Transcript ABB1

Interviewer (Ir): Ok so this is interview [redacted]. Ok so the first few questions are just about your company and about yourself so fairly short questions.

Interviewee (Ie): Yeah.

Ir: So just to give a bit of background, and then we'll move on to some questions about policy instruments, like I said.

Ie: OK.

Ir: Ok. Some of this might be going over things that I already know, but just in the interest of keeping all the interviews consistent...

Ie: Sure.

Ir: Ok so first all if you could just briefly describe your job role and your responsibilities.

Ie: OK, erm, well as I say I joined [redacted] almost exactly a year ago, erm, I'm the data centre operations director. As I've mentioned we offer cloud, erm, open-stack cloud services and co-location services for our clients, erm, the key proposition that we have really is that we can offer an end to end solution for customers who may have some applications that are cloud-ready now, and some applications that may run on legacy hardware. Old knackered hardware that needs looking after as well. But the key thing is that we can look after all of that, look after the cloud ready applications now and work with them over time to initially look after their existing hardware, but work with them over time to migrate everything over onto a cloud platform. As I've said it's open stack, erm, it's an open stack platform, so open source software, so it's all vendor neutral. Er, no vendor lock-in issues that you would have with Amazon or Microsoft etc, so, yeah, that's basically what [redacted] proposition is... my role here is on the err, on the data centre side, the er, the physical plant and equipment side, looking after all of the operational management systems, the site engineering systems, so that's the mechanical and electrical plant, the stuff that keeps the data centre running...that is as distinct from the cloud platform, that's not my area at all. So we have a head of cloud services and a networks and technology director as well who look after that side...but my side is the physical M&E plant and infrastructure.

Ir: Ah right, good stuff. Do you have any involvement in winning customers and that kind of work or...?

Ie: Yep...yeah obviously we have to sell the facility and the range of services that we provide, so yeah customers who come in to have a look around for a tour of the facility before they make a decision, you know, we have to explain to them what we have, how it works what our plans are. Also being a new start up we are at an early stage of demonstrating, you know, operational maturity in the sense of, erm, management system standards and so on, so we're working very hard to implement those in fact with, we're working on implementation of ISO27001 at the moment which is information security management which is a big thing that a lot of customers require commercially, so we're working on that, and we'll follow through over the course of next year with some other ISOs which have become sort of best practice in data centres so 9001, ohas18001 for health and safety, ISO 14001 and er, ISO 50001 for energy, energy management, yeah so...but I mean customers want to know about what are plans are as well as what we have physically in.

Ir: Yeah. Ok.

Ie: OK.

Ir: Yep that covered a lot of ground that's good. Yeah...so which team within the company is responsible for the electricity bill, is it something that kinda comes down to a specific team.

Ie: Well...that would be me.

Ir: It comes down to you.

Ie: Yeah.

Ir: Ok. And do you pass on the bill to the customer in a direct-ish way or...

Ie: Erm, yeah well, I mean, there's a range of contracts, some would be inclusive of power up to a specific limit, and some we charge for consumption, and that's fairly standard in co-location. It's err, I mean normally when a client contracts with you, obviously we need to allocate our resources, our power and cooling availability so we need to say to that customer OK, your contract is for x kilowatts and you can consume up to that, and you will also pay for the consumption, now that could be included in the contract, or we could bill that, bill them separately for power consumption.

Ir: Yep...OK.

Ie: The cloud platform, erm, is, erm, we work very closely with the guys in the dev ops team in terms of the best practice around the containment and the blanking panels all of those sorts of things we do that, work with those guys quite closely, so we don't have a distinct...I mean you often hear the issues around...there's facilities and there's IT and they don't talk to each other, it's not like that at all, there's a lot of communication.

Ir: Yeah OK. We'll probably come back to that at some point, yeah, it's an important point. Erm, OK so we've done this. Erm, could you give me an indication of the size of the data centre in terms of square footage or power consumption.

Ie: Err, yep, it's, well we have 2 computer rooms, the first one is 1400m2 and the smaller one is 440m2.

Ir: Ok. And the power consumption.

Ie: Erm, our, average load at the moment for the full facility including the offices is about 125kW I think.

Ir: Ok. Good good. Erm, you said you were a fairly new start up but how long have you been in these...

