Title: Renewable Heat Incentive (RHI) stand-by mechanism for budget management **IA No: DECC0085** **Lead department or agency:** DECC **Other departments or agencies:**	Impact Assessment (IA) **Date:** 08/03/2012 **Stage:** Final **Source of intervention:** Domestic **Type of measure:** Primary legislation **Contact for enquiries:** Daniel.newport@decc.gsi.gov.uk Geraldine.treacher@decc.gsi.gov.uk

Summary: Intervention and Options

RPC: RPC Opinion Status

Cost of Preferred (or more likely) Option				
Total Net Present Value	**Business Net Present Value**	**Net cost to business per year** (EANCB in 2009 prices)	**In scope of One-In, One-Out?**	**Measure qualifies as**
Positive	£0m	£0m	No	N/A

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

The RHI is a subsidy scheme operating under a fixed budget with the objective of incentivising the deployment of renewable heat such that by 2020 12% of the UK's heat demand comes from renewable sources. The scheme currently has no mechanism for constraining scheme expenditure to be within budget or at levels of deployment sustainable for the spending review period. If the RHI were to breach budget, any overspend would need to be removed from subsequent years' budgets. This would result in DECC needing to take emergency action to reduce the scope of the scheme. Such action would be slow to respond, causing inefficient 'peak and trough' deployment, loss of market stability and confidence and poor value for money through excessive rents.

What are the policy objectives and the intended effects?

The preferred regulation seeks to give DECC the power to suspend and alter the RHI, in the eventuality that forecast expenditure is above an identified 'trigger', until a full degression mechanism can be introduced. By setting out publicly these forecasts, the 'trigger' and the action DECC will take, it is intended to increase clarity and confidence in the RHI. Such a mechanism will allow DECC to react quickly to any potential overspend and thus minimise overspend, minimising the impact on industry of lower budgets in future years, and ensuring value for money through allowing DECC to alter the scheme to avoid inefficient large rents and ensure only cost effective installations are targeted.

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

DECC will introduce a full degression measure based around a contingent degression mechanism in which tariffs for each technology are reduced when rate of deployment reaches certain levels. However, this is not expected to be in place until late 2012/13. Therefore this regulation intends to be an interim measure which can be put in place quickly. Due to the nature of this interim regulation it is therefore only possible here to consider variations to possible notice periods and trigger points for suspending the scheme. DECC has considered these options against the counterfactual option that no mechanism for budget management can be put in place. These are explained in full in the Evidence Base section of this IA. Wider variation will be considered as part of the consultation work for the full degression measure.

Will the policy be reviewed? It will not be reviewed. **If applicable, set review date:** Month / Year

Does implementation go beyond minimum EU requirements?			**N/A**		
Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base.	**Micro Yes/No**	**< 20 Yes/No**	**Small Yes/No**	**Medium Yes/No**	**Large Yes/No**
What is the CO2 equivalent change in greenhouse gas emissions? (Million tonnes CO2 equivalent)			**Traded: N/A**	**Non-traded: N/A**	

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

Signed by the responsible Minister: ---------- Date: ----------

Summary: Analysis & Evidence — Policy Option 1

Description: Power to temporarily suspend the RHI scheme to new entrants

FULL ECONOMIC ASSESSMENT

Price Base Year	PV Base Year	Time Period Years	Net Benefit (Present Value (PV)) (£m)		
			Low: n/a	**High:** n/a	**Best Estimate:** Positive

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	n/a		n/a	**Very Low**
High	n/a		n/a	**Very Low**
Best Estimate				**Negligible**

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

DECC is not able to monetise any of the costs and benefits of this regulation. A full qualitative discussion of costs and benefits can be found in the evidence base section of this document.

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

Possible impact of regulation on investor/supplier confidence
Administrative burden on suppliers
Administrative burden on scheme administrators

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	n/a		n/a	**Low**
High	n/a		n/a	**High**
Best Estimate				**Very Low**

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

DECC is not able to monetise any of the costs and benefits of this regulation. A full qualitative discussion of costs and benefits can be found in the evidence base section of this document.

