



Department for  
Communities and  
Local Government

# Building regulations Part P, electrical safety in dwellings

Impact assessment

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Any enquiries regarding this document/publication should be sent to us at:

Department for Communities and Local Government  
Eland House  
Bressenden Place  
London  
SW1E 5DU  
Telephone: 030 3444 0000

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<b>Title:</b> Building Regulations Part P, Electrical safety in dwellings  <b>IA No:</b> DCLG 0084  <b>Lead department or agency:</b> Department for Communities and Local Government	<b>Impact Assessment (Impact Assessment)</b>
	<b>Date:</b> 17/12/2012
	<b>Stage:</b> Final
	<b>Source of intervention:</b> Domestic
<b>Summary: Intervention and Options</b>	<b>Type of measure:</b> Secondary legislation
	<b>RPC Opinion:</b> IA with RPC awaiting validation

Cost of Preferred (or more likely) Option				
Total Net Present Value	Business Net Present	Net cost to business per year (EANCB on	In scope of One-In, One-	Measure qualifies as
£184.3m	£120.6m	-£12.9m	Yes	Out

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

Electric shock accidents and electrical fires in the home present a health and safety risk to people. Since 1 January 2005, all electrical work in dwellings has been required to meet the minimum standards set out in Part P of the Building Regulations. In the light of representations from industry and as part of a wider review of the costs and benefits associated with the Building Regulations, DCLG is amending the regime in order to reduce cost (whilst maintaining an appropriate electrical safety regime). This will be done by introducing the option of third-party certification of work and by reducing the amount of minor work that needs to be notified to, and checked by, a building control body or third party certifier.

**What are the policy objectives and the intended effects?**

The primary objective is to ensure that electrical work in new and existing homes is carried out so as to minimise the health and safety risks associated with electric shocks and electrical fires in a proportionate and cost-effective way. The intended effect of the policy is that an effective checking regime of higher risk electrical work will continue, but costs will be reduced by moving the focus away from lower-risk types of work, and by introducing the option of third-party inspection, testing and certification of electrical work as an alternative to using a building control body. Greater promotion of the benefits of using a registered electrician will mitigate against the risks arising from reducing the scope of Part P.

**What policy options have been considered, including any alternatives to regulation?**

**Please justify preferred option (further details in Evidence Base)**

Three policy options were considered at consultation stage: 'do nothing', 'revoke Part P', and 'amend Part P to reduce costs'. The preferred option following the consultation is to amend Part P to reduce burdens. Revocation of Part P was not supported by respondents nor is it the most cost-beneficial option in this analysis.

Policy Option 0 - 'Do Nothing' has been discounted because there has been criticism that the costs of Part P could be reduced whilst retaining its effectiveness.

Policy Option 1 - 'Amend Part P' is the chosen policy option as it significantly reduces the cost to business of Part P whilst continuing to deliver health and safety benefits.

**Will the policy be reviewed? It will be reviewed. If applicable, set review date: 10/2016**

Does implementation go beyond minimum EU requirements?			No		
Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base.	<b>Micro</b> Yes	<b>&lt; 20</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> 0	<b>Non-traded:</b> 0
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***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 Minister:



Date: 17 December 12

**Building Regulations Minister**

**Rt Hon Don Foster MP**

# Summary: Analysis & Evidence

Policy Option 1

Description: Retain Part P with changes

## Full economic assessment

Price Base Year 2012	PV Base Year 2013	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: 127.5	High: 223.3	Best Estimate: 184.3

COSTS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	2.9	1	0.5	7.2
High	3.6		3.7	35.2
Best Estimate	3.2		0.5	7.2

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

Transition costs fall on electrical firms and building control bodies and have been estimated at £3.2m. Reducing the scope of notifiable work may lead to an impact on benefits delivered by Part P, which we have estimated to be £0.5m per year.

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

Part P is thought to have raised the average competence of domestic electrical installers. Reducing the scope of Part P will, at the margin, reduce the incentive to join a competent person scheme, and might reduce the benefits of training and assessment relative to the counterfactual. Part P delivers significant consumer benefits; we believe incentives to register with a competent person scheme will be maintained and therefore most consumer benefits still delivered but there is some risk attached to this under the policy.

BENEFITS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional		18.9	162.7
High	Optional		26.8	230.5
Best Estimate	0		22.2	191.6

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

The benefits are savings to those undertaking electrical work as a result of reducing the scope of notifiable electrical work (£116.1m) and savings from the introduction of third-party inspection, testing and certification of electrical work (£75.6m).

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

Changes to the Conditions of Authorisation for competent person schemes will replace annual assessments of registered installers with risk-based assessments. These benefits are reflected in the counterfactual; the estimated cost of registering with a scheme is reduced over time to reflect this change. Increased promotion of Competent person schemes will encourage householders to use registered electricians which will ultimately be a more effective way to increase the safety of installations.

**Key assumptions/sensitivities/risks****Discount rate**

3.5

The cost, of lost health and safety outcomes, arising from making more minor work non-notifiable is uncertain and therefore the assumptions have been subjected to sensitivity testing in the impact assessment. Estimates attached to the benefits are thought to be robust and have been verified through the public consultation and the additional work undertaken.

**Business assessment (Option 1)**

Direct impact on business (Equivalent Annual) £m:			In scope of	Measure
Costs: -0.3	Benefits: +14.3	Net: +14.0	Yes	OUT

# Evidence Base (for summary sheets)

## Problem under consideration

### Background on the Building Regulations

1. The Building Regulations control certain building work, principally to protect the health, safety and welfare of people in and around buildings. The Regulations set “functional” requirements – for example to make reasonable provision for energy efficiency – but do not dictate how the requirements must be met. For the benefit of both industry and building control bodies, DCLG publishes Approved Documents – containing guidance approved by the Secretary of State – showing ways of meeting the requirements for more common building situations. There may well be other ways, but following the statutory guidance in Approved Documents may be relied upon in any court proceedings as tending to indicate compliance with the Building Regulations.
2. Part P of Schedule 1 to the Building Regulations came into force on 1 January 2005 and covers the safety of electrical installations in dwellings. The Part P requirement is that “reasonable provision shall be made in the design and installation of electrical installations in order to protect persons operating, maintaining or altering the installations from fire or injury”. Approved Document P, which was updated in 2006, contains the statutory guidance demonstrating how to comply with the Part P requirement.
3. The guidance calls for all electrical work to follow the technical rules in the UK national standard BS 7671, “Requirements for electrical installations”, or an equivalent standard. In addition, it sets out procedures for inspecting and testing electrical installation work, according to the complexity of the work and the competence of the person doing the work.
4. To comply with Part P, all electrical work should follow the technical rules in BS 7671. However, only jobs considered to have the greatest risks for electrical safety are “notifiable”. These are jobs that must be either (a) notified in advance to a building control body (the local authority or a private approved inspector) so that the work can be inspected and approved, or alternatively (b) carried out by someone registered with a DCLG-authorised Part P Competent person scheme. These installers are allowed to self-certify compliance with the Building Regulations without involving a building control body (other than to notify the local authority that they have carried out the work), and no building control charges are payable. Competent person schemes monitor their members through regular inspections of their work and also provide processes that allow homeowners to follow-up any deficient work.
5. Part P notifiable jobs currently include major ones such as house rewires, replacing a consumer unit, and fitting a complete new circuit (for example, for an electric shower or cooker); and alterations in what were deemed the more hazardous locations of kitchens, bathrooms and outdoors. However, alterations elsewhere in a dwelling, and repairs and replacements anywhere, are **not** notifiable.
6. A consequence of the introduction of Part P is that firms (including sole trader and small-businesses) that carry out a significant amount of electrical work have been incentivised to register with Competent person schemes. This represents a lower cost alternative to paying building control fees on each notifiable job, the average fee being £246 per job<sup>1</sup>, and saves the time of having to complete a building notice and send it to the building control body,

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<sup>1</sup> Source EC Harris Report, based on a sample review of more than thirty local authority building control charges.

which takes approximately 15 minutes<sup>2</sup>. Before Part P came into effect there were 11,000 members of the NICEIC registration scheme and 2,000 members of the Electrical Contractors' Association in England and Wales. Now there are approaching 40,000 registered domestic electrical installers who have been assessed as competent. Membership requires that individuals have their competence to do electrical work assessed, including reviewing qualifications and industry experience, and on occasion their work is tested, for which they pay an annual registration fee to the scheme operator.

7. It is expected that the types of electrical work carried out in the home will continue to change. Government policies and consumer practices will continue to drive this – already leading, for example, to the increased use of solar photovoltaic panels and combined heat and power boilers to generate electricity, and into the future seeing a significant increase in high-current charging points for electric vehicles. Part P potentially, therefore, will play an additional role in supporting Government policies on renewables, electric vehicles and smart meters by ensuring that electrical installation work in dwellings is done competently.

## The problem

8. There can be significant health and safety risks associated with electrical work that has not been properly undertaken. In addition, there are knock-on costs through property damage and attendance by fire and rescue services as a result of fires originating in electrical installations. However, regulating electrical work to ensure minimum safety standards are achieved does impose a cost on business, particularly where there is a requirement for work to be independently inspected.

## Rationale for intervention

9. Part P was introduced in 2005 to try and reduce the number of injuries and fatalities in the home resulting from poor quality electrical work. It required that all electrical work in the home was carried out to the minimum standards developed by the electrical industry, and that higher-risk types of work be checked by a building control body or carried out by a member of a Competent person scheme who was qualified to self-certify compliance with the Building Regulations.
10. Effectively, Part P ensures that consumers can be confident that the work being done in their home by a registered electrician is to acceptable safety standards and, for work by others, that any higher-risk work is subject to scrutiny by the building control body to ensure it is adequate. As such, it extended the regulatory regime governing building work to the highest-risk type of electrical work, that is, work in the home where householders generally lack the necessary knowledge and information to ensure the work they are paying to have carried out is being done competently.
11. DCLG undertook an exercise in the latter half of 2010 to determine what changes were necessary to the Building Regulations to ensure they remained fit-for-purpose, with a particular emphasis on identifying measures to reduce the cost of regulation to business. There were 248 responses from our external partners to this exercise. In addition, DCLG drew upon ideas and suggestions submitted to the Cabinet Office's *Your Freedom* website and DCLG's own website. The report "Future changes to the Building Regulations – next steps" presents a summary and analysis of the responses.
12. The report noted that few respondents questioned the principle of regulations setting national health and safety standards for building construction. Indeed many respondents

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<sup>2</sup> We have costed this on the basis of the central wage rate used elsewhere in this impact assessment for electricians, £19.50/hr. This is based on a 50% weighting attached to estimates derived from the Annual Survey of Hours and Earnings and 50% weighting on the EC Harris fees database. We have amended this from £60/hr assumed in the consultation stage impact assessment.



recognised the positive role Building Regulations play and welcomed the fact that there is a nationally applied set of minimum requirements. There was also support for the general approach to regulating through the Building Regulations – that is, functional requirements supported by guidance in Approved Documents on how to comply.

