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**From:** Hughes, Seamus <Seamus.Hughes@detini.gov.uk>  
**Sent:** 22 October 2015 14:29  
**To:** John Batch  
**Cc:** Peter Larmour; Jim Clarke; Daniel Purdy; Nuala Devlin; Gillian Stewart; George Healy  
**Subject:** RE: New RHI Tariff - Modelling Economics

John

Sorry just to be clear. The 1314 operating hours in a given year is paid at the 6.4 pence tariff and hours above at 1.5 pence up to the maximum of the 400,000 annual cap. The example presented below has operating hours below the 1314, hence the 6.4 pence tariff applies to all. There is no RHI payment over 400,000kWh's in a given year.

Regards

Seamus

### Seamus Hughes

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**From:** John Batch [<mailto:john.batch@investni.com>]  
**Sent:** 22 October 2015 14:08  
**To:** Hughes, Seamus  
**Cc:** Larmour, Peter (InvestNI); Jim Clarke; Daniel Purdy; Devlin, Nuala (InvestNI); Stewart, Gillian (InvestNI); George Healy  
**Subject:** RE: New RHI Tariff - Modelling Economics

Thanks Seamus

This is great news – we had wrongly thought that the 1.5p/kWhr applied after the first 1314 hours. It seems it is the reference to the 1314 hours that is causing the misunderstanding and misinterpretation.

It's clear now that the 1.5p/kWhr only applies if the 400,000 kWhr/yr threshold is exceeded and that the 6.4p/kWhr applies annually. We thought the cap meant that no RHI payment was payable beyond this threshold.

This will greatly improve the economics – I will go back and flag this up with the consultant and the other TA's

Very timely indeed.

Many thanks for the help

John

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**From:** Hughes, Seamus [<mailto:Seamus.Hughes@detini.gov.uk>]  
**Sent:** 22 October 2015 13:50

**To:** John Batch <[john.batch@investni.com](mailto:john.batch@investni.com)>  
**Cc:** Peter Larmour <[peter.larmour@investni.com](mailto:peter.larmour@investni.com)>; Daniel Purdy <[daniel.purdy@investni.com](mailto:daniel.purdy@investni.com)>; Jim Clarke <[james.clarke@investni.com](mailto:james.clarke@investni.com)>; Wightman, Stuart <[Stuart.Wightman@detini.gov.uk](mailto:Stuart.Wightman@detini.gov.uk)>  
**Subject:** RE: New RHI Tariff - Modelling Economics

John

The assumptions presented below are incorrect. As I confirmed in my email yesterday the 400,000kWh cap is an annual figure. Therefore in the instance presented below the estimated heat demand is under the cap for each of the 5 years so the 6.4 pence tier 1 tariff would apply i.e £4,486 RHI payment for each of the 5 years shown.

I hope this explains things.

Regards

Seamus

**Seamus Hughes**

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**From:** John Batch [<mailto:john.batch@investni.com>]  
**Sent:** 22 October 2015 13:30  
**To:** Hughes, Seamus  
**Cc:** Larmour, Peter (InvestNI); Daniel Purdy; Jim Clarke  
**Subject:** New RHI Tariff - Modelling Economics

Hi Seamus,

Just giving you a heads up on some figures beginning to come through to us from consultants modelling the new RHI tariff structures. Essentially the 1.5p tariff is offsetting fuel costs to a cost neutral point which is good and the 6.5p tariff provides a small proportion towards the capital investment. However the paybacks are not viable and the incentive may not drive deployment at this level and scale.

Happy to feed through other modelling if you feel it will help to build a bigger picture.

I fully understand the constraints you are working under as well, just trying to provide some clarity. From our perspective it would seem than in many cases Biomass Heating may not be viable in terms of reducing energy costs and carbon reductions will be hindered by the weak economic case.

Hope this helps

John

## Review & Comparison of Heating Options

### 9.1 Options Considered

- Option 1

Continue to operate the Warmflow and Powrmatic oil-fired Warm Air Heaters during the coldest winter periods.

**Capital Cost:** Nil

**Revenue Cost** associated with fuel: £3,763 per annum for oil.

- Option 2

Install 2No. 99kW wood-pellet fueled heating systems to satisfy the heating base load.

1. Install one to feed Folding areas.
2. The second system to feed the Lacing Area.

Heat losses should be minimised first in order to optimise the use of these wood pellet systems.

**Capital Cost:** £90,000

**Revenue Cost associated with fuel:** Wood Pellets £4,964

One 99kW boiler operating for 59 hours per week, 20 weeks a year at 75% utilisation and 80% efficiency will consume approximately 70,092 kWh or approximately 14.6 tonnes of wood pellets. At approximately £170 per tonne of pellets this equates to £2,482. Therefore two boilers will consume a total of approximately 29.2 tonnes per annum at a cost of £4,964.

**RHI Payment:** £8,972 for first year, £5,432 for second year and £2,102 for each year thereafter.

An RHI payment of approximately £4,486 per boiler for the first year, £2,716 for the second year and £1,051 for each year thereafter would be obtained assuming a system efficiency of 80% i.e. combustion efficiency, distribution losses and emitter efficiency.

A detailed breakdown of RHI received based on usage is detailed in Table 9.2 overleaf.

	Year 1	Year 2	Year 3	Year 4	Year 5
Biomass Boiler rating (kW)	99	99	99	99	99
Hours of operation per week	59	59	59	59	59
Weeks per year	20	20	20	20	20
Hours per year	1,180	1,180	1,180	1,180	1,180
Seasonal adjustment (%)	75	75	75	75	75
Seasonal adjusted hours per year	885	885	885	885	885
Boiler efficiency (%)	80	80	80	80	80
kW per year	70,092	70,092	70,092	70,092	70,092
Tier 1 kW/yr	70,092	33,977	0	0	0
RHI Tier 1 @ 6.4p/kWh	£4,486	£2,175	£0	£0	£0
Tier 2 kW/yr	0	36,115	70,092	70,092	70,092
RHI Tier 2 @ 1.5p/kWh	£0	£542	£1,051	£1,051	£1,051
<b>Total RHI</b>	<b>£4,486</b>	<b>£2,716</b>	<b>£1,051</b>	<b>£1,051</b>	<b>£1,051</b>

*Table 9.2 - Breakdown of RHI payment for one 99kW boiler*

The 6.4p/kWh Tier 1 tariff is applied for the first 1,314 hours of operation. For a 99kW boiler at 80% efficiency this equates to 104,069 kWh.

Therefore the Tier 1 tariff is applied throughout Year 1 and part of Year 2. Beyond 1,314 hours, the 1.5p/kWh Tier 2 tariff is applied and RHI payment totals £1,051 per boiler per annum.

Taking into consideration that this biomass option will remove £3,763 of oil costs per annum, and wood pellets would cost £4,964 per annum, this means that Year 3 and beyond savings will be low due to the reduced RHI Tariff Tier. Therefore biomass heating is not a feasible option for [REDACTED] INC20 at this time due to extended payback period (30+ years) and Option 1 is the recommended choice.

Regards

John Batch

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