



Consultation Paper

**Review of Non Domestic Renewable
Heat Incentive Scheme 2016**

September 2016

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MINISTERIAL FOREWORD



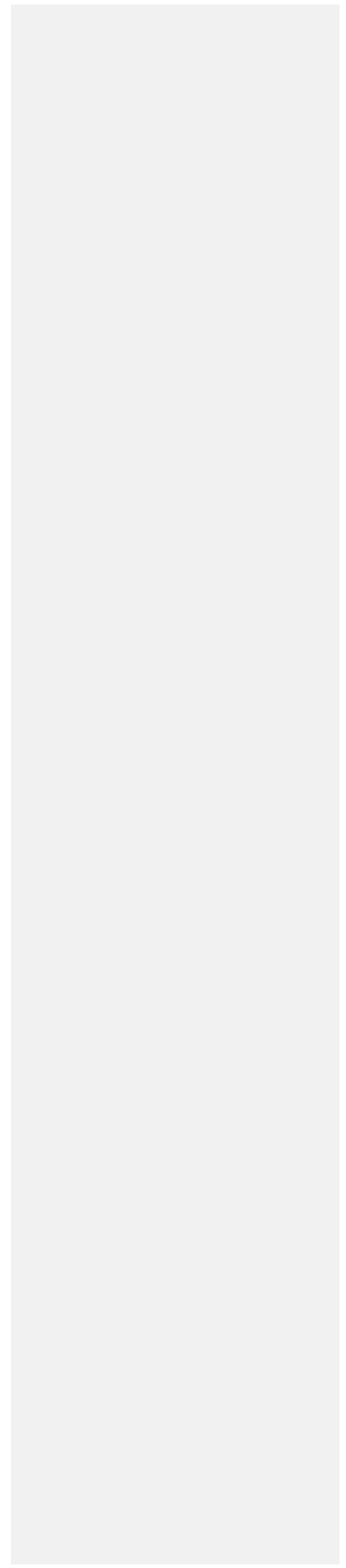
This consultation seeks your views xxxxxxxxxxxxxxxxxxxxxxxx the non-domestic Renewable Heat Incentive (RHI) scheme in Northern Ireland.

I would encourage you to respond to the consultation...

Simon Hamilton MLA

Minister for the Economy

EXECUTIVE SUMMARY



INTRODUCTION

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Strategic Context

- 1.1. The 2009 Renewable Energy Directive (2009/28/EC) commits the UK to increasing its share of renewable energy to 15% by 2020. This requirement includes electricity, heating and cooling, and transport. In order to help the UK achieve this target, the Department of Energy and Climate Change (DECC) was allocated £860m of funding from Her Majesty's Treasury (HMT) to support the introduction of a Renewable Heat Incentive (RHI) scheme from 2011-2015.
- 1.2. Due to the unique composition of the Northern Ireland heating market and its reliance on oil it was agreed that a separate NI renewable heat incentive (RHI) scheme would be implemented. HMT allocated £25m of funding to the Executive for a NI RHI scheme over the 2011-15 period. This was approximately 3% of the total UK allocation and based on the Barnett formula¹.
- 1.3. Through its Programme for Government (PfG) the Northern Ireland Executive set a target of achieving 4% of renewable heat by 2015. This was an interim milestone to achieving 10% renewable heat by 2020 in line with the Executive's Strategic Energy Framework (SEF). These targets were set against a heating demand of only 1.7% from renewable sources in 2010.
- 1.4. The Non-Domestic Renewable Heat Incentive (RHI) scheme was introduced in pursuit of these targets in November 2012.

¹The Barnett formula dictates the level of funding provided from HMT to devolved administrations.

