

From: [Connolly, Samuel](#)
To: ["Iain Morrow"](#)
Cc: [Hutchinson, Peter](#)
Subject: RE: Our conversation on gas distribution charges
Date: 15 March 2011 10:07:00
Attachments: [RHI gas & oil displacement.xls](#)

Iain,

I'm not sure why you would assume that only gas customers would be displaced. Were we not thinking about apportioning this in line with the current/future market share of oil/gas? It is important to remember that a significant number of oil customers will never have access to gas and therefore any renewables incentive will displace oil as well as gas. Furthermore, the distribution companies' build profiles will mean that some customers who may have access to gas in the long term, may not have it over the short - medium term, hence why I think it would be appropriate to use penetration rates being forecast by the companies. (see attached a spreadsheet which attempts to explain this - I recognise that there may be a case for sensitivity analysis depending on the relative financial incentives of converting from oil to gas)

Indeed, I'd be interested to understand the relative cost difference between oil and gas, especially in the context of a gas tariff review that is about to be announced that may increase gas prices significantly.

Furthermore, I would favour a bottom up approach to determining the profile of renewable heat growth i.e. from the funding available, work out how this is likely to translate into installations/kwh of heat over time.

Hope I've understood and this makes sense!

sam

Samuel Connolly

Strategic Planning & Economics
Department of Enterprise, Trade & Investment
Netherleigh
Massey Avenue
Belfast, BT4 2JP
Tel: 028 9052 9287 (ext: 29287)
Textphone: 028 9052 9304
Web: www.detini.gov.uk

Please consider the environment - do you really need to print this e-mail?

From: Iain Morrow [<mailto:Iain.Morrow@cepa.co.uk>]
Sent: 11 March 2011 17:29
To: Connolly, Samuel
Subject: RE: Our conversation on gas distribution charges

Sam

If we take your suggested assumption, that each renewable heat installation is assumed to replace gas or oil in proportion to the market share of those technologies, then by 2020, won't approximately 10% of gas have been displaced, if we assume that renewables account for 10% of heating demand by that point? There will be some second order effects because some

customers who switch from oil to renewables might have switched to gas in future if renewables hadn't been available, but this can probably be ignored. You are already over-estimating the number of gas customers who will switch, since oil is more expensive than gas, oil customers will switch to renewables at a lower level of subsidy, so I'd argue that the second order effect of removing potential future customers doesn't matter.

The other thing you need is the profile of renewable heat growth. The reality is that things take time to get started, and so there is likely to be slow growth initially with higher growth as we approach 2020 (see for example the GB profile for renewable electricity deployment). So, if we assume straight line growth of 1 percentage point per year, we would be overestimating the speed of deployment and so again overestimating the impact on gas.

This would give the following profile for gas demand relative to current projections:

2011 99%
2012 98%
2013 97%
...
2019 91%
2020 90%

Is this enough for your colleague to use for an initial analysis (I guess he probably already has the figures on future gas penetration), and to give a view as to whether the impact is material? We should have more accurate numbers on displacement next week, which I expect will be significantly lower than this 10% straight-line profile.

Let me know if this seems ok. Happy to discuss on Monday.

Have a good weekend.

Regards

Iain

From: Connolly, Samuel [<mailto:Samuel.Connolly@detini.gov.uk>]
Sent: 10 March 2011 16:06
To: Iain Morrow
Subject: RE: Our conversation on gas distribution charges

I don't have access and it's not publicly available.

I had an initial conversation with a former colleague and he suggested that they would be amenable to carrying out the analysis (although he would need managerial approval)

I don't have the split at hand, however might there be information in our previous heat study? Also, if you need e.g. future penetration rates etc for gas, hopefully the regulator will release this.

Sam

Samuel Connolly

Strategic Planning & Economics
Department of Enterprise, Trade & Investment
Netherleigh
Massey Avenue
Belfast, BT4 2JP
Tel: 028 9052 9287 (ext: 29287)
Textphone: 028 9052 9304
Web: www.detini.gov.uk

Please consider the environment - do you really need to print this e-mail?

From: Iain Morrow [<mailto:Iain.Morrow@cepa.co.uk>]
Sent: 10 March 2011 15:57
To: Connolly, Samuel
Subject: RE: Our conversation on gas distribution charges

Sam

OK that's good to hear. Do you have access to the regulators' model? Is it public?