13. However, with respect to Part P there was some criticism of its cost and bureaucracy. This concern focused on the costs associated with the regime's operation – for example, building control fees and notification – rather than concern about the cost of the work required to comply with the minimum technical standards set out in Approved Document P.
14. In the light of these concerns, Andrew Stunell set out in a Written Ministerial Statement on 16 December that DCLG would be including Part P in its 2013 review of the Building Regulations. This would examine the costs associated with the existing regulatory regime and whether there was a continuing case for regulation and, if there was, whether the regime could be made more cost-effective.

## **Policy objective**

15. The primary policy objective is to deliver adequate standards of electrical installation to ensure safety in the home in a cost-effective way.
16. The reasons for introducing Part P cited in the 2004 Regulatory Impact Assessment went beyond this – looking to improve the competence of domestic installers and the quality of electrical installation work, and to reduce, for example, the cost of damage to property in fires caused by electrical faults. Where possible we have taken these wider benefits into account in this impact assessment.

## **The options considered**

17. Three options were considered in the consultation stage Impact Assessment: 'do nothing', 'revoke Part P' and 'retain Part P with changes'.
18. In this final stage impact assessment we have analysed the chosen policy option, to retain and amend Part P, in detail, against a baseline 'do nothing' option.

### **Option 0: 'Do nothing'**

19. Option 0, "do nothing", is not preferred because it would miss the opportunity to minimise the costs currently associated with the operation of Part P.

### **Option 1: 'Amend Part P'**

20. Amending Part P is the chosen route forward as it significantly reduces the cost to business of Part P whilst continuing to deliver the safety benefits sought.
21. The two key amendments are:
  - to allow for third-party certification of electrical work; and,
  - to reduce the scope of work that must be notified to building control (or carried out by someone registered with a competent person self-certification scheme – a 'registered competent person').
22. The scope of work that is notifiable under Part P will be reduced to simplify the regime and to focus attention on more major electrical works. All work on control wiring, and all

alteration work in kitchens, in bathrooms outside the zones, and outdoors will become non-notifiable.

23. **It is vitally important to note that all electrical installation work in dwellings, even that which is not notifiable, must comply with Part P of the building regulations.** The policy does not change this requirement in any respect, only the monitoring framework that exists to police this requirement for some higher risk electrical work.
24. Third-party certification will reduce costs by allowing an unregistered electrician or a DIYer to employ a qualified, registered electrician (a 'registered third-party certifier') to inspect and test their work and confirm compliance with the building regulations, removing the need for the local authority to become involved.
25. Alternatively unregistered, but suitably qualified, electricians can do the inspection and testing themselves or employ any qualified electrician to do the inspection and testing for them. This will offer cheaper, alternative way of gaining approval by the building control body. This is primarily to address a common complaint from electricians who are not registered with a self-certification scheme (for example, because they work mainly on non-domestic buildings) and who currently can find themselves paying the full building control fee.
26. To support this, the fees regulations will also be amended to make it a requirement for a local authority to consider the qualifications of an unregistered installer in determining the level of inspection required. Although some local authorities already operate according to this principle, we expect this to increase the number of suitably qualified people who will benefit from lower building control charges.

## Response to the consultation

27. We received 158 responses to the consultation. Of these, 25% came from electrical installation firms and, reflecting the make-up of the industry, around three-quarters of these were micro-businesses of fewer than 10 people. A further 9% of respondents were firms classified as building services engineers. Responses from local authority building control accounted for 20% and homeowners were responsible for 11% of the replies. (It should be noted that many of the homeowners responded as DIYers who have undertaken electrical work and/or have some sort of electrical qualification, but who are still required to have their work approved by a building control body.) A further 11% came from national representative or trade bodies, competent person scheme operators or other professional bodies.
28. In relation to the various broad approaches that could be adopted to amend Part P, 11% supported no change, 11% revocation, 62% amendment broadly in the manner proposed, and a further 15% for amending in a significantly different way. Amending Part P broadly in the way proposed by the consultation was favoured more than average by local authority building control, building services engineers and specific interest groups. Electrical installers were slightly less in favour than average of amending the existing regime.
29. The consultation specifically sought the views and input of consultees on the analysis contained in the Impact Assessment that accompanied the consultation. In particular, the consultation asked for views on a number of the key assumptions supporting the analysis (which are drawn upon later in this assessment) as well as more general views about the robustness of the figures and analysis. We have sought to take these on board where appropriate in this Impact Assessment.

## Costs and benefits

30. In developing this Impact Assessment, DCLG has drawn upon:

- the cost/benefit methodology employed in the 2004 Regulatory Impact Assessment
- initial work undertaken for DCLG by EC Harris in February 2011 that sought to update Part P costs and benefits and a further update to this work including analysis carried out by Adroit Economics in 2012
- information provided by the Electrical Safety Council and Part P Competent person scheme operators
- information provided by expert members of the Building Regulations Advisory Committee (BRAC) Part P Technical Working Party.
- DCLG fire statistics<sup>3</sup>

31. Until 2012 the Building Regulations applied to both England and Wales and the figures in the 2004 Part P Impact Assessment reflect that. However, from 2012 the power to make these regulations in Wales has been devolved to the Welsh Assembly Government. Proposals in this Impact Assessment, which are for changes coming into force in 2013, relate to England only therefore<sup>4</sup>.

32. The key figures that inform the monetisation of options in this Impact Assessment are:

- 58,000 electrical contractors carry out 2.65 million jobs a year, of which 45% are currently notifiable
- 95% of these notifiable jobs are done by registered installers
- DIYers carry out 0.95 million jobs a year, of which 5% are currently notifiable
- the average building control charge is £246<sup>5</sup> and the accompanying building notice takes 15 minutes (and therefore costs £5) to complete (so that the total cost of submitting a notifiable job to a building control body is £251)
- the average registration fee with a Competent person scheme is £381<sup>6</sup>.
- the cost for a registered installer to notify a job to a registration body is £3.50 (£1 in time to complete the form online, and £2.50 in the fee charged by the scheme operator to send the Building Regulations compliance certificate to the householder and a notification to the local authority).

### Additional research undertaken since the consultation

33. EC Harris, in conjunction with Adroit Economics, have conducted an update study to analyse the costs of operating and of amending Part P and to revisit the most recent electrical accident statistics and other relevant sources in order to identify the benefits of Part P.

34. In addition, this final stage impact assessment also reflects the views of consultees obtained through the Part P consultation exercise. Evidence submitted through the consultation has been useful in refining the estimated costs of carrying out electrical work and inspections.

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<sup>3</sup> <http://www.communities.gov.uk/fire/researchandstatistics/firestatistics/firestatisticsuk/>

<sup>4</sup> Where applicable statistics relating to England and Wales have been adjusted by the relative populations to give an estimate for England only.

<sup>5</sup> Based on a survey of Building Control Body charges by EC Harris

<sup>6</sup> Information supplied directly to DCLG by the main scheme operators. We have also taken into account the fact that Competent person schemes will be moving to a system of risk-based inspections whereby members with very few complaints and found to be performing work of a high standard will face a reduced number of inspections and members with more complaints or for whom some issues are noted during inspections will be subject to more frequent inspections. As set out in the impact assessment for changes to the conditions of authorisation for Competent person schemes, this will reduce annual registration costs because the risk based system will focus resources more effectively, reducing the total number of inspections but also improving compliance.

# Costs and benefits of Option 0 – ‘Do nothing’

## Costs of Option 0 – ‘Do nothing’

35. There are no *additional* costs associated with this option. One of the reasons for reviewing Part P was a view, prevalent in our engagement with external partners, that the costs of Part P were too high and should be reduced.
36. The costs of operating the Part P system fall on two main groups: electricians registered with one of the competent person schemes and unregistered electricians and DIYers.
37. There are two core components to the cost of complying with Part P for registered electricians - the annual registration fee, payable to the scheme operator, and the cost associated with notifying each job to the scheme operator when it is completed.
38. In 2011 EC Harris research suggested that the average cost of registration with a competent person scheme was £381<sup>7</sup>. Membership of competent person schemes currently stands at 39,609 in England and Wales; we have assumed 37,232 are in England for the purposes of this assessment. We estimate that around 13,000 of these memberships are “voluntary” in the sense that approximately this many electricians were members of the schemes before Part P was introduced. Therefore the membership costs of operating Part P have been based on the 24,232 members assumed not to register voluntarily. This suggests a cost in year one from memberships of £10 million. The number of competent person scheme members has been rising by around 1000 memberships per annum and this is assumed to continue over time so the annual cost rises to £11 million in 2022.
39. The counterfactual for this impact assessment must be understood in the context of other changes that are already being made to the operation of the competent person schemes that are central to Part P<sup>8</sup>. In particular the surveillance activities of competent person schemes will in future be on the basis of risk-based inspection: members who have a good track record in inspections and few complaints will be subject to less frequent inspection and members with a poorer track record and/or more complaints will be subject to more frequent inspections. This will reduce the overall cost of running the scheme. This is reflected in this impact assessment in the estimated cost of registration with a competent person scheme, which is assumed to fall over time as the total number of inspections necessary is reduced<sup>9</sup>.
40. In addition, each time a registered electrician completes a job a fee is payable to the scheme operator, estimated for the purposes of this Impact Assessment as £2.50 with the time required to complete the submission costed at £1, giving a total cost per notification of £3.50. With 1,151,822 million jobs carried out per annum<sup>10</sup> the cost to registered electricians is approximately £4million per annum.
41. For unregistered contractors and DIYers the costs of complying with Part P are higher. EC Harris have conducted a survey of 31 building control bodies and have determined that the average charge for dealing with electrical work notifiable under Part P is £246. In addition, completing a building notice is estimated to take 15 minutes and therefore costs £5, giving a total of £251 per job.
42. We estimate that unregistered contractors undertake around 5% of the total number of notifiable jobs done by contractors, around 59,400 jobs. DIYers are thought to undertake

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<sup>7</sup> Link to consultation Impact Assessment

<sup>8</sup> See <http://www.communities.gov.uk/publications/planningandbuilding/conditionscompetentperson>

<sup>9</sup> We have estimated that this will reduce, in real terms, the cost of membership by £10 per year. This would still allow, in nominal terms, for the cost to remain flat or increase slightly each year.