NI RHI Scheme Design

- 1.5. In 2011, Northern Ireland was almost entirely dependent on imported fossil fuels, leaving consumers vulnerable to price fluctuations beyond our control. This was particularly true of the heat market, where over 98% of heating fuel was imported and accounted for around half of all the total energy consumed in Northern Ireland.
- 1.6. Renewable heating technologies were unable to compete financially with existing fossil fuel alternatives from two perspectives. Firstly, renewable heating technologies require a higher initial investment based on increased capital costs. Secondly, the running costs of renewable heating technologies (particularly biomass) were initially higher than fossil fuel alternatives. To address this, the Non Domestic RHI scheme provided a range of financial incentives to installers of renewable technologies with payments being made on a quarterly basis. Incentives are provided through tariff payments, and are set in the form of pence per kilowatt hour (p/kWh) with the level of tariff being dependent on the type and size of the technology introduced.
- 1.7. The tariffs under the RHI scheme were designed to cover the difference in cost between the renewable heat technology chosen for the installation and a traditional fossil fuel heating system. As such, they incorporate the differences in capital costs, operating costs, as well as "hassle" (i.e. non-financial) costs which represent a barrier to the adoption of renewable heat (e.g. administrative costs). The tariffs were also designed to provide an average rate of return of 12%² on the initial capital cost. **The proposed tariffs were approved³ by the EU Commission for State Aid purposes on this basis.**
- 1.8. Participants in the scheme receive payments on a quarterly basis based on the multiplication of the installation's metered output by the relevant tariff level. **Only "useful heat" is eligible for payment under the RHI scheme, that is, heat which would otherwise have to be met by fossil fuels.** This eliminates any incentive for deliberately wasting heat to receive payments.

Scheme Closure

- 1.9. Despite low levels of initial uptake with the scheme in the first few years of the scheme, an unprecedented spike in demand in the run up to tariff changes in November 2015 seen almost 1,000 applications received in 6 weeks. This more than doubled the total number of

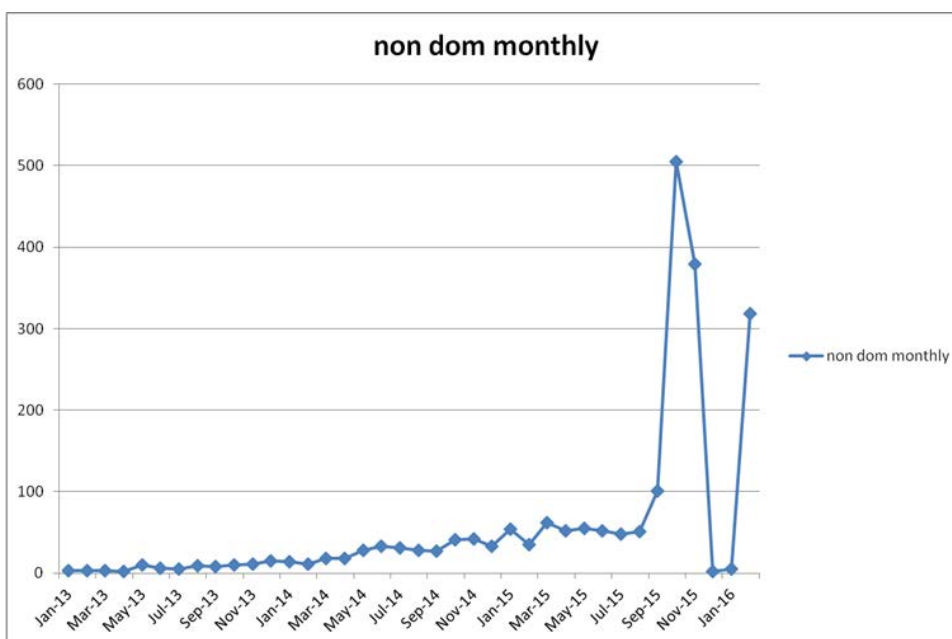
² 6% rate of return was applied for solar thermal.

³ The RHI scheme needs to operate within the terms and conditions of its State aid approval (SA.34140) and the European Commission's Guidelines on State aid for environmental protection and energy

applications. This spike in demand caused significant budgetary pressures with committed RHI payments to scheme participants exceeding the budget allocations from HMT. This led to both RHI schemes having to be closed to new applications from 29 February 2016. A further spike in applications was received prior to scheme closure.

Comment [SW1]: Have avoided including any figures ie. £140m DEL pressure over 5 years

1.10. Before closure, the non-domestic RHI Scheme had incentivised over 2,100 renewable heating installations and the Executive's 2015 target of 4% renewable heat had been exceeded. The graph below shows how monthly application numbers spiked in the autumn 2015 and prior to closure in February 2016.