Ie: Erm, I think the company was first incorporated in 2012, but erm, practically started in early 2013.

Ir: Yep, OK. But the facility pre-exists.

Ie: This is an old [previous building owner] building, erm, [they] had this site since the mid 80s...I think...so yes it's er, and it has been a data centre for the majority of that time.

Ir: Yep, ok, that covers that. Erm, do you have a specific tier classification?

Ie: Erm, we're a tier 3 faciliity, we're not certified but yeah, we are, by any definition tier 3.

Ir: Erm, do you measure PUE at all?

Ie: Yes we do, erm...well I probably shouldn't mention numbers at the moment but I mean we are very lightly loaded, our IT utilisation is very low. We've minimised the overhead as far as we can in terms of minimising the cooling, erm...so, erm, so yes we do monitor PUE, however, there is a much more sophisticated energy monitoring and targeting system that I actually developed at [previous employer] which we will be implementing here, but it's one of those funding dependent projects, so er, I'm hoping to be able to kick that off in the next few months.

Ir: Ah, OK, so going beyond a kind of rough and ready PUE...

Ie: Yeah, well very much so, I mean PUE is...well first of all, I mean I know the Green Grid claim to have invented PUE in 2007, but erm, at [previous employer] we actually implemented it in our operational KPIs in I think June 2004 was the first time we used it there. Erm, it was, in fact it was the exact definition of DCIE, we just used to call it customer load as a percentage of site consumption, so it was the DCE percentage. Erm, but, it's such an obvious metric, I mean, I should imagine that quite a few other people came up with the use of it. Cos going back to that time, the early 2000s, there wasn't really erm, I mean, you can quote a PUE number and everybody knows what that means I've got x IT load and overhead is whatever. Going back to those days, nobody really knew any of that. There was a general consensus that cooling energy consumption would be about a third of the...required for the IT, and the total would be somehow the other 2 added together. Erm, but, in terms of erm, certainly when it comes to things like doing due diligence of data centres, erm, which is something else I did quite a lot for the acquisitions at [previous employer] was the technical due diligence. You can very quickly get a sense in terms of what plant and equipment they've got, how well utilised it is. You can easily tell if you're looking at a 1.6 or a 2 or a 2.5 or whatever, broad brush, and you know what the IT load is therefore you know what the estimated total energy consumptions are, and you know, does that tally with the available contracted power supply and all those other things, and the transformer capacity and generators and everything else. So there's a whole range of other things that, er, that a PUE ratio is very useful for giving you, other than just the straight forward efficiency ratio. Of course the down side of it is that it is utilisation dependent, and it's weather dependent. So, and annualising the PUE can...well in principal it's supposed to normalise for the weather, but not all years are the same...but the key thing is the IT load changes all the time anyway. So what you really need to do is an assessment of what the energy consumption is when it’s normalised for both of those variables, and that’s kind of what the monitoring and targeting system that I was talking about…that will do that…so it knows, given the plant and equipment that you’ve got, and your environment that you operate in…for any given IT load and any given weather condition, it will know what the total site’s energy consumption should be. And therefore by tracking what that should be against what you’re actually consuming, tells you where you are in terms of whether you’re performing as you should or not. And obviously if you implement an energy efficiency measure, then you expect that consumption to be lower than what was previously expected because you’ve fundamentally changed the operation operating parameters of the overall site and how it works. So there are various energy management tools that you can look at that track that over time through…erm the actual versus expected energy consumption as I’ve said and the deviance plots against that and the cumulative sum of the deviance…deviations which are a fairly normal…well, a fairly well known energy monitoring and targeting set of terminology.

Ir: Yeah.

Ie: So…but anyway yeah, to answer your original question, yes we do measure PUE.

Ir: Yeah. Good stuff. Right, I think that’s kind of…yeah…so that’s all the sort of first chunk of it, about yourselves if you like. So yeah, I’m gonna ask you a few questions now about the code of conduct specifically. So…You said you are participants of the code of conduct…

Ie: Yeah we are, since February this year.

Ir: Since February this year. Ok. Erm, could you explain a little bit about what your reasons were for applying for the Code of Conduct.

