Christopher Osborne

From: Hughes, Seamus <Seamus.Hughes@detini.gov.uk>
Sent: 22 July 2015 12:15
To: Christopher Osborne
Cc: tom.forgrave@[Personal information redacted by the RHI Inquiry] Wightman, Stuart
Subject: RE: Proposed changes to the NIRHI
Attachments: Environmental Control in Poultry (Broiler) units. C Ellis July 2015 2.docx

Good afternoon Chris/Ivor/Tom

Thank you for coming in to see us earlier, it was a very useful meeting from our perspective and helpful in our considerations going forward.

As promised I am attaching a copy of the CAFRE paper on broiler houses which we mentioned in the meeting. CAFRE is happy for us to share this with you and we are content to receive any comments you feel relevant.

Regards

Seamus

Chris

I don't have an email address for Ivor so grateful if you could forward on to him

Seamus Hughes
Energy Efficiency Branch
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From: Christopher Osborne [mailto:christopher@ufuhq.com]
Sent: 10 July 2015 11:52
To: Hughes, Seamus
Subject: RE: Proposed changes to the NIRHI

22 July at 10.30am suits best, see you then.

C

From: Hughes, Seamus [mailto:Seamus.Hughes@detini.gov.uk]
Sent: 10 July 2015 11:48
To: Christopher Osborne
Subject: RE: Proposed changes to the NIRHI

Hi Chris

There will be no changes before 1st October.

Regards

Seamus

Seamus Hughes
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From: Christopher Osborne [mailto:christopher@ufuhq.com]
Sent: 10 July 2015 11:43
To: Hughes, Seamus
Subject: RE: Proposed changes to the NIRHI

Many thanks Seamus, 22 or 23 July will suit, but need to double check with Ivor and Tom as to which one suits best and I will get back to you.

One point whilst I am talking to you, a concern raised by one of our members concerns the timescale for introducing the new pricing system. I was led to believe that it would be 1st October 2015, but another contact told me it would be introduced sooner. Could you clarify the timescale?

Many thanks again.

C

From: Hughes, Seamus [mailto:Seamus.Hughes@detini.gov.uk]
Sent: 10 July 2015 11:39
To: Christopher Osborne

Cc: Wightman, Stuart
Subject: RE: Proposed changes to the NIRHI

Good morning Chris

Stuart and I would be happy to meet with you and your colleagues. Would either Wednesday 22 or Thursday 23 in the morning, say 10.30 am suit you?

Regards

Seamus

Seamus Hughes
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From: Christopher Osborne [mailto:christopher@ufuhq.com]
Sent: 10 July 2015 07:38
To: Hughes, Seamus
Subject: RE: Proposed changes to the NIRHI

Good morning Seamus,

The UFU Poultry Committee met last night and in light of the changes to the NIRHI they have requested a meeting with DETI. Would it be possible to arrange this asap? I am conscious of holidays etc but we are flexible for the next couple of weeks. Would it be possible to look at the week commencing 20 July? The UFU team would consist of myself, Tom Forgrave (Poultry Chair) and Ivor Ferguson (Deputy President).

I look forward to hearing from you.

Chris

From: Hughes, Seamus [mailto:Seamus.Hughes@detini.gov.uk]
Sent: 09 July 2015 13:58
To: Christopher Osborne
Cc: Wightman, Stuart
Subject: RE: Proposed changes to the NIRHI

Good afternoon Chris

Thank you for your email.

We have been taking views from Moypark and a range of stakeholders over recent days including what has come forward from UFU and are currently assessing those views and how we might move forward. The potential for a grace period is a difficult one given that we are currently already over budget and this position needs to be addressed urgently. That said we are of course understanding of people who have already made commitments and we will do what we can to assist those in this position so that they are not disadvantaged. In terms of consultation, DETI consulted formally on the phase 2 review of the RHI in late 2013 and this included proposals for cost control. It is the outworking from this consultation that is being taken forward now.

We will keep you informed on developments over the coming weeks.

Regards

Seamus

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From: Christopher Osborne [mailto:christopher@ufuhq.com]
Sent: 09 July 2015 11:26
To: Hughes, Seamus
Cc: Wightman, Stuart
Subject: Proposed changes to the NIRHI

Good morning Seamus,

I trust you are well.