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

Ensuring cost effective, value for money scheme, through enabling reduction of inefficient economic rents if excessive deployment indicates excessive tariffs
Possible impact of increased investor/supplier confidence and clarity
Minimising overspend so achieving dynamic efficiency of deployment and minimising impact of instability and uncertainty on the market for renewable heat

Key assumptions/sensitivities/risks — **Discount rate (%)**

The costs and benefits that arise from this regulation will depend greatly on the level of deployment in the counterfactual. This is very uncertain and is discussed later in this IA. Furthermore a large proportion of the costs and benefits of this regulation will depend on investor/supplier behaviour in responding to the signalling of this regulation. This IA draws on the limited qualitative evidence DECC has on how industry might perceive the regulation.

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			In scope of OIOO?	Measure qualifies as
Costs:	**Benefits:**	**Net:**	No	N/A

Problem Under Consideration:

The Renewable Heat Incentive (RHI) is a long-term tariff scheme to encourage the replacement of fossil fuel heating with renewable alternatives. It opened for applications in November 2011 and currently supports renewable heat installations in business, industry and the public sector as well as district heating schemes.

The RHI was introduced primarily to help meet the UK's target of 15% of our energy coming from renewables by 2020. Renewable heat will contribute approximately a third of this overall energy target, but, in order to make that contribution, around 12% of our total heat demand in 2020 will have to come from renewables, increasing from less than 2% currently.

In addition, renewable heat is also essential to our carbon budgets and our target of an 80% reduction in carbon emissions by 2050.

The RHI is funded directly from Government spending and has been assigned annual (nominal) budgets for the four years of this Spending Review period.

Financial year	Spending Envelope £m
2011/12	56
2012/13	133
2013/14	251
2014/15	424
Total	**864**

As set out in detail within the Government Response to Consultation, due to analysis of the sustainable expenditure profile, the budget available for RHI tariff payments for this year is £70m.

This budget is more than capable of accommodating the rate of deployment forecast in the December Impact Assessment [link] but corrects for the fact that installations will cost less in their first financial year of operation than every subsequent year. The £70m budget is not expected to be reached unless the current rate of applications of roughly 10MW (of which only around 5MW per week are projects completed since the RHI opened) were to rise steadily to 50MW per week by the end of the year. Such an increase in deployment would be far in advance of the smooth growth profile to 2020 presented in the December Impact Assessment. In reality, there are infinite combinations in which any specific expenditure could be generated, and hence there is a great deal of uncertainty around the causes of and impacts of any given level of expenditure this year.

The budget relates only to in-year tariff expenditure - tariffs are paid for 20 years, so each year's installations produce a legacy spend for the next 19 years. Budgets beyond 2015 will be set as part of the standard Spending Review process and they will have to include payments made to existing as well as new installations in order that the RHI continues to support growth in renewable heat.

The budgets are not flexible; spending cannot be banked for subsequent years. However, spending more than the budget in any given year would result in a reduction of future budgets as the overspend would have to be recouped. Hence a spike in deployment which caused the RHI to breach its budget in one year would mean DECC would need to take action to reduce deployment in future years – thus leading to a "peak and trough" deployment. This shape of deployment brings a lack of confidence for suppliers, investors and more generally, though rapid growth and contraction of supply chains, is considered inefficient. Expenditure beyond the level of £70m in 2012/13 would imply a level of deployment/applications had been reached that could not (even with degression) be maintained throughout 2013/14.

DECC estimates, through detailed economic modelling [link], the likely uptake of renewable heat under the announced tariffs and the associated expenditure. However due to the nature of the renewable heat market, and the low existing levels of supply and demand, this modelling is highly uncertain and carries both upside and downside risk (as discussed below).

There is currently no legislation in place to limit expenditure on the RHI and therefore the upside risk presents a risk of overspend on DECC's spending RHI budget.