<sup>10</sup> About 45% of electrical work is thought to be notifiable work, with 95% of this undertaken by registered contractors. Contractors undertake around 2.6million jobs per annum in total.

around 950,000 jobs per year, but given these are likely to be more minor works we assume that only 5% are notifiable (47,500 jobs).

**Table 1 – Summary Table of Costs –Current Operation of Part P**

<b>Part P - Current Operation</b>	<b>Number of firms / jobs</b>	<b>Value per firm / job</b>	<b>Year 1 Cost</b>
Part P - Annual Registration Costs	24,232	£381	£9,232,567
Registered Contractors - Cost of Complying with Part P	1,151,822	£3.50	£4,031,377
Unregistered Contractors - Cost of complying with Part P	59,400	£251	£14,909,400
DIYers - cost of complying with Part P	47,500	£251	£11,922,500
<b>Total</b>			<b>£40,095,844</b>

Source: Adroit Economics

### **Benefits of Option 0 – ‘Do nothing’**

43. There are no *additional* benefits associated with this option.
44. Establishing the benefits of Part P in its current form is difficult, partly due to lack of data, but primarily because the benefits of safer electrical work done since 2005 will only become fully apparent in the future. This is particularly true of the link between electrical installation work and electrical fires, where deficient work might take some time to degrade and become unsafe or dangerous.
45. This section discusses the benefits of the current Part P framework; establishing the potential scale of the benefits from regulation of electrical work is important as it forms the basis for understanding the impact of changing the current framework for ensuring electrical safety.
46. In the consultation stage Impact Assessment the benefits of Part P were based on the research conducted to accompany the original 2004 Regulatory Impact Assessment that was produced when Part P was first introduced. Some of the cost assumptions and other details were updated where new evidence was easily available for the consultation Impact Assessment although the benefits of the policy were not revisited. This impact assessment briefly considers again the available evidence surrounding health and safety incidents relating to electrical installations in dwellings to ensure an appropriate baseline is being used in assessing the deregulatory changes.
47. The 2004 Part P Impact Assessment estimated that annually, in dwellings in England:
  - electrical accidents caused around 41 fatalities, 2,740 serious injuries requiring hospital treatment, and damage to 6,325 properties
  - the introduction of Part P would prevent on average 7.6 of the fatalities (3.3 electric shock and 4.3 in electrical fires), 518 (409 electric shock and 109 in electrical fires) of the injuries, and fire damage to 1450 properties.
48. Fatalities and injuries have been valued in all previous analyses, and in this impact assessment, using standard values based on research conducted by the Department for Transport and widely used across Government. For this final stage impact assessment we have uprated the value of a prevented fatality (VPF) to 2012 to reflect increases in GDP per

capita over time as per DfT guidance<sup>11</sup>; the value of preventing a fatality assumed is therefore £1.67 million. Other values used to place a monetary value on avoiding death and injury are reported in table 1.

**Table 2** – Assumed values of preventing death or injury

Value of prevented fatality	£ 1,668,817
Minor injury prevented	£ 14,462
Serious injury prevented	£ 187,521
Fire and rescue costs <sup>12</sup>	£5,820

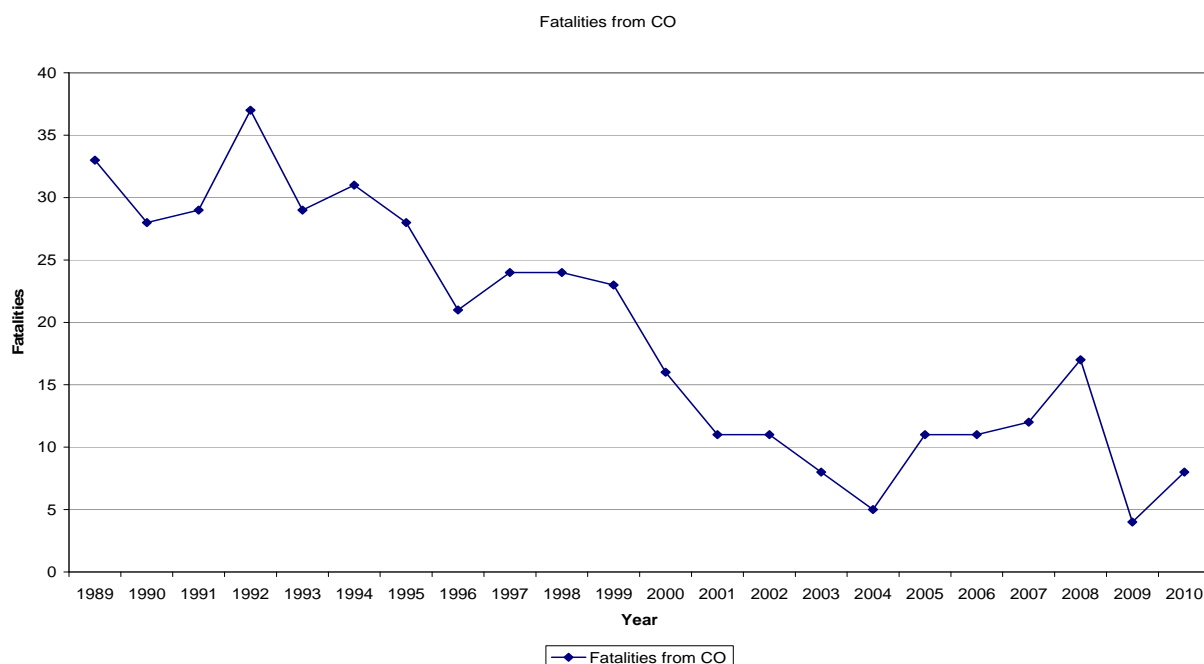
Source: Adroit Economics (figures based on DfT values)

49. Reviewing the relevant statistics on fires and on electric shocks suggests that the estimate made of the impact of Part P in the 2004 RIA may have been optimistic in some respects. The following analysis presents the most relevant statistics relating to electrical shocks in the home and to fires in the home with an electrical origin. The ultimate impact of this review has been to lower the number of fires that Part P is assumed to prevent. It should be stressed that **no new evidence has been forthcoming on the effectiveness of Part P** in relation to preventing electrical fires; the updates merely reflect that a lower base of incidents are assumed to potentially have been caused by deficient electrical work (where Part P has the *potential* to make an impact).
50. This impact assessment therefore relies on the detailed work undertaken to inform the 2004 RIA which analysed the potential for Part P style legislation to have prevented fires of an electrical origin based on a review of fire reports. This indicated that Part P style legislation could have helped to prevent around 30% of fires related to the electrical installation (and almost half of the incidents were categorised as ‘Don’t know’, suggesting there could have been even more cases where Part P type legislation *might* have helped to avert an incident).
51. Although fire and electric shock statistics suggest there may have been a decrease in incidents since 2005, data is incomplete, and it is not possible to determine how much of the fall is attributable to Part P. Accident rates would be expected to fall anyway as older installations are gradually modernised and residual current devices (which protect against the risks of severe electric shocks) are installed in more homes. Conversely, potential hazards are increasing as more electrical appliances are introduced into the home and the loading on existing circuits increases.
52. Experience of introducing regulation of domestic gas installation work via the CORGI (later Gas Safe) scheme in 1989 shows that there will be a lag between introducing such measures and observing the impact on safety. Figure 1 shows fatalities from carbon monoxide poisoning; it is clear that a review undertaken five years after introduction of the scheme would not have found clear evidence of success. But ten years on a review might have concluded that the scheme was proving successful. The same applies to Part P.

<sup>11</sup> See DfT webtag safety objective guidance for detailed information; [http://www.dft.gov.uk/webtag/documents/expert/pdf/unit3\\_4\\_1-accidents-05-12.pdf](http://www.dft.gov.uk/webtag/documents/expert/pdf/unit3_4_1-accidents-05-12.pdf)

<sup>12</sup> Based on DCLG ‘Economic Costs of Fire’, 2008, <http://www.communities.gov.uk/documents/corporate/pdf/1838338.pdf>, uprated by Adroit Economics to give a value for 2012

**Fig 1 – Fatalities from Carbon Monoxide Poisoning, 1989-2010**



Source: HSE, Gas Safety Trust, a small number of values have been interpolated where data is unavailable

## Electric shock

53. Electric shock evidence suggests that injuries are most commonly obtained whilst carrying out DIY work. One of the benefits of Part P is that it promotes the use of a competent person to householders and having a regulated standard helps to ensure that people question whether they are competent to do work before carrying it out; this can help prevent electric shock accidents that occur during DIY work.
54. The only data available on this subject is historic and taken from the Home Accident Surveillance System<sup>13</sup>. 27% of electric shock injuries for which the activity was recorded were related to 'electrical maintenance', with a further 10% of those injured engaged in other maintenance or DIY<sup>14</sup>. For electric shock incidents from mains wiring and appliances 33% of injuries were a result of electrical maintenance or DIY.
55. The same is true for fatalities from electric shock. Historic data from the Home Accident Death Database<sup>15</sup> (HADD) indicates that 33% of deaths relating to fixed wiring or appliances with a known activity over 1990-1994 were as a result of electrical DIY work and a further 25% were related to other maintenance or DIY<sup>16</sup>.
56. Residual current devices (RCDs), which will prevent most fatal electric shocks if fully functional and installed correctly, were estimated to be present in 62% of homes in 2009, compared to 40% in 2001<sup>17</sup>. There is probably an interaction between installation of RCDs and Part P itself as the latter will help to ensure good practice in electrical installations and this will include correct installation of RCDs and proper inspection and testing of devices that are already part of an installation.