It has been brought to my attention that changes are due to be introduced for the NIRHI on 1 October 2015. The UFU would have welcomed the opportunity to contribute for the debate on these changes and I am led to believe that a decision is being made before the summer recess and we are disappointed that were not consulted. In light of the short notice, the UFU are calling upon DETI to consider a grace period for farmers and landowners who are in the planning process or are nearing completion of a renewable heating project.

In addition, I am led to believe that our Poultry Chairman wrote to DETI to set out his concerns and the reply he was blunt and unhelpful, " I am not buying this". In my 10 years of dealing with Northern Ireland government departments I

do not recall reading such a dismissive and rude correspondence and our Chairman is entitled to feel aggrieved at this unprofessional attitude.

I look forward to hearing your thoughts.

Chris Osborne
Senior Policy Officer
Dairy and Rural Enterprise

Environmental Control in Poultry (Broiler) units.

Raising broiler chickens is big business in Northern Ireland. Energy costs for heating broiler houses from around 32°C for young birds, lowering to 23°C by about the fifth week are considerable and can have major impact on gross margins. Houses have traditionally been heated using LPG air blown heaters and canopy brooder systems.

Conversion to a biomass heating system can provide a cost effective, low carbon alternative to gas. Because biomass heating contributes no moisture, the chicken litter is kept drier, reducing ammonia levels, boosting growth and improving bird welfare. With biomass fuel being slightly more expensive than fossil fuels, kW for kW, installing a biomass heating system can significantly improve the welfare of the birds, but it is not economically viable without being subsidised.

Costs associated with conversion to biomass vs. LPG

Example 1 Wood Pellets		Cost per kWh of heat produced
Pellets	£179 per Tonne @ 4300kWh per Tonne (Assuming 4800kW/T @ 90% efficiency)*	4.16p
Increased requirement in electricity usage for pumps and fans @ 12p/kWh		0.30p
Boiler servicing cost		0.25p
Remedial repairs		0.10p
Total		**4.81p/kWh**

This does not include cost of capital and interest repayment, depreciation and additional labour – (approximately an additional 2p to 3p/kWh).

For comparison, LPG currently costs around 25p/l @ 6.6kWh/l **3.79p/kWh**

***NOTE! Not all boilers will run at 90% efficiency. Potentially boilers may run between 80% and 92% efficiency based on age, service schedules and design of system. Assuming 4800kW/T @ 80% efficiency heat produced would cost 4.49p per kWh.**

Example 2 Wood Chip		Cost per kWh of heat produced
Wood Chip	£120 per Tonne @3150 kWh per Tonne@ 30% moisture content (Assuming 3500 kW/T @ 90% efficiency)*	3.81p
Increased requirement in electricity usage for pumps and fans @ 12p/kWh		0.30p
Boiler servicing cost		0.30p
Remedial repairs		0.10p
Total		**4.51p/kWh**

This does not include cost of capital and interest repayment, depreciation and additional labour – (approximately an additional 2.5p to 3.5p/kWh).

For comparison, LPG currently costs around 25p/l @ 6.6kWh/l **3.79p/kWh**

***NOTE! Not all boilers will run at 90% efficiency. Potentially boilers can run between 80% and 92% efficiency based on age, service schedules, design of system and fuel quality/moisture content. Cost of heat produced assuming 3500kW/T @ 80% efficiency and 30% moisture content would cost 4.28p per kWh. Variation in moisture content can significantly change the heat produced and cost per kWh.**

Need for Heat!

Genetics and nutritional improvements in broiler production have been extremely important to the efficiency of poultry meat production. The full potential of broilers cannot be reached unless the proper environment is maintained in the broiler house.

Maintaining proper temperature to promote growth is key to efficient broiler production. Thus, heating a broiler house is extremely important in terms of performance, economic standpoint and the welfare of the birds. Chicks are not able to completely maintain their body temperature until approximately 14 days of age. During this time, it is crucial that floor temperature be maintained around 30 degrees C with minimum variation.

Ventilation is necessary to deliver fresh air and remove excess heat, moisture and noxious gases from the broiler house. Ventilation systems are usually of two types, natural airflow and mechanical air movement (fans).