Rationale for Intervention and Policy Objective

As set out above, there is a possibility that under the current RHI, deployment will exceed expectations and drive expenditure above budget. This would cause a contraction in the available budget for new installations in subsequent years and hence requiring a slow down or suspension of the scheme. Such an eventuality would imply that the tariffs set to incentivise the uptake of renewable heat had been set too high, leading to excessive rents and deployment in the short-term at the expense of more efficient, sustainable, deployment over the medium-term. This is highlighted by the assessment that application rates would need to rise by 500% by the end of the year, to breach the identified budget. Clearly, such growth, when compared with the average 30% annual growth identified in the December IA would be excessive. This could result from insufficient data used to set tariffs, changes to fuel or technology costs, or over-constraining modelling of uptake (the sources of uncertainty are discussed later).

This regulation seeks to mitigate the risk of excessive deployment endangering budgets or reaching deployment levels which are unsustainable whilst minimising its impact in the case that deployment is not excessive. It should be noted here that this regulation is only a temporary measure, which is expected to be in place while a more sophisticated automatic tariff degression mechanism is developed.

The objective of this regulation is to ensure that there is certainty that expenditure is contained and that where deployment is high due to excessive rents, this can be addressed to ensure the scheme is cost-effective. This will ensure that any growth in the deployment of renewable heat is sustainable and that uncertainty and inefficiency caused by 'peak and trough' deployment are minimised. In addition, this regulation would provide clarity to industry about how DECC monitors expenditure and at what level expenditure will trigger a scheme suspension.

Explanation of Budget

As explained above, the regulation is designed to achieve three things:

1. Ensure no overspend of DECC's Renewable Heat spending envelope;
2. Ensure that deployment does not reach levels which are not sustainable for the remainder of the spending envelope;
3. Ensure value for money through addressing tariffs in the case that deployment is excessive.
4. Clarity of approach to spending for investors/suppliers

A key difficulty in achieving this is assessing the level of expenditure in 2012/13 which constrains deployment to a sustainable level and which would not require scheme suspension or supply chain contraction during 2013/14.

DECC assesses £70m to be the highest budget this year that can be spent on tariff payments to achieve this objective. The methodology used is to assume that in order to breach such a budget, the most conceivable shape of applications would be a compound weekly growth throughout the remainder of the year. DECC has therefore extrapolated the average application rate to date (with consideration to size, mix of technologies, two-tiered tariffs and seasonality of heat demand), at a number of different weekly growth rates for the remainder of the year.

This sensitivity analysis has shown that a £70m expenditure through such a deployment pattern in 2012/13 would lead to around a £135m legacy expenditure on those installations in 2013/14, leaving around £116m for expenditure on new installations in 2013/14 (i.e. the £251m spending envelope less £135m legacy spend). This is considered the minimum sustainable amount as, in order to spend £70m in 2012/13, applications would need to reach around 50MW per week by the end of the year. In order to sustain this level of deployment throughout 2013/14 and not then contract supply chains, even with an element of degression (assumed to be around 20%), a budget of £116m for new installations would be required.

By way of comparison, were DECC to set the budget for 2012/13 as the spending envelope less the RHPP budget (£133m-£25m=£108m), the legacy expenditure in 2013/14 of the installations necessary would be around £250m. Which is the same level as the 2013/14 spending envelope.

Under such a scenario the scheme would need to be suspended to new applicants for at least the whole of 2013/14. Although this scenario would require around a 1500% rise in application rates by the end of the financial year, and, as such would require both excessive rents to drive demand and suppliers being able to meet this demand.

Policy Options

A. Do nothing (counterfactual):

This regulation is assessed against the counterfactual of no interim mechanism for budget management regulation. Hence this option is one in which there is no formal budget management implemented until the full degression mechanism is introduced late in 2012/13. Hence installations in 2012/13 could be at a level which would result in either an overspend or necessitate the closure of the scheme in 2013/14. Under this option, DECC would not be in a position to quickly suspend or amend the scheme were spending to breach the budget, so would be slower in reacting to excessive deployment, allowing potential overspend to grow further. This would result in a large level of over deployment which would need to be removed from future years budget. This unknown and subjective approach to budget management would have weaker control on spending and also be less clear to the market than if a stand-by mechanism was introduced.