<sup>13</sup> A former DTI statistical collection

<sup>14</sup> Data from HASS for 1990-1995

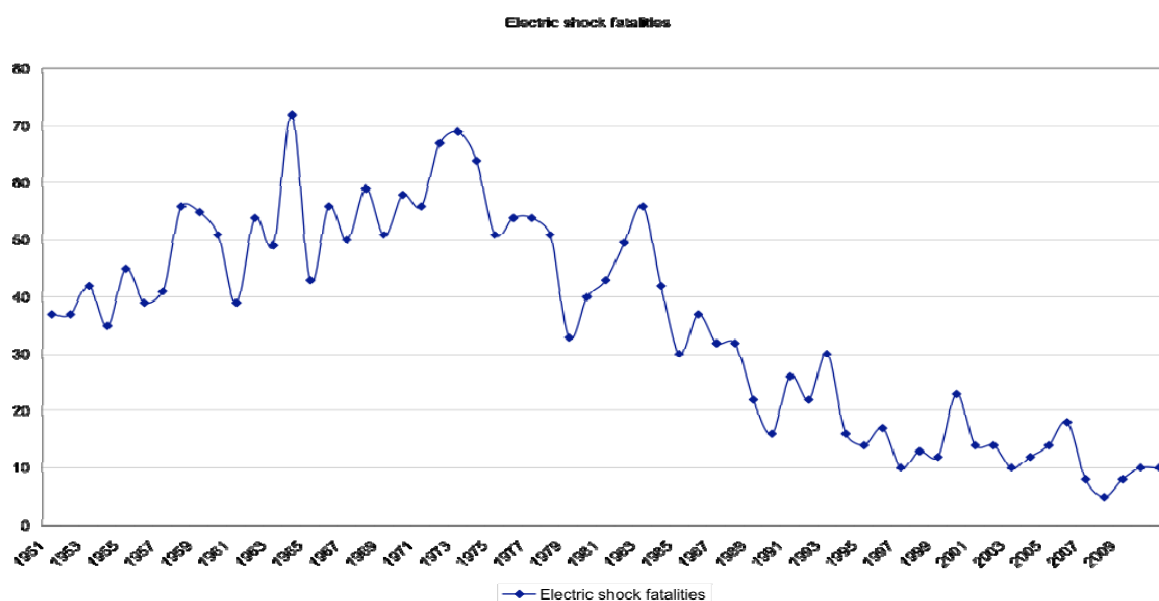
<sup>15</sup> Another former DTI statistical collection

<sup>16</sup> Data from HADD for 1990-1995

<sup>17</sup> <http://www.communities.gov.uk/documents/statistics/xls/1937391.xls>

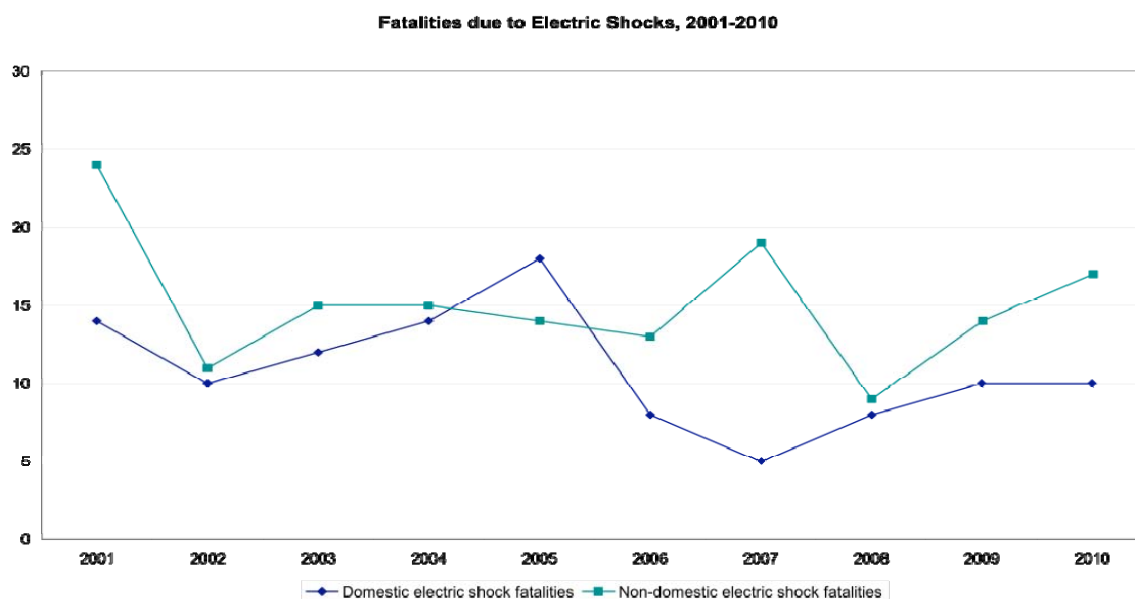
57. For electric shock incidents we have conducted an econometric analysis on the longest time series data available on electric shock fatalities<sup>18</sup> but this analysis does not allow the impact of Part P to be separated from the general trend of improving safety. Furthermore the number of incidents is low and not well suited to this type of analysis. Since so many other variables are changing for which we do not have data, it is not possible to conclude from this definitively that Part P has or has not had an impact on health and safety outcomes. Furthermore, only a proportion of the housing stock will have had electrical work carried out since Part P was introduced so the benefits are likely to continue to build up over time.

**Figure 2 - Long term trend in electric shock fatalities in England and Wales, 1951-2009**



Source: HADD, ONS mortality statistics

**Figure 3 - Short term trend in electric shock fatalities in England and Wales, 2001-2010**



Source: ONS mortality statistics

<sup>18</sup> Using data from ONS fatality statistics and the discontinued DTI Home Accident Deaths Database



58. Figure 2 presents ONS mortality data on the number of domestic and non-domestic fatalities from electric shock. EC Harris and Adroit Economics have used the data in figure 2 as an indication of the number of incidents that might be avoided as a result of Part P. For non-domestic works there was no change in the data looking at 2001-2005 and 2006-2010. However, for domestic works, which are controlled by Part P, the average number of incidents in the two periods fell from 13.6 per annum over 2001-2005 to 8.2 per annum over 2006-2010, a decrease of 5.4 (or around 5.0 adjusting figures for England and Wales to give an England only estimate).
59. In their report Adroit Economics have assumed that 50% of the decrease could be attributable to Part P with 50% of the decrease attributable to other factors such as increasing installation of RCDs. This estimate is clearly uncertain and we have subjected this assumption to sensitivity testing later in the Impact Assessment<sup>19</sup>.
60. This leads to an overall estimate that Part P prevents 2.5 electric shock fatalities per year. This figure corresponds to the estimate made in the 2004 RIA and reused in the consultation stage Impact Assessment that Part P would prevent 3.3 electric shock fatalities per year.
61. In terms of electric shock injuries the best available evidence remains the information from the HASS which suggested that on average between 1990 and 2002 there were 593 electric shock accidents from the fixed wiring and 1621 from portable appliances. As in the 2004 RIA the best available evidence remains that 30% of mains wiring incidents might be avoided as a result of Part P with 15% of portable appliance incidents also avoided.
62. Hospital Episode Statistics Online now publishes experimental statistics on A&E admissions. This is available from 2007-08 and does appear to show a downward trend. This data must be treated with caution however as they only cover around 75% of A&E admissions and include a large number of invalid records. Since this dataset would include both domestic and non-domestic incidents it does seem to correspond reasonably well with the information based on the HASS.

**Table 3 – A&E admissions due to electric shock**

Year	Number of electric shock hospital admissions
2008/09	4,021
2009/10	3,514
2010/11	3,341

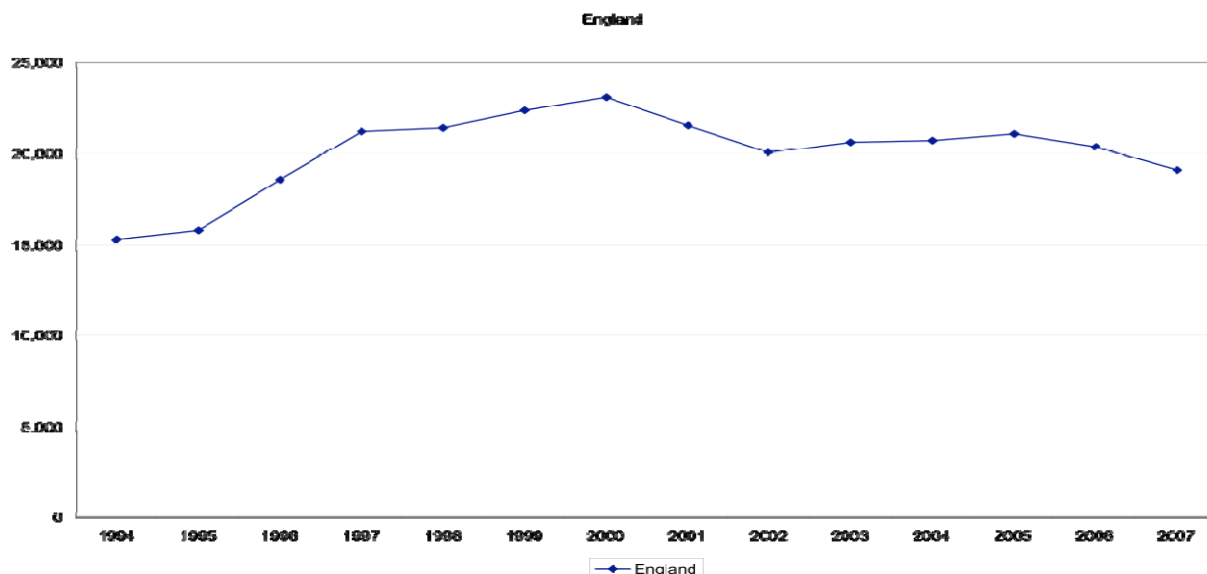
Source: <http://www.hesonline.nhs.uk/Ease/servlet/ContentServer?siteID=1937>

## Electrical fires

63. Figure 4 shows the number of fires of an electrical origin in England. There is a decrease after 2005, although this dataset includes a large number of incidents where the installation would not have been at fault; electric cooker fires would, for instance, be counted within this total and so it is not ideally suited to addressing the impact of Part P.

<sup>19</sup> The 2004 RIA estimated that 13% of the housing stock would have some form of electrical work undertaken each year<sup>19</sup>. If there is no relation between whether a property has electrical work in one year with whether it has electrical work in the following year then this would suggest that around 60% of the dwelling stock would have had some form of electrical work carried out since the introduction of Part P, which helps to establish the reasonableness of this assumption.

