has been granted, making it easier for third parties working in the same area of technology to see whether they are likely to infringe a competitor's patent. This can lead to further innovation and development of a product, encouraging competition which can lead to economic growth.

## **SME impact**

The IPO most recently explored the issue of differential fees for SMEs in 2014, and concluded it was not appropriate to offer specific fee reductions. There has not been a further assessment since, but the view of the organisation has not changed. Therefore this measure will apply equally to SMEs as to larger firms.

The 2014 assessment found numerous reasons for maintaining the current fee structure, with no SME discount. To begin with, it is extremely hard to establish how SMEs currently use the patent system, as firm size is not recorded in the patent application process. The nearest approximation to SMEs is "private applicants" (PAs) – those who are not represented by an agent of any kind (such as a patent attorney). The read-across is far from exact: most PAs are likely to be SMEs, but many more SMEs do make use of representation when they apply for patents.<sup>16</sup>

Using PAs as a crude approximation to SMEs, analysis by the IPO has found applications from this cohort take up considerably more examiner time than average (between 42% and 68% longer for the 2006 application cohort), and are much less likely to reach grant (only 3.4% of applications in 2006 from PAs resulted in a granted patent, compared with 31% of non-PA applications). As the IPO structures fees such that most of its revenue comes from a tiered set of renewal fees<sup>17</sup> (which subsidise application fees to make the patent system more accessible for all applicants), differential fees for small firms risks increasing the number of weak applications, taking a disproportionate share of examiner time with poor prospects for reaching grant and breaking even. In other words, there are likely to be negative revenue effects for the IPO, potentially putting the sustainability of the patent system at risk, which outweigh the relatively modest gains from encouraging more applications from small firms.

In addition to the revenue impacts, the administrative costs and uncertainty created by an SME discount should be considered. Firms would need to declare and prove their SME status; the IPO would need to process, audit and enforce the rules. There would be potentially sizeable costs on both sides, depending on how often the SME status would need to be renewed: should it be something regularly assessed or only stated *ex ante*? What should happen if a firm outgrows the SME tag – do they lose their discount, or does it invalidate their patent? Uncertainty about invalidation risk has been a significant issue in Canada, which has an SME discount in place. This is due to a judgement given by the Canadian Federal Court of Appeal<sup>18</sup> and discussions with the Canadian Patent Office suggests that the fear that a patent could be

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<sup>16</sup> At best the category of PAs is reasonably indicative of micro business applicants

<sup>17</sup> In terms of IPO revenue, a patent will typically break even in year 15 or 16 after application; only around 1 in 4 patents are renewed for this many years, which means these 25% of successful patents subsidise the cost of the system for all others.

<sup>18</sup> <http://reports.fja.gc.ca/eng/2003/2003fca121.html>

invalidated if the SME discount is found to be improperly claimed has seemingly led to large number of potentially-eligible businesses not claiming the discount at all.

Part of the reason why SMEs might not take up a discount on application fees is that the saving on offer is relatively small compared to the overall cost of obtaining a patent. This is particularly the case for firms who make use of patent attorneys or other agents – as detailed previously, the professional fees will far exceed the IPO fees. If the proposed discount is pretty insignificant overall, firms may perceive it as not worth the hassle or risk to claim it, as appears to have happened in Canada.

As mentioned above, application fees are already set far below cost – to encourage applicants of all sizes – and subsidised by renewal fees, which are themselves structured such that the bulk of the cost is incurred later in the patent's life, when the invention has proved to be commercially successful. This means that it is those successful firms, which after 15-20 years are likely to be large, which pay the greater cost; firms with less successful inventions, which are likely to have stayed smaller, can let their patent lapse earlier and pay less. The firms who receive the greatest benefit from the IP protection (regardless of initial size) pay the largest cost, which is economically efficient.

Although the IPO does not consider fee discounts for SMEs to be justified, it is recognised that SMEs may need additional help in navigating the patent application process. In a 2011 study the World Intellectual Property Organisation found that “SMEs...are not always able to use the IP system effectively and often face a number of obstacles including limited knowledge of the system, high costs and lack of adequate legal, business and technical support for developing a successful IP strategy as part of their business strategy.”<sup>19</sup> The IPO provides extra help and guidance to PAs (including a dedicated support unit and a central enquiry unit), and takes particular care to explain the legal requirements and procedures involved in obtaining patent protection. This helps ensure that PAs understand the requirements of the system and can make an informed decision about whether or not to progress down a particular route or pay a particular fee.

During the consultation, we received a very small number of comments about the effect of the fee changes on SMEs, however there was no strong evidence that fee increases generally would have a substantial negative impact on these businesses and their ability to innovate. A few responses indicated that ‘back loading’ patent renewal fees as indicated in Option 4 will be less of a burden on smaller businesses and would be better for innovation generally (due to renewal fees only being paid on successfully granted patents, and likely to only be renewed on patents that are beneficial to the firm).

## **Summary and preferred option; implementation plan**

The preferred option is Option 4 which allows the IPO to adjust fee levels to help shape customer behaviour and give better cost recovery, whilst taking into account stakeholder views about excess claims fees proposed in Option 1 by substantially reducing their coverage from an estimated 60% of applications to 25%. The loss of revenue to IPO from this change is partially recouped through introducing a £10 increase in renewal fees for patents in their twelfth year of renewal onwards.

This will allow the IPO to encourage the appropriate use of the IP system for patent protection and improve the levels of cost recovery, both of which will help ensure a sustainable fee structure for the IPO. This would also be more in line with HM Treasury guidelines for service charging public bodies which recommends cost recovery for the services provided.

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<sup>19</sup> WIPO. (2011). *Intellectual Property (IP) Rights and Innovation in Small and Medium-Sized Enterprises*. [http://www.wipo.int/sme/en/documents/pdf/iprs\\_innovation.pdf](http://www.wipo.int/sme/en/documents/pdf/iprs_innovation.pdf), p.21

Option 3 would not be our preferred option as it would not achieve the intended shift towards prompt cost recovery to the same extent as option 4, would not fully address the balance between pre-grant application fees and post-grant renewal fees, and is unlikely to influence customer behaviour to the same extent as Option 4.

### **Post-implementation review**

The IPO plans to conduct a post-implementation review of the fee changes which will be completed by April 2023. This will involve monitoring filing behaviour using relevant administrative data in order to evaluate the changes.