B. Short Term Expenditure Trigger to Suspend Scheme:

The stand-by mechanism for budget management is an automatic control which suspends the RHI scheme should a trigger (identified as a specific forecast £m expenditure on applications received) be met. This is an interim measure to prevent budget overspend until the longer term degression is in place.

The trigger will be set at 97% of available budget. Estimated expenditure will be based on applications to date and calculated as:

Estimated expenditure = Capacity x Expected 2012/13 Running Hours x Tariff

This calculation will be summed for all applications, pre-applications and accreditations, adjusted for estimated completion date, seasonality of heat demand for space heating, and two-tiered tariffs into a single figure of expected expenditure for 2012/13. This will be compared to the trigger on a weekly basis. If, at any point, Estimated Expenditure exceeds 97% of the budget then the scheme would be suspended to new applications a week after that date. Existing applications and pre-applications would still be able to be accredited as they would be included within estimated expenditure.

The scheme would then re-open to applications at a time when tariff levels have been reviewed.

There is a trade-off between the notice period given to shut the scheme and the level of trigger, which was discussed in detail in the consultation IA [link]. As explained in the Government Response, the higher trigger level allows for a decrease in risk of overspend through a quicker suspension but also allows for a lower risk of the suspension being required, decreasing the risk of an unnecessary suspension. However a one week notice period may also lead to decreased confidence where deployment is high - DECC will seek to give prior warning if it considers it likely that deployment will hit the trigger point.

Non-Monetized Costs and Benefits of each option:

A. Do nothing (counterfactual):

The costs and benefits discussed below are relative to the do nothing approach, hence, being the business as usual counterfactual, there are no costs and benefits associated with this option.

However, as discussed above, it is assumed that in the absence of a stand-by mechanism, DECC would still need to react to an overspend but would do so more slowly, allowing the problem to persist and worsen in the short-term, increasing the scope of response necessary by DECC.

B. Short Term Expenditure Trigger to Suspend Scheme:

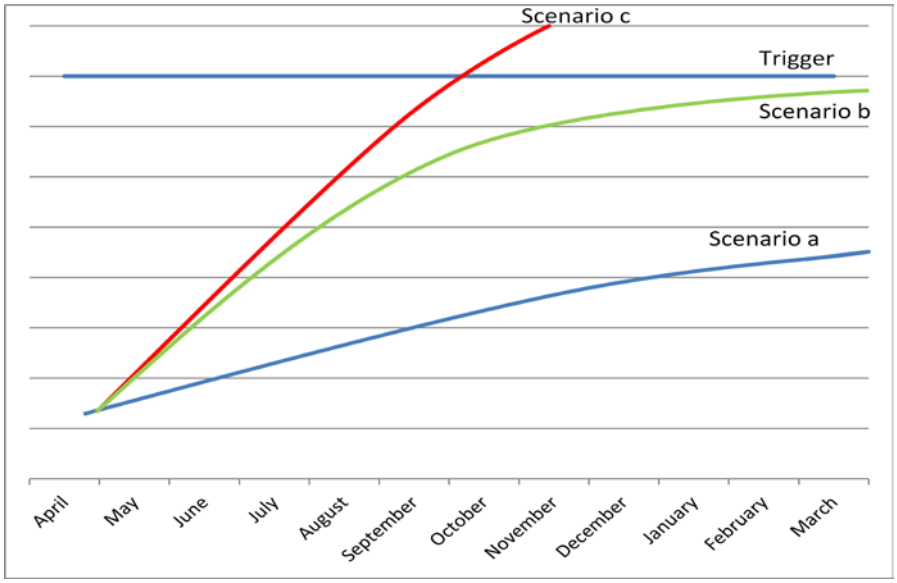
Preferred Option B2:

The following section contains a discussion of the potential costs and benefits of this regulation. Clearly, the nature and level of these costs and benefits will vary with deployment under the RHI. The following section examines the costs and benefits under three scenarios:

a. Low Deployment: where deployment remains at a level where there is no material risk of the trigger being met.

b. High Deployment: where deployment is at a level which signals a material risk of the trigger being met.

c. Excessive Deployment: where deployment meets the identified trigger.