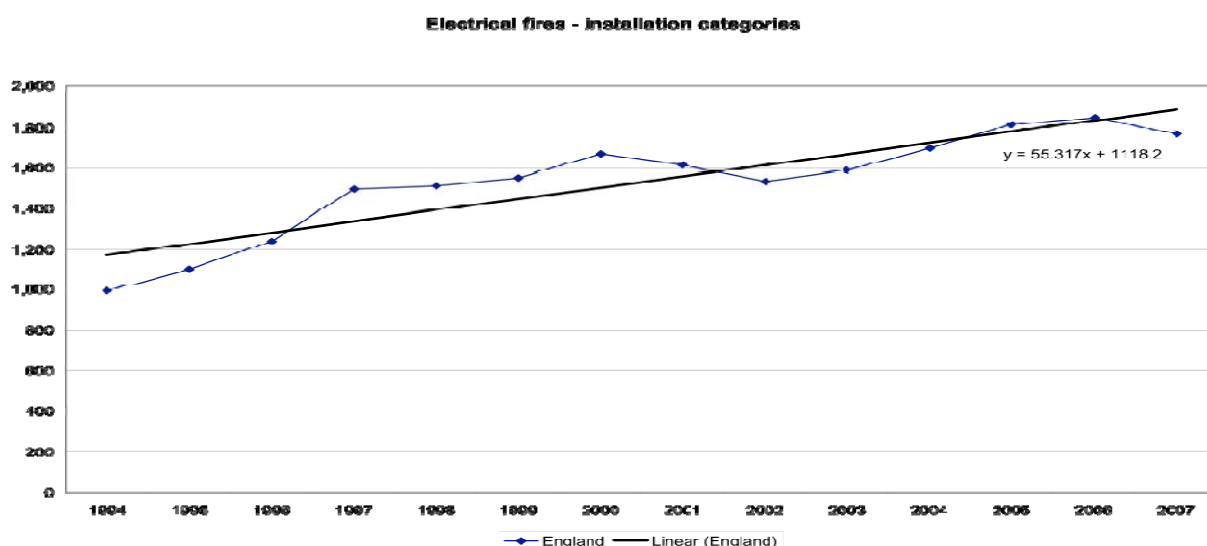
**Figure 4 - Fires with an electrical origin**



Source: DCLG fire statistics

64. Analysis of only categories specifically linked to the fixed electrical installation or wiring (including mains wiring after the meter, other wire and cables, switchgear, sockets and switches, electric showers and extractor fans) shows an upward trend over time<sup>20</sup>. The analysis is hampered by lack of comparable data after 2007 at which time fire statistics switched to be reported on a different basis. If the results of 2007, which showed a decrease in the number of fires, were to continue this evidence would strengthen the case for maintaining legislation in the vein of Part P.

**Figure 5 – Trend in electrical fires where the cause was an electrical installation or wiring category**



Source: DCLG fire statistics (custom data)<sup>21</sup>

<sup>20</sup> Note that this analysis is considering only the absolute number of incidents and the number of households is also rising over the period in question

<sup>21</sup> This data is for England only. It excludes certain categories of dwellings such as mobile homes and caravans that are not subject to the building regulations but would typically be reported in fire statistics. There is a filter on the source of power on this data of 'electricity'. This data is not part of the published fire statistics annual and is based on DCLG analysis.

65. Tables 2 and 3 present the core fire statistics information used by EC Harris and Adroit to estimate the impact of Part P. Table 2 shows the number of electrical fires arising due to various types of fault and the total number of electrical fires. This suggests that on average 33.7% of electrical fires are a result of faulty equipment or supply (rather than, say, misuse by the occupant) and therefore relevant for consideration in this Impact Assessment. Table 3 shows the assumptions regarding the impact of Part P. The total number electrical fires attributable to the mains wiring is 460 with Part P assumed to avert 30%. For other fires, the total number of fires due to equipment faults where Part P could reasonably be assumed to have a potential impact is estimated to be 6800. This assumes that there are 20,172 fires per year with an electrical origin of which 33.7% are related to faults in equipment (rather than, say, misuse by the occupant). Part P is assumed to prevent 15% of such incidents as it seems reasonable to assume that the installation itself is to blame in fewer of these cases. This assumption is also subject to sensitivity analysis later in the Impact Assessment.

**Table 4 – Electrical Fires 2010/11 and 2009/10**

<b>Electrical Fires - due to faults</b>	<b>All Electrical Fires - 2010/11</b>	<b>All Electrical Fires - 2009/10</b>	<b>Average 2009-11</b>
Faults in equipment or appliance	3965	4017	3,991
Faulty fuel supply	2155	1965	2,060
Faulty leads	632	664	648
All categories of equipment fault	6752	6646	6,699
All fires	19610	20099	19,855

Source: Adroit Economics analysis of DCLG Fire Statistics

**Table 5 – Electrical Fires – 1994-2005**

	<b>Mains wiring after the meter</b>	<b>Other sources</b>	
Accidental domestic electrical fires in England - 1994-2005	460	20,172	20,632
% related to faults in equipment	100%	34%	
Assumed impact of part P	30%	15%	
	138	1,021	<b>1,159</b>

Source: Adroit Economics analysis of DCLG Fire Statistics

66. Adroit Economics analysis of DCLG fire statistics for 2009/10 and 2010/11 indicates that, on average, 0.24% of fires caused by the electrical wiring result in a fatality, 0.85% in a serious injury and 6.63% in a slight injury<sup>22</sup>. This impact assessment therefore assumes that for a fire prevented by Part P, 0.0024 fatalities, 0.0085 serious injuries and 0.0663 minor injuries are also prevented.

<sup>22</sup> DCLG fire statistics, <http://www.communities.gov.uk/fire/researchandstatistics/firestatistics/firestatisticsuk/>

**Table 6** – Electrical fire fatalities and injuries, 2010/11 and 2009/10

<b>Number of Electrical Fire Fatalities and Injuries</b>	<b>Electrical supply - mains, wiring, plugs - 2010/11</b>	<b>Electrical supply - mains, wiring, plugs - 2009/10</b>	<b>Average</b>	<b>Ratio of accidents to fires</b>
	2,870	2,890	2,880	
Fatalities	7	7	7	<b>0.24%</b>
Serious injuries	22	27	25	<b>0.85%</b>
Slight injuries	186	196	191	<b>6.63%</b>

Source: Adroit Economics analysis of DCLG fire statistics

67. Putting these estimates together, we have assumed that the current format of Part P helps to prevent around 2.6 fatalities and 421 injuries due to electric shock and 2.8 fatalities, 10 serious injuries and 77 minor injuries due to electrical fires. The total estimated benefit in year one is therefore £39.8million with a net present benefit over ten years of £425m. Table 7 also shows the estimated benefits of fire prevention in terms of fire & rescue costs.

**Table 7** – Estimated benefits of Part P in current format

<b>Part P - Current Operation</b>	<b>Incidents avoided (yr 1)</b>	<b>Value per incident £</b>	<b>Annual value (yr 1)</b>
Electrical Fatalities	2.6	£1,668,817	£4,352,609
Electrical Injuries	421.2	£49,964	£21,044,387
Fire Fatalities	2.8	£1,668,817	£4,700,753
Fire Injuries - Serious	9.9	£187,521	£1,848,744
Fire Injuries - Minor	76.9	£14,462	£1,111,528
Fires avoided	1,159	£5,820	£6,744,908
<b>Total (Year one)</b>			<b>£39,802,929</b>

Source: Adroit Economics

## Summary of costs and benefits of current operation of Part P

**Table 8** – Summary of costs and benefits of current operation of Part P

	<b>Option O</b>
Costs	-£350,380,993
Benefits (H&S only)	£352,994,514
Total Benefits	£425,016,838
Net Benefits (H&S only)	£2,613,520
Net Benefits	£74,635,845

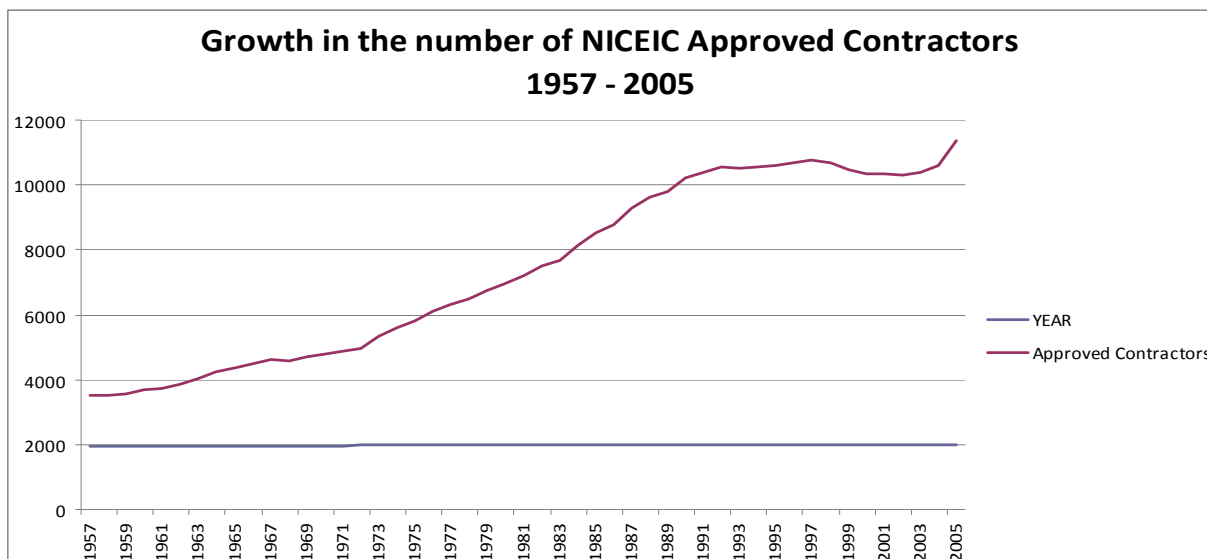
Source: Adroit Economics

68. As in previous analyses we have assumed an average number of incidents prevented per year. This is perhaps a more reasonable assumption now than in 2004 when Part P was introduced, as a greater proportion of the housing stock would now have had work carried out subject to the requirements of Part P. Of course, we would expect the benefits to build up over a period of time, but the data available are not really sufficient to undertake an approach that recognises this more explicitly.

## Wider benefits of Part P

69. The difficulties in analysing the health and safety benefits of Part P mean that consideration should be given to all other relevant sources of information on the quality of electrical work, and therefore the safety of electrical installations. We believe the number of properly qualified firms and businesses that carry out electrical work represents a strong proxy for the quality of the electrical work undertaken. This, in turn, would deliver a reduced likelihood of electrocution and fire and the associated health and safety, property damage and fire and rescue services costs.
70. Figures obtained from the Competent person scheme operators indicates that there are now approaching 40,000 firms registered with Part P schemes – around 27,000 more than were registered with the NICEIC scheme or members of the Electrical Contractors' Association before Part P came into effect. These are all installers who have elected to have their competence assessed and to have samples of their work checked regularly so that they can self-certify compliance with the Building Regulations (and thereby reduce the cost associated with complying with the Part P regime). The number of registered installers continues to increase by around 1,000 each year.