Purpose of this paper

1.11. Following scheme closure, the Department has been evaluating the Non Domestic RHI scheme and has identified that many RHI participants on the medium biomass tariff who joined the scheme before 18 November 2015 are set to receive much higher rates of return for their investments than the 12% originally envisaged and approved by the EU Commission for State Aid purposes. This is primarily due to:

- (i) A significant reduction in the capital and operating costs of renewable heating technologies since the scheme was introduced in 2012; and

- (ii) Average payments to participants being much larger than originally envisaged because of the typical boiler size (at 99kw) and running hours being much higher than the reference case used for calculating the original tariff.

1.12. The Department has also received evidence that some RHI recipients are knowingly wasting heat to generate increased RHI payments. This evidence was gathered as part of an independent investigation the Department commissioned into allegations received of potential scheme abuse.

Comment [SW2]: Are we happy to be so open? It does give us justification for controls possibly better than State Aid point.

1.13. This document sets out the Department for the Economy's proposals to strengthen scheme controls to:

- (i) eliminate any incentive for participants to deliberately waste heat to receive increased RHI payments; and
- (ii) ensure RHI recipients receive a reasonable rate of return (12%) in line with the EU State Aid approval and aren't overcompensated.

1.14. Failure to implement additional controls to bring the average rate of return back into line with the original EU State aid approval could lead to participants having to pay back some or all of the payments received, plus interest.

Comment [SW3]: Not sure we can include this. Check with stephen moore.

Comment [SW4]: Have avoided mentioning budgetary pressures.

Equality Impact

1.15. The impacts of the proposals were analysed for equality of opportunity, and the need for an Equality Impact Assessment (EQIA) was screened out. A copy of the screening form can be viewed on the Equality Section of the Department's website.

Other Regulatory Impacts

1.16. A Regulatory Impact Assessment (RIA) was carried out on the proposals and concluded that

1.17. The proposals were also screened for rural proofing puposes.....

Comment [SW5]: Need to provide narrative.

How to respond

1.18. Responses to this consultation should reach DfE on or before **31 October 2016** and should be sent, preferably by e-mail, to: ni.rhi@economy-ni.gov.uk

Or by post to:

Energy Renewables Branch
Department for the Economy
Netherleigh
Massey Avenue
BELFAST
BT4 2JP

1.19. All responses should include the name and postal address of the respondent.

Confidentiality & Data Protection

1.20. DfE may make your response public. If you do not want all or part of your response or name made public, please state this clearly in the response by marking your response as 'CONFIDENTIAL'. Any confidentiality disclaimer that may be generated by your organisation's IT system or included as a general statement in your fax cover sheet will be taken to apply only to information in your response for which confidentiality has been specifically requested.

1.21. Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the access to information regimes (these are primarily the Freedom of Information Act 2000 (FOIA) and the Data Protection Act 1998 (DPA)). If you want other information that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence.

1.22. In view of this, it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department.

Copies of the Consultation

1.23. This Consultation document is being produced primarily in electronic form and may be accessed on the DfE Energy website: www.economy-ni.gov.uk. If you require access to this consultation in hard copy, or in a different format – e.g. Braille, disk, audio cassette – or in a minority ethnic language please contact the Department on 028 9052 9581 and appropriate arrangements will be made as soon as possible.

Need to Review Tariffs

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Tariffs

- 2.1 One of the key factors in the design of the Non Domestic RHI scheme was the setting of tariffs which needed to be sufficient enough to stimulate demand and not too high as to over incentivise the technologies. The proposed tariffs were set to account for the differences in capital, operating and “hassle” costs against a counterfactual position of heating oil. Oil was used as the counterfactual for the NI Scheme as Northern Ireland was and still is primarily dependent on oil and it was envisaged that the vast majority of installers would be switching from an oil heating system. The tariffs were also designed to provide participants with a 12% rate of return on their initial capital investment at installation stage.
- 2.2 A range of tariffs were introduced, the level of which varied depending on the type and size of technology and support was designed to be paid over a period of 20 years, which is the expected lifetime of the technology. The tariffs that were available for the various technologies are summarised in the Table below.