The estimated expenditure curves are expected to converge to a final annual spend as the later applications are in the financial year, the smaller the impact they will have on expenditure in that year. In reality it is likely that the nature and level of costs and benefits will vary continuously with deployment rather than as three discrete scenarios. However, for the purpose of this IA it is reasonable to assume this simplifying methodology.

Costs:

1. Impact of uncertainty on demand and supply

The UK Renewable Heat market is currently very small in comparison to the size of market required to supply 12% of the UK's heat demand through renewable sources by 2020. Considerable compounded supply chain growth will therefore be necessary under the RHI for the UK to meet its ambitious target.

It is considered here that smooth supply chain growth to 2020 is the most dynamically efficient outcome for society, for the UK to meet its renewable heat target. Such growth would avoid unnecessarily bringing costs forward in time but also would avoid having to compress deployment into a shorter time-frame than necessary.

In order to achieve this supply chain growth, suppliers and investors in the UK's Renewable Heat industry require confidence to expand and invest. Given that the market (in the short to medium term) is expected to be largely subsidy-driven, the possibility of RHI suspension has the potential to reduce this confidence.

a. Low Deployment: Where deployment is low the impact on investor confidence of this regulation is expected to vary by technology. Low level deployment is likely to give confidence in the availability of tariffs. This should ensure installers of technologies which can be installed over a shorter time-period should have confidence to proceed.

   For technologies with longer development time (e.g. a year or more), this regulation should not impact them as it does will be superseded by the automatic degression mechanism. However it is

possible that until that mechanism is in place, this regulation could be interpreted as a potential threat to the longer-term existence of tariffs. However, for very large, long-term projects pre-accreditation should help alleviate this issue.

Assessment of cost: Negligible

b. High Deployment: Where deployment is high there will be a material chance of scheme suspension within months which could have two potential impacts.

Most likely is that the closer to the trigger deployment gets, the less deployment will be undertaken – as there is no system for 'booking' for most technologies, it is considered less likely that investors would embark on an installation the higher the risk of breaching the trigger. This could result in the cost that supply chains are unable to grow to the point at which deployment can reach the level the spending envelope allows and are kept artificially low by a lack of confidence, causing a need to expand faster in subsequent years at greater cost. However this could also mean that the 'signalling' affect of this regulation could mean that the budget becomes self-enforcing and constrains deployment to an efficient level without requiring suspension.

The lead-times of projects (being at least a month, but often much longer) mean that DECC consider this more likely than a rush to complete projects before suspension. This is discussed further in the sections on benefits.

These long lead times may also mean that the possible suspension of a scheme will have an exaggerated affect on investor confidence, as, for example a three to six month lead time makes judging the potential for suspension in that period difficult. However, this would be a factor in the design of any budget management measure and in many cases will be avoided through pre-accreditation.

Less likely (given the nature of technologies) is that the threat of scheme suspension could accelerate deployment as installers and consumers rush to apply for the RHI before the scheme can be closed. This could result in both a breaching of the scheme spending envelope and the suspension of the scheme and potentially also, rushed installations of lower quality. This possibility is considered very unlikely due to time required to install technologies and the weekly assessment of expenditure.

Assessment of cost: Low

c. Excessive Deployment: Where the trigger is met the scheme will be suspended. Clearly supply chain growth will have been dramatic in this scenario. A suspension would then likely lead to a hiatus in demand (although perhaps not dropping to zero due to anticipation of re-opening).

Scheme suspension could cause damage to future investment in supply chain growth as confidence in availability of tariffs would suffer long-term damage. However as discussed later, this is not considered a cost relative to the counterfactual because under the counterfactual, deployment would keep on expanding until DECC were able to address it (with a longer lag time), which would end up accentuating the 'peak and trough'.

Assessment of cost: None

2. Administrative burden on suppliers

This regulation could cause higher administrative burdens on suppliers of Renewable Heat. In order to assess the risks of the suspension being triggered suppliers will need to be aware of and interpret DECC/Ofgem expenditure forecasts.