**Figure 6 – NICEIC Approved Contractors, 1957-2005**



Source: NICEIC

71. DCLG statistics for Part P Competent person schemes show that in the year to September 2010 electrical installers carried-out and self-certified nearly 1.15 million jobs. This is consistent with the estimate in the 2004 Regulatory Impact Assessment that each year electrical contractors carry out around 2.64 million jobs in total, of which around 45% are notifiable; and with the estimate by EC Harris in their February 2011 report to DCLG that 95% of notifiable electrical work is now carried out by registered installers.
72. A survey of nearly 4,000 installers registered with the three main Part P Competent person schemes found that 53% believed that the standard of electrical installation work had improved since the introduction of Part P (39% thought there had been no change). A similar, less wide-ranging survey of interested parties by EC Harris as part of their February 2011 report also found that there had been a perceived improvement in the quality of electrical installation work.
73. Further evidence for increasing installer competence since the introduction of Part P comes from sales of electrical test equipment and awards of electrical qualifications. For example:

- GAMBICA member companies supply 85% to 90% of professional instruments for electricians in the UK market. Sales of instruments marketed for Part P testing grew by 35% in 2004 and 55% in 2005, and have since grown annually by 15%. Use of such testing equipment is essential to ensure the work that has been carried out is adequate (such testing being required by Part P). This strongly implies that there has been an increase in the proper inspection and testing of electrical installations, which is perhaps the strongest indicator of all that electrical installations are safer than before Part P was introduced.
  - EAL, a body that awards electrical installer qualifications, reports that between 1 January 2008 and 27 June 2011 over 17,500 installers obtained its Domestic Electrical Installer (Part P) qualification aimed at those wishing to carry out domestic electrical installation work.
74. Respondents to the consultation supported the view that Part P has had a positive impact on the quality of electrical installations being undertaken; of those who had a view 64% thought that the standard of electrical work had improved, including 96% of building control bodies that expressed a view. However, improvements were not recognised to the same extent by installers and homeowners.
75. Part P also delivers significant consumer benefits as homeowners do not have the knowledge or expertise to judge whether electrical work is safe and of good quality. Therefore regulation provides consumers with confidence about the work they are paying for and helps avoid market failure. Market failure potentially arises due to information asymmetry as homeowners do not have the expertise to assess whether an electrical installation has been done competently; regulating for minimum standards and using competent person schemes are methods to address this. The Part P regime also includes, via the Competent person schemes, a way to follow up any deficient work and a guarantee that applies to the work even if the company undertaking the work has ceased to exist.

## **Description of changes to the operation of Part P**

76. Option 1 seeks to maintain the benefits related to controlling electrical work while reducing the associated costs. This is done through two routes: firstly, by reducing the amount of work that is notifiable (by making certain lower-risk work non-notifiable); and secondly, by allowing third-party certification of electrical work (as an alternative to using a building control body).
77. In addition to reflecting the above changes, we will take the opportunity to make other minor amendments to the guidance in the Approved Document to ensure it remains up-to-date and current. The changes will include a revised list of notifiable work; new guidance on inspection and testing by third parties; and reference to the latest edition of the national standard for electrical installation work (BS 7671:2008);. However, there are no costs and benefits associated with these changes beyond the benefit of ensuring that the technical guidance properly reflects current practice and appropriate standards.
78. We also intend to make explicit in the fees regulations that local authorities are required to take into account the qualifications of an unregistered, but qualified, electrician who submits their own inspection and testing certificate (whether the work conducted is a DIY project or by way of trade). While local authorities are already able to do this, application is not uniform across local authorities, which is a common complaint particularly from qualified but unregistered electricians. The local authority will retain, however, the ability to decide whether they are satisfied that the electrician is suitably qualified.

# Costs and benefits of option 1: retain Part P with changes

## Benefits – Option 1: retain Part P with changes

### Reducing the amount of notifiable work

79. Reducing the amount of notifiable work leads to lower costs – through a reduction in building control fees for people and firms that are not able to self-certify work and through savings of not having to notify as many jobs for those that are able to self-certify. The savings would be achieved by taking out of the system the lowest-risk types of work.
80. A reasonable consensus was reached within the Technical Working Party for Part P<sup>23</sup> that control wiring could be made non-notifiable without a significant impact on safety.
81. 64% of respondents to the consultation with a view on this issue thought that all work on control wiring could be made non-notifiable. 57% thought the same was true for bathrooms and 54% for kitchens.
82. At consultation stage initial estimates were that for the 2.64m jobs done by electrical contractors the amount of their work that is notifiable would fall from 45% to 40% (equivalent to an 11% reduction) removing approximately 130,000 jobs from being notifiable. This led to estimated annual savings of £430,000 to registered contractors, £1.45m to unregistered electricians and £2.29m to DIYers.
83. In order to improve on these estimates we have used data provided by three competent person scheme operators on the number of times twelve different categories of notifiable electrical work were identified by registered electricians when notifying jobs to scheme operators. The figures are presented in table 9 and cover England and Wales over a three year period.

**Table 9** – Types of notifiable work reported to competent person schemes, 2008-10, England and Wales

Types of notifiable work	Number
1. Circuit alteration or addition in a kitchen or special location (eg bathroom or shower room)	1,421,022
2. One or more new circuits	2,757,779
3. Replacement consumer unit	1,233,988
4. Rewire of all circuits	110,170
5. Partial rewire	81,797
6. New installation (new dwelling, extension, change of use)	898,661
7. Lighting/power outdoors	74,206
8. Control wiring including that of fire/security/heating/cooling/ventilation systems	1,289,353
9. ELV lighting within the building	16,308
10. Electric floor or ceiling heating system	15,245
11. Installation/alteration of a generator/solar voltaic system	13,885
12. Upgrade or alteration to means of earthing	946,179

Source: NICEIC, NAPIT, ECA

84. When electricians notify a job to their registration body, they tick the categories that best describe the work they have carried out. So, for example, a single job might involve fitting a replacement consumer unit, a new circuit for a cooker, and a new socket-outlet (a circuit alteration) in a kitchen. Installing a new central heating system might also involve alteration work in a kitchen.

<sup>23</sup> A sub group of the Building Regulations Advisory Committee (a statutory committee with responsibility to advise the secretary of state on building regulations) comprised of industry experts.

85. Not all types of work **within** a particular category will be affected by our policy to reduce the amount of notifiable work. In category 1, for example, we estimate 10% of jobs are in the 'within reach zone' around a bath or shower and so will remain notifiable. Similarly, we estimate 50% of outdoor jobs in category 7 will require a new circuit and will also remain notifiable.
86. The types and percentages of electrical work within the categories 1 to 12 that will become non-notifiable are:
1. alterations to existing installations in kitchens and in bathrooms outside the 'within reach' zone around a bath or shower (90%)
  7. alterations to existing outdoor lighting and power installations (50%)
  8. new central heating control systems (100%)
  9. alterations to existing ELV lighting installations (50%)
  10. alterations to existing floor or ceiling heating systems (10%)
  11. alterations to existing solar PV installations (10%).
87. Table 9 does not in itself provide the reduction in the numbers of notifiable jobs carried out by registered electricians as a result of our policy. It does, however, enable us to estimate the proportion of notifiable jobs that will become non-notifiable. To do this we have had to apply a "duplication" factor to the figures in table 9 (as described in Annex 1) to take account of where work is likely to form part of wider electrical work; and then apply a further reduction based on our estimate of the proportion of work within a given category that will become non-notifiable (as set out above). This process delivers estimates for the reductions in the proportion of notifiable work carried out by registered and unregistered electricians and DIYers shown in table 9A (38%, 45% and 45% respectively). These percentage reductions are then applied to the number of notifiable jobs. DCLG statistics show that there are currently 1,151,822 jobs notified each year by registered contractors. Jobs notified by unregistered contractors and DIYers are estimated based on the assumptions set out in the footnote to the table below.

**Table 9A - Impact of Part P policy on the number of notifiable jobs per year**

	Registered	Unregistered	DIYers	<b>All jobs</b>
Current number of notifiable jobs per year	1,151,822 <sup>1</sup>	59,400 <sup>2</sup>	47,500 <sup>3</sup>	<b>1,258,722</b>
% change in the number of notifiable jobs per year as a result of policy	-38%	-45%	-45%	
Number of jobs per year that become non-notifiable as a result of policy	433,940	26,441	21,441	<b>481,525</b>

1. Current figure obtained from DCLG Part P statistics.

2. Assumption is 45% of the 2.64m jobs by contractors are notifiable, and unregistered electricians carry out 5% of them

3. Assumption is 5% of the 0.95m jobs by DIYers are notifiable

88. The effects of removing category 8 from the need to notify and reducing the scope of notifications in categories 1, 7, 9, 10 and 11 results in the number of notified jobs decreasing. As shown in table 9A, the impact of this policy is a 38% reduction in notifications for registered installers and a 45% reduction in notifications for unregistered installers and DIYers. The percentage change is higher for unregistered installers and



DIYers because we have assumed only registered installers will carry out new installations (category 6 in table 9) due to the complexity of the work.

89. This will deliver an operational cost saving to registered contractors who no longer need to notify such projects to their scheme. We estimate the annual number of notifiable jobs for registered installers will fall by 38% from 1,151,822 currently to 717,882 as a result of this policy. This constitutes an annual saving of 433,940 jobs, each costing £3.50 to notify, and is therefore worth £1.5m per year.
90. There will be larger savings per notification as a result of unregistered contractors and DIYers no longer requiring building control approval (£246 + £5 per job). We estimate there will be 45% fewer notifications for unregistered installers and DIYers based on the impacts to the categories in table 9. For unregistered installers the annual number of notifications will fall from 59,400 to 32,959, an annual saving of 26,441 jobs. There will also be 45% fewer notifications for DIYers leading to the number of notifiable jobs falling from 47,500 to 26,356 notifiable jobs per year, a saving of 21,144 jobs. The impact of fewer notifiable jobs for unregistered installers and DIYers would deliver savings of £11.9 million if other aspects of the Part P regime were remaining the same.
91. In addition, anecdotal evidence suggests that alteration work of this type is more likely not to be notified to the building control body in the first place, not least because it is small-scale meaning many householders do not expect it to be subject to the Building Regulations and also because it is difficult for building control bodies to detect that it is being carried out. The “responsible” electricians find themselves, therefore, at a disadvantage when competing for work with those electricians who choose to avoid the cost associated with compliance. Since potentially the most high risk installations are those where the installer is either wilfully intent not to notify work or oblivious to the requirements of Part P, the additional benefits of making the work notifiable are reduced. Equally for competent persons, whose work is regularly assessed, it makes more sense to check a major rewire or new circuit than an alteration that could potentially be quite minor.