Technology	Tariff (p / kWh)		
	<20KW	20 – 99KW	>99KW
Biomass (before 18 November 2015)	6.8	6.5	1.5
Ground Source Heat Pump	9.1	4.7	1.3
Solar Thermal	9.2		
Biomethane all scales, biogas < 200kWth	3.3		

2.3 The tariffs in place at the point in which an installer applied remain the same through the 20 years of the scheme, with any revised tariffs only applying to subsequent applicants. Tariffs would be increased each year with inflation. The rationale behind 'grandfathering' rates was to provide certainty and security to investors regarding the level of support they receive.

Scheme Uptake

2.4 The NI Non Domestic RHI scheme has incentivised 2,128 installations since its introduction in November 2012. A summary of the Non Domestic RHI installations by technology and size is provided below.

Installations Before 18/11/15	Tariff Banding (by size)			Total
	0-19 kWh	20-99kWh	100-999kWh	
Technology				
Biomass	9	1767	23	1799
Ground Source Heat Pump	3	3	-	6
Solar	3	-	-	3
Total No of Installations before 18/11/15				1808

Installations After 18/11/15	Tariff Banding (by size)			Total
	0-19 kWh	20-199kWh	200-999kWh	
Technology				
Biomass	3	288	13 ⁴	304
Ground Source Heat Pump	10	3	-	13
Solar	2	1	-	3
Total No of Installations after 18/11/15				320

Total Number of Installations	2128
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1.24. The Executive's interim target of 4% renewable heat by 2015 has been achieved with current estimates suggesting that around 6% of NI heating needs are now provided through renewable heating technologies. This is a significant achievement against a starting position of only 1.7%. However, biomass accounts for almost 99% of all RHI installations and the majority of these installations fall into the medium banding (20-99kw). The only other technologies installed are Ground Source Heat Pumps (15) and Solar Thermal (6).

1.25. The high levels of uptake in biomass technology gave a strong indication that biomass technology costs have reduced over the last few years and that participants were being overcompensated. This was backed up by the fact that over 70% of RHI installations (1,554) were completed in the last 11 months of the scheme. In response to the increased demand, the Department introduced tariff changes to the small and medium biomass tariffs in

⁴ Includes 2 proposed CHP installations at preliminary accreditation stage.

November 2015. Despite introducing these changes, a further 304 biomass installations were completed in the 2½ months before scheme closure in February 2016.

Rates of Return

1.26. Following scheme closure, the Department has been evaluating the Non Domestic RHI scheme and has identified that many RHI participants on the medium biomass tariff are set to receive much higher rates of return for their investments than the 12% originally envisaged and approved by the EU Commission for State Aid purposes.

Medium (20 – 199 KWh) Biomass Tariff post 18 November 2015

1.27. The NI Assembly approved legislation on 18 November 2015 introducing a Tier to the Small and Medium Biomass Tariffs whereby the rate would reduce to 1.5 p / KWh after 1,314 hours (15%). A similar tiered tariff exists in the GB RHI scheme. In addition, an annual payment cap was introduced at 400,000 KWh over the tariff drops to zero. The medium biomass banding was also extended to boilers up to 199KWh in line with the GB scheme. The new tariffs are shown below.

New Biomass Tariffs for installations made on or after 18 November 2015	Tariff (p / KWh)	
	Small Biomass (<20KW)	Medium Biomass (20 – 199KW)
Tier 1 This applies to the initial heat generated for the first 1,314 hours in each 12 month period from either the accreditation date or the anniversary of the accreditation date.	6.8	6.5
Tier 2 This applies to further heat generated over that specified for 'Tier 1' up to a maximum of 400,000kWhth. Any further heat generated over 400,000kWhth is not eligible for RHI payments.	1.5	1.5

1.28. A further 300 biomass installations were incentivised under this revised tariff during the last 2½ months of the scheme. Most of these installations involved 199 KW boilers. Although payment data is currently not available for many of these installations, the maximum payment a participant could receive in 2016/17 is £19,075 under the tiered and capped tariff. This translates into an annual rate of return of between 13.2% and 17.7% depending on the initial capital outlay.

1.29. An analysis was also completed for a 199KW boiler only running in Tier 1 (1,314 hours) and receiving just the higher 6.5p tariff. This gave a marginally lower rate of return of between 12.9% and 17.4%. A summary of the analysis is shown in the table below.