Suppliers have indicated to DECC that they will be monitoring rates of deployment where possible anyway, so the additional burden is considered minimal, but again varies with deployment:

a. Low Deployment: Where deployment is not considered likely to trigger scheme suspension, it is expected that suppliers would face negligible monitoring burden

Assessment of cost: Negligible

b. High Deployment: Where deployment risks triggering suspension it is expected that suppliers will face a low level of administrative burden. It is considered that suppliers need only ensure they are aware of developments in deployment (which will be regularly published) and use this to inform decisions on investment.

Assessment of cost: Very Low

c. Excessive Deployment: Where suspension is triggered and a hiatus in the market for renewable heat exists this is expected to result in some form of administrative cost to suppliers. However as before, this may be lower than in the counterfactual case in which the scheme was suspended later.

Assessment of cost: Very Low

3. Administrative burden to scheme administrators

The forecasting of expenditure will be a relatively simple routine, using data already collected via Ofgem and published weekly:

a. Low Deployment: Routine, ***Assessment of cost: Negligible***

b. High Deployment: Routine, ***Assessment of cost: Negligible***

c. Excessive Deployment: In the case that the suspension is triggered, there will be a small administrative cost to suspending the scheme. ***Assessment of cost: Low***

Benefits:

1. Opportunity to address tariffs to ensure cost-effectiveness:

The main benefit of this regulation is that it gives DECC the opportunity to ensure that, if tariffs are higher than is necessary to incentivise deployment, they can be changed. The event of a budget over-run would indicate that DECC had misjudged some of the key parameters that govern uptake, such as the over-estimation of capital costs or under-estimation of opportunities. This regulation reduces a risk to the RHI's value for money and increases the expected benefit of the policy by cutting off a downside risk attached to overspending on over-generous tariffs.

In the eventuality that suspension is triggered, as discussed in the section below, supply chain and demand growth will have been very high. This is only expected to occur if tariffs offer a higher rate of return on investments than was intended. This could be due to a number of reasons discussed later.

This would imply that considerable levels of economic rent were being paid which could be avoided, with deployment still being on target to reach the 2020 target.

Suspending the scheme at this point would allow DECC to address this issue and re-target the RHI with more appropriate tariff levels, ensuring that only the more cost-effective installations were being incentivised and that rents are kept to a minimum.

This could potentially be of very high benefit, through reducing the cost to the taxpayer of renewable heat and therefore carbon savings. In the case that lower tariffs could achieve necessary deployment, reducing tariffs to the correct level would be of high benefit to society.

This could result in a large equity benefit, through avoided economic transfers and their associated deadweight loss; and a saving on resource cost by ensuring that only the most cost-effective installations are subsidised.

a. Low Deployment: ***Assessment of benefit: None***

b. High Deployment: ***Assessment of benefit: None***

c. Excessive deployment: ***Assessment of benefit: High***

2. Avoided Overspend / Unsustainable Deployment:

The RHI operates under a fixed annual budget. If the RHI overspends on its budget DECC will be required to reduce future year spending or deployment such that the overspend is balanced out. Therefore, ensuring no short term overspend could result in dynamic efficiency: making sure society's resources are not spent on rapid expansions and contractions in deployment. Although a scheme suspension could result in a contraction in deployment for a short period, this would be a smaller and

shorter contraction than that which would be caused by allowing short-term expenditure to rise considerably above the spending envelope. This would apply as follows:

a. Low Deployment: Overspend was not a possibility so the regulation offers no benefit of avoiding it.

   Assessment of benefit: None

b. High Deployment: Avoided overspend could become self-fulfilling as suppliers recognise the risk to rapid expansion when approaching the trigger point and hence slow investment to a sustainable rate, with efficiency gains over the 'peak and trough' alternative.

   Assessment of benefit: Low

c. Excessive Deployment: The full benefit of dynamic efficiency, described above, is recognised. The level of this will depend on by how much the expenditure would have gone on to exceed budget.

   Assessment of benefit: High

3. Increased Certainty:

Suppliers have indicated that they are aware that the RHI operates with a fixed budget and therefore are aware that subsidised deployment has an upper-limit in any given period. It is therefore likely that identifying this budget and how DECC assesses whether it is reached will give industry more confidence about the likelihood of scheme closure.