### **Benefits of introducing third-party certification**

92. Allowing for third-party certification of work that has been carried out by someone who is not a member of a Competent person scheme is the second route to reducing the burden of Part P.
93. Suitably trained and qualified members of Competent person schemes will in future be permitted to certify the work of others who are not registered electricians, thereby bypassing the building control body entirely. We envisage this will be on the basis of inspection and testing of the finished installation and will not necessarily include an inspection at first fix as assumed in the consultation stage Impact Assessment.
94. We have sought additional evidence on the cost for this type of third-party certification and this has mostly served to confirm the estimate made at consultation of £150. EC Harris have reviewed data on the cost of periodic domestic electrical inspection and testing (now Electrical Installation Condition Report) which has become more common as private renting has become a more common tenure type. They estimate that a competent person would charge on average £120-£150 for an EICR depending on the type of dwelling and this is based on a large sample of EICR costs.
95. Twelve responses to the consultation contained substantive comments on the cost of third-party inspection and testing. Where specified we have used the cost of conducting an EICR, otherwise the given costs of final inspection and testing, which gives an average across responses of £151. In the light of these additional sources of evidence the estimate made at consultation that £150 would cover two visits to an installation was clearly too low. However, as the cost of one visit to carry out inspection and testing it appears to be a reasonable estimate. Third party certifiers carrying out inspection work for a local authority would have public liability insurance, but third party certifiers will be required to have

professional indemnity insurance. We have used £150 in the central case, the upper end of the estimates specified by EC Harris, to allow for additional insurance required when carrying out third party inspection and testing. However, such insurance could be acquired by a firm rather than an individual so we would anticipate costs per job would be less than £5. This leads to a conservative estimate of the benefits to business of the policy.

96. As an alternative approach any qualified electrician will be permitted to inspect and test work carried out by unregistered installers, and to issue a “condition report” following only a final inspection of the completed work but which would still be subject to final formal sign-off by the building control body. Our central assumption is that for DIYers this route will be more expensive than using the services of a competent person scheme member: inspection and testing by an unregistered electrician would cost at least 80% of that estimated for a competent person, that is around £120, while the building control sign-off would continue to cost £70, giving a total of £190. However this will lead to significant savings for unregistered electricians who have the necessary qualifications in inspection and testing to produce their own condition report, and therefore would only need to pay £70 to the building control body.
97. A building control body may already accept an inspection and testing report submitted by a qualified electrician, regardless of whether they are a competent person scheme member, as evidence of compliance, but they are not obliged to. In such circumstances the local authority would normally require evidence of the qualifications of the installer. Some unregistered, but qualified, electricians may therefore already be carrying out their own inspection and testing. However, such a scenario would require the installer to have relevant qualifications in inspection and testing so would be unlikely to apply to the average DIYer; our estimated savings are cautious because they assume that no DIYers are able to take advantage of this route. Our proposals will formalise this arrangement and require building control bodies to take into account relevant qualifications of an installer submitting an inspection and testing certificate in determining the extent of compliance checks required.
98. As part of their research EC Harris sampled building control fees for electrical work across a variety of building control bodies with the average fee being £246, which represents a slight increase on the estimate of £231 made for the consultation. Assuming that the accompanying building notice takes 15 minutes to complete gives a total of £251<sup>24</sup>.
99. This means that for DIYers the average saving per job through introducing third-party certification is £101 (the average building control fee and notification of £251 minus the cost of third-party certification of £150). After accounting for work that will no longer be notifiable DIYers are assumed to undertake 26,356 notifiable jobs per annum, so the potential saving is £2.8m per year.
100. The saving per job for qualified electricians is £181 (the difference between the current average building control fee of £251 and the £70 fee charged when the inspection and testing report is submitted). Over 32,959 jobs, this produces a total saving of £6.1 million per year.
101. The estimated overall present value benefit is therefore **£191.6** million over ten years.

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<sup>24</sup> The building notice is filled out by the electrician. Time has been costed at £19.50/hr, the mid point of estimates derived from the Annual Survey of Hours and Earnings and the EC Harris fees database.

**Table 10** – Summary table of benefits of amending Part P

<b>Benefits of Amending Part P</b>	<b>Number of jobs</b>	<b>Value per job £</b>	<b>Annual value (yr 1)</b>
<u>Reducing the scope of notifiable work</u>			
Savings to registered installers	433,940	£4	£1,518,789
Savings to unregistered installers	26,441	£251	£6,636,748
Savings to DIYers	21,144	£251	£5,307,164
<u>Introducing third-party certification</u>			
Savings to unregistered installers	32,959	£181	£5,965,579
Savings to DIYers	26,356	£101	£2,661,956
		<b>Total PV</b>	<b>£22,090,236 £191.6 m</b>

102. For the high scenario we have assumed 10% more electrical work than in the base case (i.e. an improved economic situation) and a lower assumed cost to conducting an inspection and test of £120 (indicated as the average Electrical Installation Condition Report by EC Harris). This gives an estimated present value benefit of £223 million.
103. An equivalent low scenario, assuming 10% fewer jobs carried out, would give an estimated present value benefit of £155 million. Neither of these indicative scenarios is sensitive to the *effectiveness* of Part P because of the assumption that competent person scheme members maintain membership and standards.
104. Sensitivity testing indicates that an assumption that 50% of the benefits nominally relating to work performed by competent scheme members in the formerly notifiable categories are lost would reduce the net benefit by £18m-£35m with a central estimate of £28m. This is dependent on the assumptions made about the effectiveness of Part P in preventing electrical incidents.
105. Based on this sensitivity testing we have reduced the estimated net benefit in the low scenario to £130m to capture the additional risks on this side.

## Costs – Option 1: retain Part P with changes

### Transition Costs

106. Retaining Part P with changes would bring with it a transition cost, as electrical installers and building control bodies would need to become acquainted with the new Part P regulations and guidance.
107. We have assumed that on average 1.5 qualified supervisors or engineers in 58,000 registered and unregistered firms, and 3,300 local authority building control officers would need two hours to become acquainted with the changes. We have assumed an hourly rate for building control staff of £41 per hour and £19.50 per hour for electricians. This leads to transition costs of £2.95m to electrical firms and £270,000 to local authority building control.
108. Competent person schemes will already be gaining UKAS accreditation as a condition of authorisation for the schemes and we have assumed for the purposes of this impact assessment that this cost will not increase as a result of extending a scheme to allow for third party certification of electrical work alongside self certification (since processes will be similar as those for qualified supervisors). The vast majority of those registering to carry out third party inspection and testing are likely to be registered installers meaning there shouldn't be additional costs to registering as a third party inspector and tester.

109. **Transition costs in England are estimated, therefore, to be approximately £3.2m.**  
These one-off costs are likely to fall primarily in 2013.

**Table 11 - Transition costs**

	<b>No of firms or BCBs</b>	<b>Total no of persons</b>	<b>Hourly cost</b>	<b>Transition cost (£)</b>
Sole traders	24,232	24,232	£19.5	£ 946,447
Fewer than 5 employees	28,716	28,716	£19.5	£ 1,121,580
More than 5 employees	7,604	22,811	£19.5	£ 890,959
Building control bodies	305	3,300	£41.0	£ 270,600
			<b>Total</b>	<b>£ 3,229,586</b>

110. For the low scenario hourly wage estimates are based purely on the Annual Survey of Hours and Earnings and for the high cost scenario they are based purely on estimates from the EC Harris fees database. This gives a range of £2.9m to £3.6m.
111. The EC Harris database has been used as a source of evidence on the cost for workers in the construction industry. This reflects the value by the market of a professional including wage, on costs and other business costs to the organisation. This approach is widely used in the construction industry. However, there is a risk that this may overstate the cost savings. For instance in some situations, the saving may result in the professional being employed for fewer hours and delivering less than the full business cost savings assumed in the charge out rates. We have therefore also used the Standard Cost Model to estimate costs based upon the Annual Survey of Hours and Earnings (ASHE) plus an additional estimate of 30% for additional overheads such as pension contributions and national insurance contributions<sup>1</sup>. It is our assessment that this approach underestimates typical benefits of time for professionals in the construction industry.
112. So for our central estimate we have assumed an hourly rate half way between the EC Harris industry estimate and the ASHE plus 30% approach. We feel this estimate reasonably reflects that some time savings of key professionals have a high value reflected in the charge out rate for carrying out other priorities while in other situations the business cost saving might be more constrained.

#### Ongoing Costs

113. Assessing potential costs to an amended Part P regime is not straightforward as it is, in the absence of robust supporting evidence, primarily dependent on the assumptions made about the impacts on levels of risk brought about by changes to the regulations. The discussion on pages 8-10 has outlined some of the specific issues in this regard and highlighted some of the tangential evidence that must be taken into account when considering the health and safety impacts of the Part P regime.
114. We estimate that the policy will reduce the amount of notifiable work by around **45%**. We have been able to refine this estimate since consultation stage using the data provided by the scheme operators on the number of notifications in the various categories, allowing us to estimate more accurately the impact of removing alteration work and control wiring from the requirement to notify building control. This is assumed to have **no impact** on the installations done by competent persons; a sample of their work will remain subject to inspection regime and we think it is reasonable to assume that minor works will also be done competently by such installers, regardless of whether a specific job is notified to the

<sup>1</sup> Cabinet Office, Standard Cost Model, 2005, <http://www.berr.gov.uk/files/file44503.pdf>

scheme or not. We have subjected this assumption to sensitivity analysis under 'risks and assumptions'.

115. Given that the costs of working as an unregistered installer (£70 per job<sup>2</sup>) would quickly become unfavourable in comparison to registering with a competent person scheme we have continued to assume the same level of scheme membership when the requirements come into effect.
116. For unregistered installers and DIYers the proposal will remove the checking of such work, which we estimated could amount to around 48,000 jobs becoming non-notifiable, although still required to comply with Part P standards. Adroit Economics assigned each a risk rating (high/medium/low) and a compliance rating (high/medium/low) to different categories of electrical work in order to estimate the impact in monetary terms that might be expected from making such work non-notifiable. Using this approach to reflect the risk of different categories suggests that reducing the scope of notifiable work might reduce the benefits in relation to that work by around 12%. Because new circuits will continue to be monitored most major electrical work will continue to be subject to the requirement to notify or use third-party inspection and testing. Overall, however, since the majority of the benefits come from guaranteeing the quality of work via the use of registered installers, who carry out more than 90% of jobs, the impact on the total benefits is likely to be small; we estimate 1% based on the assumptions outlined above, giving an annual cost of **£0.5m** per year and net present cost over ten years of **£4 million**. This is consistent with, indeed slightly higher than, the estimate made for the consultation stage impact assessment.
117. We have undertaken sensitivity testing on the assumptions set out here under 'risks and assumptions'.
118. Given that the building control costs of working as an unregistered installer (£70 per job) would quickly become unfavourable in comparison to registering with a competent person scheme we have continued to assume the same level of scheme membership when the requirements come into effect.
119. The other element of the Option 1 amendments is providing the opportunity for greater third-party certification. However, we contend that this option only provides an alternative mechanism to ensure adequate checks on notifiable work are done, and will not result in any reduction in ensuring the work is adequate; most local authority building control bodies would usually contract out such work to a competent electrician anyway.
120. This proposal was widely supported in the public consultation – 83% of those with a view were in favour of allowing third-party certification of electrical work.
121. Promotion of the schemes is now a requirement for the conditions of authorisation for a competent person scheme and this will help to increase the benefits of Part P yet further – by making clear that electrical work is required to meet the standards set out in Part P and promoting the use of competent electricians to carry out that work.
122. Increasing promotion of the schemes will mitigate against any risks arising from reducing the scope of notifiable work under Part P. We believe that promotion of competent person schemes and use of registered electricians, and education of householders about Part P generally, are more likely to deliver significant health and safety benefits than keeping the requirement for work in kitchens and bathrooms to be notified to building control.