The Welfare of Farmed Animals Regulations (Northern Ireland) 2012 states that:

Schedule 1, paragraph 13 – Air circulation, dust levels, **temperature**, relative air humidity and gas concentrations shall be kept within limits which are not harmful to the animals.

Schedule 1, paragraph 20 – Where the health and well-being of the animals is dependent on an artificial ventilation system –

a. Provision shall be made for an appropriate back-up system to guarantee sufficient air renewal to preserve the health and well-being of the animals in the event of a failure of the system; and
b. An alarm system shall be provided to give warning of any failure of the system.

Schedule 5, paragraph 5 – Ventilation shall be sufficient to avoid overheating and, where necessary in combination with **heating systems**, to **remove excess moisture.**

This is of importance when considering the environmental conditions within the broiler house and the difference in management between using a gas based heating system and a system utilising biomass.

Biomass will result in a drier atmosphere with relative humidity (RH) dropping below 40%. This provides the birds with a better start making them less prone to respiratory disorders. It does however require a higher degree of management to prevent dehydration in the first 24hrs. At a lower RH e.g. <35%, performance may be adversely affected and action may need to be taken to increase RH. As the chick grows the ideal RH should be <60%, with a high RH (above 70%) causing wet litter and associated welfare problems. As the broilers increase in weight, RH levels are controlled using ventilation and **heating systems**. With traditional LPG systems it has been almost impossible to achieve RH of <70% in the poultry sheds, which in turn can lead to CO_2 build up in the sheds of >3000ppm and ammonia levels of up to 20ppm. With the biomass systems installed CO_2 can be controlled at approximately 1000ppm and ammonia at 1 or 0ppm, making it a much-improved environment for the broiler and for the farmer.

According to Dr. Malcolm Mitchell from the Scottish Agricultural College, the temperature experienced by the birds is dependent on dry bulb temperature and RH. Birds lose heat to the environment by evaporation of moisture from the respiratory tract and through the skin. The higher the RH the less evaporation loss occurs, increasing the birds' apparent temperature at a particular dry bulb temperature. **Low RH** will decrease apparent temperature so at low RH the dry bulb **temperature will need to be increased.**

What effect does Biomass heating have on the RH in a broiler house?

Most farms have found a reduction in RH to 35% – 40% when using biomass-heating systems. The dry heat produced means less ventilation is needed to remove gases and water vapour, and is generally beneficial to bird health, reducing the incidence of hock burn, pododermatitis, breast blister, respiratory infections and possibly campylobacter. For day-old chicks, the ideal dry bulb temperature at 60% RH is 30.8 deg. C. However, at 40% RH the dry bulb temperature would need to be 36 deg. C. Therefore, to achieve the ideal temperature, additional energy will be required when using a biomass system.

Energy Requirement for heating

A standard 240 x 60ft, 27,000 bird broiler house (without renewable energy installed) in Great Britain, consumes on average 40,000 litres of LPG per year. (Article in Poultry World July 2015 by Paul Spackman - Simple steps to improve shed energy efficiency).This is equivalent to 264,000kWh of heat. (40,000 x 6.6kW =264,000). A typical broiler house in Northern Ireland will use up to 42,000 litres of LPG per year. This is equivalent to 277,200 kWh of heat. This can be explained by the difference in average temperatures between GB and Northern Ireland, NI being 2-3 degrees lower than GB (Met Office)

As explained above additional heat is required when using biomass for the heating of the houses.

A typical house in Northern Ireland will use 365,500kWh of biomass heat per year. (Around 30% more than LPG due to lower RH and an additional 5 deg. C. required). However, this can range between 360,000kWh and 388,000kWh of biomass heat per year depending on the size, insulation, age and type of house.

Without this level of input, there are a number of potential issues:

Wet litter

Respiratory Infections (potential could also affect farmer)

Pododermatitis or foot burn

Hock burn

Breast blister

Potentially this can result in poor performance, loss of sales to processor, increased penalties from the factory and potential loss of single farm payments.