Since the cutting of Solar PV tariffs under FITs, industry and investors are concerned that a similar situation could occur under the RHI. By setting out in legislation under what circumstances this would happen, DECC can increase supply chain and investor confidence that tariffs will be available in future, and provide early warning if there is a risk they will not.

a. Low Deployment: Suppliers and consumers will benefit from certainty that spending is within budgets and that there is no threat of sudden withdrawal of support.

   Assessment of benefit: Very Low

b. High Deployment: Suppliers and consumers are able to see that deployment is on a trajectory which could potentially trigger suspension (and DECC will seek to alert them of this if it becomes a likely scenario). Setting out exactly what this point is will allow them to plan accordingly and make a reasonable assessment of risk on any projects/investment they choose to go ahead with.

   Assessment of benefit: Low

c. Excessive Deployment: If suspension is triggered then there will be a disruption to the market, however this disruption will at least have been forewarned so suppliers and consumers will have been able to mitigate the risks.

   Assessment of benefit: Medium

Alternative options considered:

As discussed in the Consultation Document and IA, a key decision when designing this regulation is the length of notice period from the trigger point being met to the scheme being suspended. Here there is an inherent trade-off. Through giving a notice period before the scheme is suspended, there is a necessity to introduce a lower trigger point, such that there is budget available for applications made during the notice period.

Any such notice period brings a degree of uncertainty to the budget management mechanism, as it is unclear what level of applications would be received during that period. The longer the notice period, the lower the necessary tariff. Three combinations were considered:

Option	Notice period	Trigger (% of budget)
1	1 month	80%
2	1 week	97%
3	No notice	100%

These possible options would have animpact upon the likelihood of each of the scenarios discussed above occurring - through setting the trigger point at different levels the probability of reaching it change. The lower the trigger the more likely the scheme is to be suspended. While this is considered of net benefit if the suspension is appropriate, a low trigger point also increases the probability of an unnecessary suspension of the scheme.

An unnecessary suspension would occur where deployment was high enough to trigger suspension but would in reality not have resulted in overspend. The lower the trigger and longer the notice period the more uncertainty and therefore possibility of this occurring. In combination with the £70m budget an 80% trigger would increase the chance of an unnecessary suspension substantially. In this case, sensitivity analysis suggests an increase in application rates to 27MW rather than 50MW per week by the end of the year, could be sufficient to suspend the scheme. Such a scenario would see an unnecessary suspension.

Where unnecessary scheme suspension occurs the costs described above would still hold while the benefits would not. In addition to this a new set of costs would exist: the instability to deployment and supplier/investor confidence costs which would not have happened in the counterfactual. Thus such an outcome could lead to a considerable cost to society, through inefficient deployment profile caused by expansion and contraction of supply.

Conversely a higher trigger with a long notice period would increase the chance of overspend but decrease the risk of unnecessary suspension.

The other key element of this decision is the impact on supplier/investor confidence. Confidence is expected to increase with notice period, but also with trigger point. Where there is no notice period or the notice period is very short installations in construction risk the scheme being suspended before they are able to apply. This places a cost on those individuals, however with the long lead times involved in many projects it is not feasible to have a notice period which matches the lead time. In addition the shorter notice period allows a higher trigger and as such reduces the risk of such a trigger being met.

A week long notice period increases the possibility that under high deployment, the identified trigger will become self-enforcing (i.e. that as estimated expenditure approaches the trigger, deployment may slow due to the threat of suspension). This could be a cost if the signalling effect is too high and deployment slows unnecessarily. However, given the lead-times of projects running into months/years, it is unlikely that a notice period of a month rather than a year would make much impact to the perceived risk of embarking on an installation.

Assessment of probability of trigger:

Applications Data:

The scheme launched in December 2011 and has been open for applications for six months. DECC considers it too early to use this data to extrapolate trends for installations, particularly given the lag on accrediting applications. As set out above, assuming smooth weekly growth, it is considered that applications rates would need to grow 500% by the end of 2012/13 from levels seen to date in order to reach the trigger point. This is considered possible, but only in the case that subsidies are extremely over-generous and a bubble occurs. The necessary growth rate is considered even more unlikely to happen given the fact that 57% of applications seen to date have been installed prior to the RHI opening, and the long lead times for most technologies.