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<sup>2</sup> Assuming the installer has the qualifications to do their own inspection and testing

## Summary table of costs

**Table 12** – Summary of costs of amending Part P

Costs of Amending Part P	Annual value (yr 1)
Transition costs	£3.2
Potential impact on health and safety benefits	£0.5

### Summary – Option 1

123. Based on the figures above, therefore, amending Part P would produce a net benefit of **£184.3 million over 10 years** (£191.6m less one-off costs of £3.2m and ongoing costs of £4.0m).

## Summary table of costs and benefits

**Table 13** – Summary table of costs and benefits of amending Part P

Costs and benefits of amending Part P	NPV (10 years)
Transition costs	-£3.2
Estimated decrease in health and safety benefits	-£4.0
Savings from reducing scope of notifiable work	£191.6
<b>Net present benefit</b>	<b>£184.3</b>

## Direct costs and benefits to business calculations (following OIOO methodology)

124. For the preferred Option 1 the present value cost to business is estimated at £3.0m, arising purely from the transition costs, while the present value benefit is £123.6m, giving a net benefit to business of £120.6m. This is a benefit to registered electrical installers, who will no longer be required to notify some minor works, and to unregistered electrical installers who will no longer have to notify minor works to building control and who will also be able to use third party certification. Any costs or benefits falling on DIYers or on local authority building control have been excluded from the cost to business calculation.
125. This translates to an annual equivalent net benefit to business of **£14.0m** at 2012 prices (or £12.9m at 2009 prices).

## Risks and assumptions

### Consideration given to alternative options

126. This impact assessment has considered the costs and benefits of Part P relative to the counterfactual of the current Part P regime. The costs in such a scenario are any increases in accidents, and the benefit is the reduction in the cost of the regime. Table 14 compares the estimated costs and benefits of the amended Part P regime with the current regime.
127. Table 14 also shows the more limited deregulatory proposal that we also considered, removing only work on control wiring from the requirement to notify building control. We have labelled this 1a as it differs from the preferred option only in that alteration work in kitchens and bathrooms would remain non-notifiable.

128. At consultation stage we also considered an option of fully revoking Part P, which garnered little support in the public consultation. Most respondents felt that Part P had been a step forward in ensuring safe electrical installations and to remove it was not advisable, although there were some suggestions for a regulatory regime that looked different to Part P but with the same objectives. The cost-benefit case for complete revocation is clouded by uncertainty over how persistent the benefits would be over the appraisal period; consultees agreed with our assessment that removal of Part P would lead to a sharp drop in the number of registered competent persons and an ongoing fall back to, or close to, historic levels of voluntary registration.

**Table 14-** Summary of options considered: net present costs and benefits over 10 years (£m)

	<b>Option O</b>	<b>Option 1a</b>	<b>Option 1</b>	<b>Revoke</b>
	Base Case	Denotify control wiring and Introduce third party certification	Denotify control wiring and kitchen/bathroom alterations and Introduce third party certification	Revoke Part P
Costs	-£350m	-£181m	-£159m	-£17m
Benefits (H&S only)	£353m	£351m	£350m	£178m
Total Benefits	£425m	£422m	£421m	£214m
Net Benefits (H&S only)	£3m	£170m	£191m	£160m
Net Benefits	£75m	£241m	£262m	£197m

Source: Adroit Economics

129. The assumptions used to cost the regulatory framework (such as the cost of carrying out inspection work or having work approved by a building control body) are believed to be robust and most cost estimates have been either validated or updated as a result of the consultation exercise. The benefit of Part P in terms of health and safety is more difficult to reach firm conclusions upon and so we have subjected our analysis to sensitivity testing.

130. The most significant uncertainty in the results presented is around the impact of reducing the scope of notifiable work. We have therefore provided further analysis to investigate how the assessment would change when key assumptions are varied, in particular regarding the response of registered installers to the amendments and the effectiveness of Part P in preventing fires and electric shock incidents.

## Sensitivity testing

131. Our central estimate assumes no loss of benefit relating to the work currently performed by registered competent persons. Registered electricians are assumed to remain members of competent person schemes and to undertake work to the same standard. This is the central estimate because the changes will not materially alter the incentives for practising electricians who carry out a variety of electrical installation work to register with a competent person scheme. The cost of using building control (at least £70 per job) would quickly become unfavourable compared to the cost of operating as a member of a competent person scheme, for anyone undertaking more than five new circuit installations per year. Equally although work might be non-notifiable a sample of more complex work is being checked and competence assessed, therefore it seems reasonable to assume that such work will still be completed to the required level.

132. As a first sensitivity test we have indicated the benefits of the overall Part P regime if 50% of benefits nominally attributed to the de-notified categories were lost. Just because a

firm chose to deregister does not, of course, mean that the electrical installation would not be done properly but it illustrates the potential for greater loss of health and safety benefits than in our central case. An assumption that 100% of the benefits nominally attributed to this sort of work are lost is also shown in the table, although this seems an overly extreme assumption.

133. Table 15 and Table 16 show the NPV of the current Part P operation under the specified set of assumptions. The right hand three columns express NPV of the amending options relative to this counterfactual.

**Table 15** – Sensitivity test on the assumption that no benefits are lost in relation to formerly notifiable work carried out by registered installers (NPV over ten years, £m)

	<b>Current</b>	<b>3<sup>rd</sup> party and denotify control wiring</b>	<b>Chosen policy option</b>	<b>Revoke Part P</b>
No change on work currently done by registered installers	£75m	£163m	£184m	£119m
50% of benefits nominally from this work lost	£75m	£148m	£157m	£35m
100% of benefits nominally from this work lost	£75m	£134m	£114m	-£49m

Source: DCLG analysis

134. Secondly we have investigated the impact of assumptions made regarding the effectiveness of Part P in preventing electrical fires and shock incidents, since these assumptions are uncertain. If Part P is less effective than assumed in the central case, then the case for revocation is stronger. In this scenario we have assumed that only 25% of the recent fall in electric shock fatalities can be attributed to Part P, 20% of relevant mains wiring fires could be prevented, and 10% of other electrical fires<sup>3</sup>. These estimates are within the range of uncertainty around the central estimates.

**Table 16** – Sensitivity test on the cost effectiveness assumptions (NPV over ten years, £m)

	<b>Current operation of Part P (NPV)</b>	<b>3<sup>rd</sup> party and denotify control wiring</b>	<b>Chosen policy option</b>	<b>Revoke Part P</b>
Sensitivity test with low effectiveness assumptions				
No change on work currently done by registered installers	-£75m	£164m	£186m	£193m
50% of benefits nominally from this work lost	-£75m	£155m	£168m	£138m
100% of benefits nominally from this work lost	-£75m	£145m	£140m	£84m

Source: DCLG analysis

135. Revocation of Part P would become the most beneficial option under low cost effectiveness allied to our central assumptions, but would be displaced as the leading option if it were assumed that there is an impact on the benefits stemming from formerly notifiable work carried out by registered electricians. Option 1 therefore appears to strike a reasonable balance between the different elements.

<sup>3</sup> Compared to 50%, 30% and 15% respectively.



# Wider impacts

## Equalities impact test

136. An initial equalities screening of the proposed policy was carried out and determined that a full equalities impact test was not required as the proposal does not adversely affect any minority groups.

## Competition assessment

137. The proposed policy aims to reduce the cost and bureaucratic burden that Part P imposes on businesses. Registered installers will benefit from not having to notify minor jobs, reducing the ongoing costs of operating their business. Unregistered installers will gain an even bigger benefit from this change as they would otherwise have had to pay building control fees on these jobs.
138. Primarily unregistered installers will benefit from being able to use third-party inspection and testing via a competent person scheme member, at lower cost than going through local authority building control. Unregistered installers will also benefit from lower costs as they will have greater opportunities to submit their own inspection and testing certificates to their local authority building control department where the local authority is satisfied with their qualifications and/or experience.

## Small Firms impact test

139. The proposed policy aims to reduce the cost and bureaucratic burden that Part P imposes on electrical installers – a part of the construction industry particularly characterised by small businesses and sole traders.
140. Since none of the technical requirements are changing the transition costs are minimal as they only relate to the *process* of carrying out and approving work and not to the design and installation techniques.

## Environmental impact tests

141. It has been determined that this policy will not result in additional greenhouse gases being emitted and will have no impact on the wider environment.

## Social impact tests

142. We do not expect the proposal to have any social implications.

## Sustainable development

143. We do not expect the proposal to have any sustainable development implications.

# Annex A

## Categories of notifiable work

Types of notifiable work and numbers of notified jobs between 2008-10	Jobs notified
1. Circuit alteration or addition in a kitchen or special location (eg bathroom or shower room)	1,421,022
2. One or more new circuits	2,757,779
3. Replacement consumer unit	1,233,988
4. Rewire of all circuits	110,170
5. Partial rewire	81,797
6. New installation (new dwelling, extension, change of use)	898,661
7. Lighting/power outdoors	74,206
8. Control wiring including that of fire/security/heating/cooling/ventilation systems	1,289,353
9. ELV lighting within the building	16,308
10. Electric floor or ceiling heating system	15,245
11. Installation/alteration of a generator/solar voltaic system	13,885
12. Upgrade or alteration to means of earthing	946,179

This data covers 2008-10 so we have divided by three to give an annual estimate of the number of jobs.

A single project could be notified under more than one heading (so it could still be a notifiable project even if one of the categories was removed from notifiable status). Our key assumptions about duplication are below. This is only material to the results of the assessment for the largest categories.

- 30% of alterations in a special location are projects that also include a new circuit.
- 14% of new circuits relate to control wiring.
- 50% of work outdoors involves a new circuit
- 90% of ELV lighting and electric floor or heating systems is duplicated with new circuits
- 100% of upgrades to the means of earthing are duplicated with other notifications.