Rate of Return Analysis 199 KW Biomass Boiler (post 18/11/15)	199 KW Boiler running for 2,010 hours (Tier 1 & 2)	199 KW Boiler running for 1,134 hours (Tier 1 only)
Annual Heat Demand	400,000 KWh (cap)	261,486 KWh
Annual cost of operating wood pellet boiler (wood, servicing etc) assuming 85% boiler efficiency.	$(400,000/0.85) \times \pounds 0.0401 = \pounds 18,870$	$(261,486/0.85) \times \pounds 0.0401 = \pounds 12,336$
Annual oil cost not incurred (85% efficiency)	$(400,000/0.85) \times \pounds 0.0285 = \pounds 13,412$	$(261,486/0.85) \times \pounds 0.0285 = \pounds 8,768$
Annual net cost of supplying fuel to biomass boiler	£5,458	£3,568
Tier 1 Annual Payment = $(199 \times 1314 \times \pounds 0.065) = \pounds 16,997$	£16,997	£16,997
Tier 2 Annual Payment = $(400,000 - [199 \times 1314]) \times \pounds 0.015 = \pounds 2,078$	£2,078	-
Total Annual Payment	£19,075	£16,997
Annual saving	£13,617	£13,429
Saving over 20 years	£272,340	£268,580
Initial capital cost of biomass installation (range)	£60,000 - £75,000	£60,000 - £75,000
Profit over 20 years	£212,340 - £197,340	£208,580 - £193,580
Annual Profit	£10,617 - £9,867	£10,429 - £9,679
Payback time (Capital Cost / Annual Saving)	4.4 - 5.5 years	4.5 - 5.6 years
Annual Rate of Return (Annual Profit / Capital Cost)	17.7% - 13.2 %	17.4% - 12.9%

1.30. Although both scenarios could provide rates of return above 12% depending on the initial capital outlay, 17.7% is the maximum rate of return any participant could receive which falls well within the specified range of between 8% and 22%. No further tariff changes are therefore necessary.

Medium (20 – 99 KWh) Biomass Tariff before 18 November 2015

1.31. The original medium biomass tariff (20-99kw) of 6.5 p/KWh⁵ was based on providing a 12% rate of return on the initial capital outlay (after 20 years) and covering the additional annual costs of running a 50KW biomass system over a comparative oil system for an annual heat requirement of 63,325 KWh⁶. Allowance was also made for additional 'barrier' costs of moving to a new technology. Based on these assumptions, average annual payments in 2016 would be expected to be **£4,116**.

⁵ Original 2012 tariff of 5.9 p/KWh has been increased with inflation.

⁶ It was assumed that both systems would be running for 17% of the time (1,490 hours / yr).

1.32. The Department completed an analysis of the 1,400⁷ installations that have received quarterly payments to date. This showed the average annual payment to be £26,000 - over 6 times higher than what was originally assumed. This is because in practice, boilers of 99 KW in size have tended to be installed rather than the 50KW assumed. In addition, the boilers are running for over 4,000 hours / year on average compared to the 1,490 hours assumed. Based on these figures, the average annual rate of return is between 38% and 66%. The calculations are shown in the table below.

Comment [SW6]: Need to get average figure from Alan

Rate of Return Calculation for 99 KW Biomass Boiler (before 18/11/15)	
Average Annual Heat Demand	400,000 KWh
Annual cost of operating wood pellet boiler (wood, servicing etc) 400,000 x £0.0401 ⁸ = £16,040	£16,040
Annual oil cost not incurred 400,000 x £0.0285 ⁷ = £11,400	£11,400
Annual net cost of supplying fuel to biomass boiler	£4,640
RHI Annual subsidy in NI Total Payment = (400,000 x 0.065) = £26,000	£26,000
Annual saving	£21,360
Saving over 20 years	£427,200
Capital cost to install biomass installation	£30,000 - £50,000
Profit over 20 years	£397,200 - £377,200
Annual Profit	£19,860 - £18,860
Payback time (Capital Cost / Annual Saving)	1.4 - 2.3 years
Annual Rate of Return (Annual Profit / Capital Cost)	66% - 38%

Comment [SW7]: Figures need checked by Alan

1.33. The EU Commission's State Aid approval is based on scheme participants receiving an average rate of return of 12% over the lifetime of the technology (within an overall range of 8% to 22% depending on boiler size).