Central projections:

DECC produces estimates of deployment and hence expenditure under the RHI using the NERA RHI model and data on performance and costs of measure provided by AEA[1].

This modelling contains a large number and variety of assumptions. There are high levels of uncertainty in many of these assumptions, the main sources of which are as followed:

a. Demand Constraints: The model is built such that the underlying trend in boiler replacement is a constraint on demand, such that boilers will not be replaced faster than the rate of once every 15 years (with 15 years being the assumed lifetime of a gas boiler). Clearly, where rates of return are very high this relationship will be stretched and may no longer hold. Although it may be more efficient for society (through avoiding peaks and troughs in deployment) to maintain this relationship, without a mechanism in place to do so, this may be an over-constraining feature of

[1] http://www.decc.gov.uk/en/content/cms/meeting_energy/renewable_ener/incentive/incentive.aspx - details can be found here

modelling as incentives for consumers and suppliers are not to seek efficient deployment for society.

b. Supply Constraints: The model, through construction, requires an upper-bound assumption on annual supply chain growth. Although this is set at relatively high levels, clearly it is not a strict constraint. In reality, supply chain growth will be a function of the profitability of installations to installers, which in turn will be a function of the rate of return available under the RHI. Therefore, again, in the case that rates of return are higher than intended, this assumption may be over-constraining.

c. Data: The UK renewable heat market is relatively small, and costs, performance and usage of renewable heat measures are highly heterogeneous. It is therefore possible that the simplifying assumptions in modelling and data collection do not give an accurate enough picture of investment decisions. It may also be the case that data may change.

DECC modelling currently predicts expenditure on the RHI to be around £40m for 2012/13 with around £15m of this legacy spend from installations already in place. This is in-line with the application rate we have seen to date of around 10MW per week.

As explained above, due to the diminishing marginal 2012/13 cost of installations being installed later in the year (because they have less hours to produce heat), large rates of growth in application rates can have relatively small impacts in 2012/13 expenditure. Hence a £67m trigger allowing for around 500% growth in application rates above the current and predicted average rates.

Some of these assumptions can be explored by sensitivity analysis, but the model has been designed to arrive at a central view of likely deployment, and does not fully capture upside risk.

Summary:

The NPV of the scheme would be the costs and benefits of each of the scenarios presented above multiplied by the probability of those occurring.

The following table lays out the assessments of costs and benefits discussed above. It is considered that the costs and benefits of:

Scenario 1, are roughly equal as a small increase in confidence that the scheme is unlikely to be suspended offsets negligible administrative burdens and the negligible possibility that this regulation will damage confidence through setting conditions for suspension.

Scenario 2, would expect to provide more benefits than costs as impacts on investor confidence net out and the potential benefit of avoiding overspend through "signalling" is considered greater than the very low cost of administration to suppliers;

Scenario 3, is expected to confer far greater benefits than costs through avoided overspend, minimising volatility in the market against the counterfactual and allowing DECC to set more suitable tariffs.

DECC considers that this regulation offers either a net benefit or neither a net benefit nor cost, in each of these scenarios, and therefore offers an expected net benefit to society

	Costs			**Benefits**		
	Impact of uncertainty on demand and supply	**Administrative burden on suppliers**	**Administrative Burden on scheme administrators**	**Avoided overspend**	**Increased confidence**	**Opportunity to address tariffs (reduce rents)**
Excessive Deployment	Negligible	Negligible	Negligible	None	Very Low	None
High Deployment	Low	Very Low	Negligible	Low	Low	None
Low	None	Very Low	Low	High	Medium	High

Deployment						

Risks and assumptions

As discussed above, the impacts of this policy rely on two major assumptions:

1. The level of deployment
2. The response of suppliers and investors to the signalling effect of the trigger.

Wider Impacts

The RHI is a voluntary scheme and therefore this regulation is not seen as producing any impact on business.

It is not considered that this policy will have any impact on competition, rural issues or diversity.