Ie: Yeah, erm, it’s partly to do with, I mentioned about demonstrating maturity in management systems, so it’s part of that…

Ir: Demonstrating it to your customers?

Ie: Yeah, yeah. I mean some customers do ask…certainly public sector companies often ask as a requirement, are you Code of Conduct participant. So yes. Plus it’s…the, well, there’s lots of different views about the code of conduct itself, and the way it’s administered, which is…it generally has a poor reputation in terms of the way it’s administered. But, going back to the time in [redacted] we were an early adopter of the code of conduct, I mean it was launched in November 2008 and we jumped on it straight away…and committed to getting all of the data centres certified as participants and endorsers by the end of 2009, which I subsequently did. We fully expected every…the rest of the industry to be right behind us and jump on the bandwagon as well, but we got through that process and looked round and…I think probably about 2 thirds of all of the data centres that were certified were ours, at the end of that er, 2009, so nobody else was really adopting it. In fact now I think there’s probably something like 150 organisations, 120, 150 organisations that are certified as participants, I mean they’re all on the website, assuming the website’s up to date – I haven’t checked. I haven’t even checked if we’re on it actually. But there’s the…so actually, so going back to the, the best practices themselves, they were…I think they have a very high reputation in terms of they’re all common sense things, they’re all common sense tools that you would use to improve energy efficiency within a data centre, they’re all…it’s all, you know, a lot of work had gone into the original development and the continual maintenance and improving of the best practices over time. Erm, so…so in terms of common sense behaviours that you should be adopting and technologies that you should be following and approaches that you should take, they’re all very good quality. The down side is the way that the scheme is administered with…it’s totally under resourced at the JRC within the EU that run it, I mean there’s basically [redacted] who’s more or less a 1 man band with a couple of volunteers…he’s got a couple of volunteers, [redacted], those guys help him…but er, it’s very poor and people are always complain…it takes months and months and months to, from a submission to get feedback on the submission and then get certified. And it doesn’t really add any value, and it’s all self-certification as well.

Ir: Doesn’t add any value to…

Ie: Well, the fact that you’re named as a participant doesn’t add that much value. The problem being that…OK it’s good common sense stuff, and you might generally follow it and…there’s lots of the industry do follow the best practices to some extent or another, but, just to have your name on a list to say that you’ve sent a list to say that you’ve sent a list of quite overly bureaucratic documentation in to get registered and approved…and some data…and then you get a letter back saying yes we’ve accepted you as a participant, as long as you’ve satisfied the requirements and answered any questions. And have a plausible plan about how you’re going to implement the best practices that you haven’t implemented. You get onto a list and it gets publicised and you get to say you’re an EU Code of Conduct participant. But that doesn’t really help from the point of view of continual improvement. I mean what any management system should be all about is continual improvement so you take a set of tools and best practice, and you work with those within a management framework to continually review where you are and set plans and objectives, achieve those, work through and achieve those plans and objectives, and then you benefit from the results that you gain from that, and then you review it, and then you go through that continual improvement cycle. So what we did in [redacted] is we incorporated the code of conduct best practices within the ISO 14001 framework because…well 14001 is all about what identifying what your environmental impacts are, and then implementing systems to manage them. In data centres pretty much the environmental impacts, there’s waste packaging, predominantly, there’s some handling and storage of hazardous materials…not much. And then the big environmental consideration is energy management…energy consumption. So we used the code of conduct best practices within that framework to drive continual improvement, so you’re setting annual targets. And this is completely outside of the administration of the Code of Conduct, it’s just using those best practice tools as a means for generating the savings that you’re trying to generate. Erm, and we used the structure of the code to er, to internally audit the sites against those best practices and come up with improvement actions, and then manage those improvement actions through to completion. Some of those take years to achieve, erm, for example, erm, you might be in a legacy data centre that sort of 2000 vintage, that didn’t have cold aisle arrangement, hot and cold aisle arrangement, it may all have been designed with the assumption that the air comes up through the floor to the bottom of the rack and out the top, so all the racks are front to back, front to back. So you need to implement a plan to re-organise that, which will take several years, cos you might be dealing with customers who have to wait til the end of the contract and then you turn them round, or you re-design different parts of the data centre and migrate people over to it and that sort of thing, but that takes years to achieve. So…but as long as you’ve got a long term view for those things and there’s also the quick wins that you’ll implement…always the quick wins are around airflow management, generally, so…identify and surveying and fixing leaks, er, putting blanking panels in. In fact in [redacted] in the early days…this is going back to 2010 I think…a lot of people in co-location were saying that you can’t…it’s not really cost-effective to implement blanking panels, because you’d be dealing with individual customers and negotiating with them and everything to try and get agreement and get them to pay for it and, if they pay for it what’s the benefit to them. But in [redacted] we just, well that’s never gonna happen, so we just, we went through a process looking at all the available options on the market, getting all of our countries to agree with a type, and then we negotiated with a supplier in the states, and spent…I think it was getting on for $200000 on…er blanking panels, to basically put them in every rack in every facility, to deploy those. And nobody else was doing that cos…and we just did it straight away. And it, you know, it paid big dividends. Er…another problem with that sort of initiative is that you can improve airflow, but in itself it doesn’t save anything, it just facilitates the doing of other things that save a lot of energy…so all of those, so…it was quite a hard sell at the time to get…to get $200000 of investment for something that isn’t actually gonna save you anything on its own. It’s all about having the confidence within the company that we’ll do that and that’ll enable to do this this and this. So we did all of that, erm…I think I’m drifting off the point…