Cathal Ellis

CAFRE, Greenmount Campus, Antrim (028 9442 6793)

16th July 2015

Meeting with Stuart Wightman and Seamus Hughes 22/7/15

SW provided introduction

July/Aug – 200 applications – 800 applications (nearly all biomass)

1. Budget - badly overspent

Need to demonstrate

2. State Aid - rate of return

Biomass is the driver and DETI need a mix of technology

Phase 2 consultation (October 2013)

- No closure button

No closure button
Cost Control section
- Budget used as the trigger (as opposed to the rate of return)

How much of the budget used is the trigger
Tiered tariff similar to what there is in GB
SW currently working on report as to what
Speaking to DM at Moy Park

Meeting with Action Renewables

13/14 hours

DETI believe that they will find the money

Regression similar to GB expected

OFGEM hate the GB scheme
Interim target of 4% this year (2015)
10% target will not be met (SW)
Finite number of poultry houses
Commitment to look at biogas side of RHI
- early 2016

Ground Source Heat Pumps will be looked at in 2016
- imported biomass

Concern
Pellet as opposed to woodchip in predominant
Back up in the form of LPG (stipulated by Moy Park)

CAFRE paper

- State Aid approval in 2012

Carbon Trust loans and implications upon

€15,000 threshold
12% RoR (consistent with ROCs)
Technology have reduced in price
State Aid envelope (currently > envelope) due to the hours

Annual payment of £33k

1. Manage budget
2. Reduce State Aid (back in the envelope)

Change in legislation
13/14 hour tier (or KwH)

- appropriate size of boiler is open to debate

TF - 13/14 hours – need more hours for poultry currently pitched at the industry - GB users will switch to LPG is cheaper because LPG is cheaper in GB)

Consultation point?

- DETI will consult on

*Big issue with pitching the tier at 99

140-150 maximum
KwH tier would mean that bigger tariff for longer.

- don't want to oversubscribe

GB –

*.4 (degression

199 on 1300/1400 hours per year – not sufficient

140 on 1300/1400 hours

- leaves NI poultry industry short on this proposal

NI has not had degression in the lead up to 1/10/15

40 new sheds in the pipeline

DETI concern – budget associated with 40 new sheds would be a concern

Onus on DETI to give preliminary certainty - 6.4p per KwH if you finish before deadline

- relatively small no – DETI said it could work

NI restricted to the 3% of the national budget

£25m over 4 years

£14m underspend

1-2 years – no uptake

2/3p per KwH by 2019/2020

Average cost for heat 4.5p/KwH (4p or 5p going forward)
Average out at 5.5p-6p per KwH

199 tier based upon KwH
4-5,000 hours per year
1800-1900 hours for 199KwH boiler

GB – less of heat requirement

Barnet Formula implications

SW concerned about 199

- DECC have reduced popular biomass

200 banding not reduced

Therefore 200 boilers being built

GB – 199 boilers can burn wider feedstocks
199 limit to 13/14 hours
NI pellet price - 5p/KwH
60/70% of poultry applicants are in
12% rate of return - 199kW boiler at 13/14 hours

£7-£8k per year (based upon 4000 hours per year)

Difference between LPG and pellets

199 – 2500 hours per year

1300 hours +
Not a 12% returns = 4% returns
1300 hours +

All come down to evidence

99 - 4000 hours/year

199 - will do that in 2000 hours a year

State Aid analysis - compare with 2010

12% Rate of Return not enough to meet the poultry needs

Hours v KwH

Rate of return v State Aid is the DETI challenge

150kW at 3000 hours

£12/17/22/27m

KwH per year *

- submission is with the Minister awaiting approval

- 199 issue not resolved
- CHP coming in (3.5p - + ROCs payment)

*Poultry litter implications
Burning of poultry litter

Next Steps

1. Policy finalised and published early August
2. KwH or hours at the tier?
3. 150 or 199? Max. (CAFRE paper)
4. SW to speak to DFP on SA
5. Grace Period on numbers i) budget ii) Finite
6. Request for more budget for NI? - GB RHI not performing as well as NI
   3% of population in NI compared to GB
   UK target of 12% RH
   NI target 10%
   - NI fighting above its weight

   £12m allocation in 15/16
   + £23/£25m going forward.