As you say, the main thing is the number of displaced gas connections/ volume. Would you have figures on the gas/ oil split by sector to hand? I can ask one of our team to do some digging if not.

Regards

Iain

From: Connolly, Samuel [<mailto:Samuel.Connolly@detini.gov.uk>]
Sent: Thu 10/03/2011 15:55
To: Iain Morrow
Subject: RE: Our conversation on gas distribution charges

Iain,

My initial thoughts that this is the logical way to look at this.

However, i think that a more accurate way might be to firstly ascertain the potentially displaced gas connections/volumes and feed this into the regulators model to ascertain an accurate impact on D charges.

I'll continue to think about this and if you wish to discuss further, I'll be available on Monday.

Regards
Sam

Samuel Connolly

Strategic Planning & Economics
Department of Enterprise, Trade & Investment
Netherleigh
Massey Avenue
Belfast, BT4 2JP
Tel: 028 9052 9287 (ext: 29287)

Textphone: 028 9052 9304

Web: www.detini.gov.uk

Please consider the environment - do you really need to print this e-mail?

From: Iain Morrow [<mailto:Iain.Morrow@cepa.co.uk>]
Sent: 10 March 2011 13:54
To: Connolly, Samuel
Subject: RE: Our conversation on gas distribution charges

thanks Sam. In trying to get my head around this, I've put together the attached simple spreadsheet (with dummy numbers). Is the impact figure at the bottom the impact you are worried about, and do you agree with the calculations?

Iain

From: Connolly, Samuel [<mailto:Samuel.Connolly@detini.gov.uk>]
Sent: Thu 03/03/2011 16:27
To: Iain Morrow
Cc: Hutchinson, Peter; Paget Fulcher; Clydesdale, Alison
Subject: RE: Our conversation on gas distribution charges

Iain,

The point I was trying to make with 3c is that even though we may displace gas volumes e.g. in 2014, the cumulative impact of this on D charges will be felt up to 2035/2046 depending on the licenced area. Therefore even though our cut off point is 2020, the impact on D charges/the gas industry will have to be calculated to include this remaining period.

Hope this makes sense!

Sam

Samuel Connolly

Strategic Planning & Economics
Department of Enterprise, Trade & Investment
Netherleigh
Massey Avenue
Belfast, BT4 2JP
Tel: 028 9052 9287 (ext: 29287)
Textphone: 028 9052 9304
Web: www.detini.gov.uk

Please consider the environment - do you really need to print this e-mail?

From: Iain Morrow [<mailto:Iain.Morrow@cepa.co.uk>]
Sent: 03 March 2011 16:21
To: Connolly, Samuel
Cc: Hutchinson, Peter; Paget Fulcher; Clydesdale, Alison
Subject: RE: Our conversation on gas distribution charges

Sam

OK thanks. My replies to yours below.

Iain

From: Connolly, Samuel [<mailto:Samuel.Connolly@detini.gov.uk>]
Sent: 03 March 2011 16:06
To: Iain Morrow
Cc: Hutchinson, Peter; Paget Fulcher; Clydesdale, Alison
Subject: RE: Our conversation on gas distribution charges

Iain,

See below comments on the issues we discussed previously.

Happy to provide more detail if necessary.

Regards
Sam

Samuel Connolly

Strategic Planning & Economics
Department of Enterprise, Trade & Investment
Netherleigh
Massey Avenue
Belfast, BT4 2JP
Tel: 028 9052 9287 (ext: 29287)
Textphone: 028 9052 9304
Web: www.detini.gov.uk

Please consider the environment - do you really need to print this e-mail?

From: Iain Morrow [<mailto:Iain.Morrow@cepa.co.uk>]
Sent: 02 March 2011 10:05
To: Connolly, Samuel
Cc: Hutchinson, Peter; Paget Fulcher
Subject: Our conversation on gas distribution charges

Sam

Thanks for the useful discussion yesterday. As promised, here is my understanding of what we discussed, and what it means for the project. Let me know if this is ok (or not!).

1. The most important thing is to get an idea of the materiality of the impact of renewable heat on the gas network. The impact will be different in the two scenarios outlined in Peter's note (one with £25m funding, one with additional funding). [Agreed](#)
2. We should make "worst case" assumptions in our assessment of the materiality, on the basis that if the impact isn't material in that case, it shouldn't be material in any other.