Ir: Well, no…

Ie: About the code of conduct, but erm, well subsequently, we then implemented ISO50001. Whilst I was there I implemented it in the UK, France and Ireland. And since then it’s been rolled out to the Netherlands…not sure where they’re up to in Germany, they’re doing Germany as well now. But the intention is to roll that out group-wide as well. But that’s using exactly the same management framework, with a few extra bits of discipline that 50001 requires. But it’s basically using the Code of Conduct mechanism to deliver those savings as well so…so to answer your question about the code of conduct, yes, very very valuable set of best practices…but the part, whether you’re a participant or not always comes in for a lot of bad press. There’s a lot of criticism about the administration of it. There are moves now to, erm…are you familiar with the, the new ISO for data centres?

Ir: Erm, vaguely, yeah.

Ie: 50600? As part of that, there’s a move to develop a Cenelec technical report which is a slightly re-written version of the code of conduct best practices. More in terms of standard speak. And the intention is that there will be a Cenelec document which will be a sub-part of ISO50600. Erm…so it’ll be distinct, but the intention is you can use it as an audit regime, so it’s all about making it usable in an audit regime. Cos it’s all about assessing where a data centre is against a set of best practices and coming up with and then implementing improvement…opportunities.

Ir: So do you think that the code of conduct could be more effective if it had more of a system of, erm, trying to encourage continual improvement and development, and this kind of thing?

Ie: Erm…

Ir: Granted it’s hard to imagine doing that with such a kind of skeleton staff they’ve got at present…

Ie: Yes, it would be. I mean various organisations have come into the mix to address it. And there’s CEEDA if you’re familiar with that it’s, which is err…there’s a body…it’s kinda related to data centre dynamics I think. But they’ve come up with a…well it’s basically more or less what a said, so they’ll go into a site, they’ll audit you against it, they’ll come up with actions, improvement actions. And they’ll award you a bronze, silver, gold, or I think platinum, depending on where you’re up to in terms of implementation. But that is phenomenally expensive. But they were always trying to sell it to me at [previous employer] but it was…I mean all of the management system stuff we were doing it all internally anyway. But their view is, or their proposition is to externalise it, and they can go in effectively as consultants, to advise and implement action plans. And then basically award a grading based on your level of system maturity and where you’re up to against erm, against the implementation of those practices. So they were seeking to address it…that issue of the lack of continual improvement. But the code itself doesn’t really do that. Erm…what you’re supposed to do is each year, each participant is supposed to send in their total site load and total IT load consumption for PUE measuring. Erm, not many do that. Erm, probably about half of the participants actually send in the data. And originally the…when you applied and got approved, that was valid for 3 years, and at the end of the 3 years they would assess you against…have you implemented what you said you were going to implement 3 years ago. But because of the lack of manpower that’s never happened. So…so there is no…effectively once you get accepted as a participant now, and in theory as long as you keep supplying the data…