Meeting with Stuart Wightman and Seamus Hughes 22/7/15

SW provided introduction

July/Aug – 200 applications → 800 applications (nearly all biomass)

① Budget – badly spent thus

Needs done on whole

② State Aid – rate of return

Biomass is the driver and DETI need a mix of technology

Phase II consultation (October '14)

– no closure option

Cost control section

– budget used as the trigger (as opposed to the rate of return)

How much of the budget is used is the trigger

– tiered tariff similar to GB

SW is working on a report as to what

Spending to DM at Way Park

Meeting with Action Renewables

~~[redacted] Technology code~~

13 kilowatts

DETI believe that they will go the same way

Degression similar to GB is expected

Ofgem have done the GB side.

Interim target of 4% this year (2015)

10% target will not be met (SW)

– finite no of poultry houses

Commitment to look at biogas side of RHI

– early 2016

Ground source heat pumps will be looked at 2016

- import biomass

Concern

Rest ~~tariffs~~ Pellets as opposed to wood chip is predominate

Backup will be form of LPG (stipulated by Moy Park)

CAFRE paper

- State aid appendix 2.12

carbon cost loans and implications upon

€15,000 threshold

12p to RoI (Consistent with ROCs)

Technology have ↓ in price

State Aid envelope (Currently > envelope) due to hours

Annual payment of £334

1) Manage budget

2) < State Aid (Capacity in the envelope)

Changes in legislation

- £/kWh basis (or kWh)

- appropriate size of boiler is open to debate (TF - Difficulties - need more hours to poultry currently piloted at industry - GB users will switch to CPG - because LPG is cheaper in GB)

Consultation point?

- DETI ≠ consultation

* Big issues with pitching tariff at 99

③

140 – 150 max m²?

kWh tier would mean that bigger houses be longer

– don't want to oversubsidise

9B –

8.4 (degression

199 on ~~obtuse~~ 1300/1400 hours per year – not sufficient

140 on 1300/1400 hours

– leaves NI poultry industry reliant on this proposal

NI has not had degression in the lead-up to 1/10/15

40 new sheds in the pipeline

DETI scheme – budget associated with 40 new sheds would be drawn

Once on DETI to SNE preliminary certainty – 6.4p per kWh rate of you

Month before deciding

– relatively small n² – DETI said it could work.

NI ~~entitled~~ entitled to ~~3~~ 3% of the national budget.

£25m over 4 years

Given ~~[redacted]~~ underspend

1/2 years – no uptake

2/3p per kWh by 2019/2020

Average coal heat – 4.5p per kWh (4p or 5p going forward)

– ~~[redacted]~~ at 5.5p – 6p per kWh.

199 Wer based upon kwH ④

4 - 5000 hours per year

1800 - 1900 hours @ 199 kwH

9B - boiler heat requirement

Barnet Bromley implications

SW conversion cost 199

— DECC reduced popular biomass

200 banding not reduced

∴ 200 boilers being built.

9B - 199 boilers can be burn under feed tables

RQ limit 6 13/14 hours

NI pellet price - 5p/kwH

60 - 70% of poultry producers are in

1200 role division - 199 kW boiler at 13/14 hours

£7/£8k per year (based on 4000 hours per year)

Difference between RQ and pellets.

199 - 2500 hours per year

1300 hours + 1300 hours } total 1200 returns = 40% return

COM-00649

(5)

All come down to evidence

99 - 4000 hours / year

1999 - will do that in 200 hours a year

State Aid analysis - compare with 2010.

12 RoR not enough to meet the poultry needs

Hours v kwH

Rate of return v State Aid is the main challenge

150 kw at 3000 hours £12 / 14 / 22 / 27m

kwh per year

Hours have to ↑ (TF)

5% would meet forecasted spend.

- submission with ETI Minister

• 199 issue to be resolved

• CHP commission (3.5p - + ROCs) & poultry litter implications payment

Burns of poultry litter

(6) Reconvert for the budget for NI

- 9B total payments as well as NI

3% pop in NI compared to 9B

UK target of 12% RH

NI target 10%

- NI hitting above it's weight

£12m allocation 15/16

+ £23 / £25m going forward

Next steps

(1) Policy finalised and published early Aug NI

(2) kwh & hours at the hour?

(3) 199 or 200? NAO. (CLARE paper)

(4) SW speak to DFP next week on SA

(5) Grace period (i) budget on numbers (ii) finite