Comment [SW8]: Does State Aid approval say this?

1.34. Failure to implement additional controls to bring the average rate of return back into line with the original EU State aid approval could lead to participants having to pay back some or all of the payments received, plus interest in the future.

Comment [SW9]: Not sure we can include this. Check with stephen moore.

⁷ At the time of the analysis, there were still over 700 installations awaiting their first payment.

⁸ Price of oil (2.85 p / KWh) and biomass (4.01 p / KWh) based on figures provided by CAFRE in July 2016.

Consultation Question XX

Do you support the introduction of additional controls through the Medium Biomass RHI tariff to reduce annual payments and bring the average annual rate of return back into line with the scheme's approval?

Please provide your reasons for your answer.

Inefficient Heating Practices

1.35. In July 2016, the Department commissioned an independent investigation into whistleblower allegations received of potential scheme abuse. The investigation is still ongoing, but the Department has received evidence that some scheme participants on the original medium biomass tariff are wasting heat and generating increased RHI payments through inefficient heating practices such as

- using multiple 99KW boilers to heat a single building instead of one larger boiler (>199KW) with a lower tariff;
- poorly insulated buildings and associated pipe work; and
- poorly designed heating systems where entire building must be heated and not individual zones or rooms.

1.36. Such behaviours may not be enforceable under the scheme legislation or the guidelines, however, EU State Aid requirements mean that only 'useful heat' is eligible for payment under the RHI scheme. In other words, only heat which would otherwise have to be met by fossil fuels. To ensure compliance with these requirements, the Department will have to introduce controls through the tariffs to eliminate any incentive for generating excess heat to increase payments.

Consultation Question XX

Do you support the introduction of controls through the RHI tariffs to eliminate any incentive for generating excess heat to increase RHI payments?

Please provide your reasons for your answer.

Comment [SW10]: Need Steering Group approval over references to independent investigation.

Budgetary Pressures

1.37. As shown above, the average annual rate of return for participants on the original medium biomass tariff could be as high as 66%. Should this continue, it will place considerable strain on the public purse and therefore on public services in Northern Ireland. Our current obligation to existing scheme participants will cost the Northern Ireland block grant an estimated £140m over the next five years. The table below shows the proposed budget provided by HMT versus the expected total expenditure. The Domestic RHI scheme accounts for just over £3m of total RHI expenditure each year.

	16-17 (£000s)	17-18 (£000s)	18-19 (£000s)	19-20 (£000s)	20-21 (£000s)	Total (£000s)
Total RHI Payments	50,700	51,700	54,800	55,700	56,600	269,500
AME Allocation from HMT	18,300	22,300	25,700	28,900	34,300	129,500
Pressure on NI Block Grant	(32,400)	(29,400)	(29,100)	(26,800)	(22,300)	(140,000)

1.38. In this situation, £140m will be diverted away from other public services. It is clear that the Department must balance its budgetary obligation to the schemes with our wider obligation to safeguard against unnecessary cost to the public purse. The Department must also ensure appropriate controls are in place within the RHI scheme to ensure it delivers value for money and meets its intended aims with no payments being paid for ineligible heat.

Consultation Question XX

Do you support the principle of balancing our budgetary obligation to scheme recipients with our wider obligation to safeguard against excessive cost to the public purse?

Please provide your reasons for your answer.

The 'Grandfathering Principle' and 'Reasonableness'

1.39. Consistent with the GB scheme, DETI committed to the principle of 'grandfathering'. In practical terms, this means that any changes to tariff levels (higher or lower) should only affect new projects accredited on or after the introduction of any new support levels. The Department continues to support the grandfathering principle; however, it is important that this is seen in the context of ensuring a reasonable rate of return for scheme participants whilst safeguarding against unnecessary cost to the public purse.

1.40. Chapter 2 examines possible options for amending the medium biomass tariff for installations completed before 18 November 2015 to:

- bring the level of compensation for participants back into line with the scheme approval whilst ensuring scheme participants continue to receive a reasonable return; and
- eliminate any incentive for generating heat simply to receive payments.

1.41. Scheme recipients should be assured that regardless of the option selected, they are **guaranteed** payments for the full 20 years of the scheme. They are also guaranteed that these payments will provide a reasonable rate of return, whatever the outcome of the consultation.