Ir: You can forget about it…

Ie: Well pretty much, and I’m sure a lot of companies do. I mean it depends what they’re motivation was for doing it. Was it purely to just be able to say yes, I’m a code of conduct participant, or was it genuinely to save energy? I mean…so…

Ir: I think you maybe…I wasn’t entirely clear what your reasons were for applying, you said that you expected that lots of data centres would, so was it the case that you thought

Ie: Originally…are you talking about now or…

Ir: With [redacted], erm well, I suppose both…

Ie: Well going back to the start of the process in 2009, there was a lot of publicity around it…that’s really when data centres started to come under the environmental spotlight, cos nobody really even considered data centres as environmental…as an environmental issue at all up until that time. And it was all really…it really all came out of the EU’s work where they were trying to identify how they could meet their 2020 objectives for reducing overall CO2 emissions. And at that time, nobody had looked at data centres holistically and said, actually they consume lots of energy. Because they were spread across multiple sectors, IT and banking and finance and retail. They all had data centres, but nobody was looking at data centres as an entity. So it really all kind of came from that realisation that actually this stuff consumes something between 2, 3 and 5% or whatever it is, of total EU energy consumption, and it was growing at 12% a year, or whatever. They decided they’d better do something about it, and that’s really where the initiative…it was borne out of that really. So that’s where it came from and that’s really when people started to get a sense of, data centres are actually quite a significant environmental issue that would attract some focus. So there was quite a lot of publicity around it at the time, and data centres that were trying to be environmentally responsible…partly because investors would want to…investors wanted to see that as well. It’s also recognised that it’s a very big cost so, investors also want to see that you’re managing your resources effectively. And certainly at [redacted] erm…over the last few years energy has become by far and away the biggest cost, out of all the main costs. So it’s all investor, and general publicity in the industry that, that kind of supported the initial thrust for doing it. Erm, and why it didn’t really follow through with lots of other people going through it, I’m not really entirely sure. I mean there was a lot of work involved in it. It was quite hard work.

Ir: In terms of the administrative side of it or changes that you had to make to the way you were already doing things or…?

Ie: Well both, I mean I was doing it on my own at the time. Well actually probably half way through I did get one of my team…one of my team got involved in it. So we had, I don’t know, 25 data centres at the time across Europe…So you have…And for us it wasn’t just a paper exercise, to fill in a load of paperwork and pretended we were…we generally wanted to use it as a tool to save energy. Because we were under a lot of pressure at the time to save costs.

Ir: Did you feel…did it help you to save energy do you think…

Ie: Oh yeah, it did…

Ir: …or was it mostly stuff you were already doing?

Ie: Absolutely. But not so much the being participant, but when I went through the process, I set up the management systems that subsequently became part of the ISO 14001 process. And it was that continual annual auditing and setting of actions and objectives. It was that that helped us. And yeah, absolutely, we…I think the PUE went from…hmm actually I may have the numbers here, I think it was 2 something…[retrieves figures]…I was looking at this the other day, so I know it’s here…Yeah so this was err…This was our UK performance, 2009-2013, just represented as a 1 mega watt data centre. But yeah, 2.14 was where it was and 1.762 is where it got to.

Ir: OK, so it had quite a big effect on

Ie: Yeah, well, and that’s per mega watt of IT load. And that was saying that the er, the annual saving is 333000 euros. Multiply that out by how many megawatts you’ve got and those are very, very big numbers saving. And that’s all because we followed best practices. All doing those efficiency improvements.

Ir: Do you have much of a feeling for why more data centres haven’t joined the code? Do you think it’s because of the administrative burden, or the technical changes they have to make, or…

Ie: Erm, I think over time, people have…and there’s been a lot of press, a lot of bad press about the administration, the poor administration, so a lot of people have said, you know, what’s the point. Erm…there’s…There are…[redacted]?