Agreed

3. There are various ways we could do this, but one way would be to look at what the funding delivers (in terms of number of renewable heat installations) and see what level of gas that might displace. There are three assumptions you need to make to do this:
 - a. What's the level of funding in scenario 2? My suggestion here would be that we assume that the funding is sufficient to achieve the 10% target for 2020, since for gas that is in some sense the "worst case". **Agreed**
 - b. How many installations do you get for your money? My suggestion here would be that we assume the most efficient use of the money – focused on the technologies that need the least subsidy – since this gives us the most installations and so shows the highest impact. **Agree that this would provide the worst case scenario when examining the impact on the gas market, however we still wish to consider incentivising a range of technologies as a matter of policy. [Iain Morrow]** We'll certainly examine incentives for a range of technologies as part of our project.
 - c. What does renewable heat displace – gas, oil or electric heating? The absolute worst case here is "all gas", but that's not realistic. That said, if DETI's ambition is to have potentially everyone on the gas network, in the long run this is what is being displaced (either you are moving people off gas, or you are reducing the pool of potential future gas customers). The licences run for decades, which suggests we should consider the long run, but then how much impact does a possible displacement in say 2025 have in reality on business plans today? In any case, we are only concerned with targets to 2020. **I think that it would be appropriate to have 2020 as our cut off point, however calculations involving impact on D charges may take account of a longer timescale. (incidentally i checked the gas conveyance licences - firmus timeline is 2035 and Phoenix is 2046 i.e. this is the period over which D charges are calculated) . [Iain Morrow]** I don't think I understand this point. Aren't D charges where any impact would appear?
4. Assumption (c) seems to be the most difficult to come to a clear view on. How about this as a way forward? In conversations with Fred Frazer and the utility regulator, it sounds like there are clear plans for growing the network in areas already served by it, but that questions remain about the economics of extending the transmission network to new areas. So, for our assessment of the impact, we would assume that any renewable heat in urban areas displaces gas, but that any in rural areas does not. **Is this OK?** The reality of this assumption is that it will favour options that show renewable heat concentrated in rural areas. This may be sensible for many reasons (e.g. local air quality issues with biomass in towns, support for the rural economy) but I know it won't help with the desire to have a policy that works for all heat consumers. **Might it be possible for each year, to pro rata displaced volumes based on the current forecast market share of oil & gas? Therefore e.g. in 2013 if gas was assumed to represent 25% of total heating and oil 75% we could assume that if the funding permitted 1000 installations, 250 would displace gas and 750 would displace oil. The impact could then be calculated accordingly? I understand that this would represent a crude assumption, as actual displacement will ultimately depend on the available incentive and to what extent this makes renewables attractive relative to gas. (Furthermore, storage of biomass and smoke free zones are also likely to be an issue). However do you think this could be a way forward? [Iain Morrow]** Seems like a reasonable approach to me, and should err on the side of overestimating the impact given the relative cost of gas and oil.
5. A possible resolution here is biomethane injection into the gas grid. If that takes off, there might be no conflict between extending the gas grid and renewable heat. Risky though to rely on this option, not least because of engineering issues. **I think we would be keen to examine this technology as a potential solution within the overall mix to be examined in the economic appraisal. What timescales are we assuming that this could come in? [Iain**

Morrow] I'll need to ask our engineers – will get back to you.

6. In any case, it seems like the absolute maximum impact on gas prices should be of the order of 10%, since my understanding is that allowed revenues are set by price times volume, so if you move 10% of heating to renewables, volume shouldn't drop by more than 10%, and a price rise of 10% would (roughly) compensate for that. **Would that meet your materiality threshold?** My feeling is that this would not be an insignificant amount. However perhaps the regulator would be better placed to comment - ultimately it will depend on whether it makes gas uncompetitive against oil and hampers the gas distribution companies' ability to develop the network. *[Iain Morrow]* OK. We'll speak to the regulator and get their view.

Iain Morrow

Managing Consultant

Cambridge Economic Policy Associates

Queens House, 55-56 Lincoln's Inn Fields
London, WC2A 3LJ

Tel +44 20 7269 0220 (direct)/ +44 20 7269 0210 (switchboard)
Mobile Personal information redacted by the RHI Inquiry
Fax +44 20 7405 4699
Email iain.morrow@cepa.co.uk
Web www.cepa.co.uk