Ir: Err yeah, I’ve definitely read bits and bobs on their website…

Ie: Yeah, so…one of the big issues facing data centres is mis-placed energy legislation, both in the UK and stuff that comes from Europe. So [redacted], one of the big things they do is focus on trying to educate and work with government to er…to make the process for setting of policy and legislation more sensible, and also to try and influence European government as well. Although that’s more difficult cos they’re only in the UK. But there are other similar organisations in other countries and there is a kind of a…it’s not an umbrella organisation, but it could be, called digital Europe, which is very well connected into the politicians in Brussels. So I mean there are various routes through the discussion. Erm…but yeah, erm…I’m trying to remember what the point was. Oh yes it was about the code of conduct. It’s generally recognised that the code of conduct, in terms of its intellectual property is a great set of tools and best practices, and it is the best thing that the industry holistically can implement. But they’re also afraid of the…getting that initiative dragged down by poor administration, which makes the whole thing fall out of favour and just…the EU legislature deciding just to impose more and more taxes inappropriately across the sector that would be counter-productive. So it’s a bit of a political juggling act where people are trying to maintain the value of the code’s best practices but at the same time make it more real in the sense of how it can actually deliver results, which is almost inevitably taking it away from its present administration into something else. The other thing is it’s only currently available in English, although I think they may have just translated it into French. One of the great things about the Cenelec initiative is that they’ll pay from it to be translated into multiple other languages as well. So that’s really what needs to happen, we need to take the best practices, we need to make them much more usable in terms of an audit framework to be part of a management system, and that to be recognised and…yeah…basically incorporate that into whatever legislation is around, rather than just having the EU sort of levy more and more, dump more and more taxes on us.

Ir: Do you think…obviously the uptake into the code’s not been as high as people like yourself expected. Do you think it’s had an impact on the industry in spite of that, in terms of helping to engage people with best practice and things like that.

Ie: Yeah I mean it’s freely available which is a great thing. And there is lots and lots and lots of evidence that lots of organisations have gone out to the best practices and said yeah, that’s all common sense let’s do that. But they’re not really interested in following through with the participant process. But…well another thing that hurts the validity of the code itself is that the powers that be in the EU will look down on it all and say well actually if this EU code of conduct is such a great initiative, how come there’s only a hundred and whatever participants. Which is another thing that the likes of Tech UK are very interested in countering. Because there’s lots of uptake, it is very popular, and it does genuinely deliver results. But there isn’t any formal recognition of that if the only means of recognition is to look at how many participants there are. So it could all be a very badly missed opportunity, if it’s miss-managed too much. So erm…there are various things like…I forget what the EU directive is, but that’s turned into the ESOS legislation in the UK, I don’t know if you’re familiar with that…erm, Energy Saving Opportunities something or other I think. It’s legislation in the UK which is the implementation of an EU directive. It’s based on larger organisations…40 million in turnover or 250 employees I think, where if you’re over those thresholds, you need to get an energy audit carried out, the minimum requirement’s once every 4 years. And the auditor writes a report which needs to be formally accepted by the board of an organisation and you basically pay to go through a reporting process around that, but it doesn’t really have a lot of teeth, it’s just another bureaucratic exercise. Cos there’s no formal requirement to do anything with those recommendations. The other thing is that the auditors aren’t necessarily data centre experts at all. But what could be done is they could take…if the code of conduct best practices were translated into a Cenelec technical report type document, that could always be used as an audit criteria that could be used by an energy consultant who could genuinely audit a site against those, set of best practices. And that’s really the way it needs to go to make good sense.

Ir: So a similar set of best practices but with better administration and more…more enforced I suppose rather than being an opt in?

Ie: Yeah, I mean if you had the set of best practices as a Cenelec document, that could be used as an audit criteria for almost any purposes, whether it was ESOS in the UK, or whatever the other European equivalents are. Whether it was used internally inside a data centre, somebody that was implementing 50001, or just wanted to do their own thing. You know, without having the formality and the overhead associated with a formal ISO management system…just to have a more basic system that did more common sense things that they could manage their own continual improvement to. It could be used for all of those things. And arguably it is being used by some organisations to do that now, but it doesn’t quite lend itself to do that in its current format.

Ir: OK. I think we’ve covered most of what I wanted to cover on the code of conduct. OK, so I was just gonna ask a few more questions on…I mean we’ve covered some of this already I think, but on what other policies might be effective. You’ve touched slightly on energy tax type solutions, so I just wondered if you had any more thoughts about the, I mean in the UK we’ve got the CCA and things so…

Ie: Erm, yeah I was working quite closely with [redacted] on the implementation of the CCA, and yeah, that’s actually a great initiative because it does genuinely facilitate improving practice, well you have to improve. Of course I mean the main reason for doing it was to counter the CRC…Carbon Reduction Commitment, which was a totally miss managed piece… I don’t know if you know the background to Carbon Reduction Commitment…

Ir: Yeah I know about the policy…

Ie: It was implemented I think in 2010 by the…it was actually not…its inception was not necessarily a bad idea, the whole thing was…it was all about targeting big energy users and identifying them, all of them, and I think initially there were about 2500. The threshold was, was it 6000 mega watt hours a year or something. It equated to an average load of about 580 kilo watts anyway, so lots of data centres were covered by it. Erm, on that threshold. And basically, what they did was, there were some criteria…the first criteria in the first year was purely early action metrics, which was all around are you a Carbon Trust standard bearer? And did you have fully automated metering in place. And if you ticked all of those boxes you were automatically at the top of the, what became a league table from all of the participants from top to bottom, they were all ranked in order. And the idea was that you paid a levy per kilowatt hour, or per tonne of carbon. And… which at [redacted] at the time would have been about 1.2 million pounds I think. And the idea was that the top half of the table that ranked higher in terms of their metrics would receive that back and the bottom half…they would receive it back with a bonus in fact, and the bottom half would receive it back less a penalty. So if you were on the top half of the table, you were actually gonna do well out of it, and at the bottom half of the table it was gonna cost you. So the incentive was to improve your efficiency. The subsequent years were based more around absolute consumption and I think relative year on year consumption. The down side of it is that if you were a good successful business and you were growing you were gonna get penalised. But by the…it never really got that far because then the tory government got in and they effectively said right, we’re going to scrap the recycling payment and it’s just a tax. So everybody paid for their tonnes of carbon, and nobody got any money back, it was purely a tax. It was a really bad thing to do, cos it was never intended to do that, it was never intended to raise additional revenue, it was purely to drive efficiency improvements.

Ir: So you, but you think joining it with something like the CCA makes it more effective, and allows organisations to grow more…

Ie: It does because obviously the whole industry or all the participants within the climate change agreement are required to…I forget what the numbers are in terms of performance improvement, but they’re required to do that, and if they achieve their target, they’re able to get 90% of their electricity CCL back.

Ir: Erm, obviously this is a fairly new scheme for the data centre industry, but other CCAs in other industries have sometimes had criticisms that the targets weren’t necessarily very ambitious…

Ie: Yeah I think that’s something that’s certainly become more…I’ve certainly become more aware of from conversations over the last year or so, post the data centre CCA coming in. And there are people in government who say, actually we should scrap CCAs for exactly that reason, cos they’re all, probably quite a few sectors that don’t really justify having it. And when they were originally accepted it was for other political reasons. So there are some elements in government who are keen to scrap it, but the data centre one I think is actually quite sensibly put together.

Ir: You think it is ambitious enough?

Ie: Erm, yeah I think so. I mean it’s early days yet, I mean it’s only be in for about a year, well just over a year. Erm, one of the other criticisms of policy generally is their not joined up enough, so with the CRC you had a whole reporting regime where you had to account for all of the energy consumption, you had to report it in July, I think it was July, every year. There’ll be something similar for ESOS, there’s a similar one for CCA. There’s also mandatory carbon reporting which was other legislation that was brought in a couple of years ago, which have a different range of criteria for accounting for your energy and for your carbon. And that was a different…so you have completely separate audit…reporting regimes where you have to account for the same energy in multiple ways at multiple times of the year. And the administrative burden in that is quite massive. There’s also…sorry I forgot what your question was I was trying to answer.

Ir: Erm, well my initial question was just if you think the CCA’s ambitious enough basically.

Ie: Erm, I can’t remember what the target is, we’re not actually a participant in it yet. The reason we’re not is because, well 2 reasons. Firstly we don’t have sufficient metering in place yet, which we will have in due course and secondly, our IT load, or the eligible process is to a lower proportion of the total site energy consumption to qualify us for the full inclusion. So it doesn’t make any sense for us to do it at the moment. When our IT load gets to over 70%...well the IT load and the directly associated activity so that’s the cooling and everything else. When it’s at a sufficient magnitude we will. But in order to…we could qualify for the scheme but then we’d have to… in order to assent to the scheme we’d have to have the additional metering in place which we don’t currently have. Which is obviously a cost item which is sort of slightly further down the line given our position as a new start up.

Ir: OK…yeah I think that covers stuff on the CCA. I was only just gonna ask, I don’t know if you’re aware of this but I think it was back in 2009, the US department of energy had a big workshop, where they had 150 odd people from the data centre industry and politicians and stuff, trying to make recommendations for how they might improve energy efficiency in the industry over there. Erm, a lot of their recommendations were around things like subsidised energy audits and subsidised design services and engineering services and things like this. How do you feel about those kind of schemes, do you think they could be useful or…

Ie: Erm, well that’s, that’s an interesting political question in the sense that I wonder who…whether it was a bunch of design consultancies that were there at the time that said yeah, let’s get the government to subsidise our services so we can sell more! Erm…yes and no, I mean overall, there isn’t enough knowledge in the industry to do it properly, which is true, but a short term consultant’s engagement doesn’t necessarily solve that problem. Yes, they’ll come in and can tell you what you need to do, but only in the same way as a set of code of conduct best practices will do the same. They might give you a few useful tools to use…so I’m not saying I think it’s a bad thing, I think it’s probably a good thing, but the real solution is to improve levels of education generally, so that people have a much better understanding of how facilities use energy, and what can be genuinely done over a period of time to continually improve. Cos it’s never just a snap shot, well, we think you need to do this, it’s all about…certainly air management stuff, it’s all about iterations and iterations and iterations of improvements and when you get to certain levels doing other things to facilitate energy savings. So yes, but only part of the solution.

Ir: Ok, good stuff. I think that was all I wanted to ask on the policy instruments kind of stuff.

Ie: By the way the code of conduct did sound very similar. Basically they got together a bunch of experts from the industry, back in, from 2007 to work through and come up with these best practices, so they were a bunch of knowledgeable people in the industry at the time who came up with those so, same sort of thing I guess.

Ir: OK. I mentioned to you before we started the interview a lot of my work is around aisle containment. I was just…to kind of tie in the interviews with the practical work I’ve been doing, I was just gonna ask you a couple of quick questions about aisle containment. Do you have aisle containment installed here?

Ie: We do yeah.

Ir: OK, erm, what were your reasons for…might be quite obvious stuff I suppose but what were your reasons for installing aisle containment?

Ie: Erm, well for maximum energy saving, it’s all about segregating the air masses, you put in all your energy and cost into creating cool air, so you need to get that cool air to the source of what it’s trying to cool in as un-contaminated a way as you possibly can. Er, to get maximum use out of it, and to…well it’s also all about the more efficient you are, doesn’t just save energy, but it means, what for your total kilowatts that you’ve got available in a facility, the more you can actually run IT and the less you have to run overhead with. So yes, it’s just general efficiency.

Ir: Yeah OK. Was it an expensive or difficult process to go to, or were there any difficulty with customers feelings about it or anything like that?

Ie: Erm, no I think because the first racks went on the floor last year, so I mean it was a well understood concept and there was no, there was no argument, we know it’s something we need to do. I mean, we can go out and have a look, and the racks aren’t necessarily all contained at the moment, but that’s partly because there’s some of it we need to do at our own cost. Erm, which we, you know, it’s on the priority list to do. But our IT load is so low at the moment it’s not that much of a problem. But certainly as we deploy more in the facility and everything will be contained. It’s cold aisle containment here, but that’s… I would probably have preferred to do hot aisle containment but we couldn’t really do that because we inherited a data centre that’s configured the way it is, so to do it a different way would have incurred additional initial up front cost which we didn’t have the resources to address but… but I can show you what we’re planning on doing with that so, when we have a look round. Erm… sorry what was the question again?

Ir: Erm, just if there was any difficulties in installing…

Ie: Er, not but going back to [redacted]…yes lots of issue. Legacy, customers, rooms not originally set up for it, low floor to ceiling heights, congested floor voids, erm, hot spots, all kinds of other issues that have to be addressed as well which is…that’s why I say, some of these improvement programs can take years to address, but erm… but yeah I mean it’s, it was all well known yeah.