



Northern Ireland
Assembly

Committee for Finance and Personnel

OFFICIAL REPORT (Hansard)

Renewable Energy in Public Sector Buildings:
Department of Finance and Personnel

28 May 2014

NORTHERN IRELAND ASSEMBLY

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Members present for all or part of the proceedings:

Mr Daithí McKay (Chairperson)
Mr Dominic Bradley (Deputy Chairperson)
Ms Michaela Boyle
Mr Leslie Cree
Mr Paul Girvan
Mr John McCallister
Mr Ian McCrea
Mr Adrian McQuillan
Mr Peter Weir

Witnesses:

Ms Susan Dornan	Department of Finance and Personnel
Mr Jim McCreesh	Department of Finance and Personnel

The Chairperson: I welcome Jim McCreesh, the head of office estates, and Susan Dornan from building standards in the Department of Finance and Personnel (DFP). Jim, I have received information about the papers for this meeting. Committee staff liaised with DFP staff to obtain this briefing paper in time to be included in the packs. It was to be issued on Thursday 22 May but did not arrive. DFP officials informed Committee staff on Wednesday 21 May that the paper had not been cleared and would not be cleared in time for 22 May; rather, it would be cleared on Tuesday 27 May, a day before the Committee meeting. The guidance for interaction between Assembly Committees and Departments sets out the agreed timescale for the provision of papers to Committees as:

"no later than five working days before the briefing."

Therefore, the paper for this session should have been with the Committee office on Tuesday 20 May. The guidance has been agreed by the Executive and the Chairpersons' Liaison Group since March 2011. I am not putting all this on your shoulders, but I am concerned that this has been an ongoing issue between the Department and the Committee. I am worried that the Department is not treating the Committee with the appropriate respect with regard to papers, not only for this session but for others.

Mr Jim McCreesh (Department of Finance and Personnel): All I can do is apologise for the delay. I can assure you that I will take that message back to the Department to ensure that papers are delivered in a timely manner in future.

The Chairperson: When were the papers sent to the Minister for clearance?

Mr McCreesh: I do not have that information with me. Drafts go backwards and forwards.

The Chairperson: So it was cleared by the Minister only on Tuesday?

Mr McCreesh: I believe so, yes.

The Chairperson: Did it sit with him for a week or two weeks?

Mr McCreesh: I do not have that information with me.

The Chairperson: I am concerned, because, in the absence of that information, members may be left to wonder whether the Minister is leaving these papers on his desk for a considerable time and not treating them or this Committee with respect. It would be useful if the Committee could have information as to when officials are providing these papers to the Minister and for how long he is sitting on them. Quite frankly, our message to the Department, not solely to you, is that this is not good enough.

I invite you to make a brief opening statement.

Mr McCreesh: I note that you have a busy agenda, but you seem to be getting through it very quickly. If you are content, I will give a brief summary of the information in the paper that was previously issued to the Committee, after which we will be more than happy to take questions.

I am responsible for the Northern Ireland Civil Service (NICS) office estate. My colleague Susan Dorman has responsibilities for building regulations. We are both from the Department's properties division. DFP's responsibilities for renewable energy in the public sector can be broken down into two main areas: the NICS office estate; and building regulations and the energy performance of buildings directive.

Energy consumption in the NICS office estate equates to around 4% of the total Northern Ireland public sector estate. You will recall that the Department produced a three-year energy efficiency plan for its office estate for 2011-14. This had a target reduction of around 10% over the three-year period and covered three main areas. The first area was the reduction in the estate's footprint, where we estimated that we could make savings of just under 4%. My colleague Brigitte Worth said that the reductions would increase density in the estate, which would bring about an overall reduction in the estate's footprint. The second area is capital investments in energy efficiency, whereby we estimate that we could save about 1%. The third area is behavioural changes in staff occupying the buildings, whereby we estimate that we could save around 5%.

The final energy consumption figures for this period will not be fully analysed until later this year, as they covered up to the end of March 2014. However, on the basis of the performance over the first two years, we would be reasonably confident that the 10% reduction will have been achieved. We are finalising a three-year follow-on plan covering the period 2014-17. The target reduction has yet to be finalised, but it is likely to be in the order of 5% to 7%, which is on top of the 10% that we have saved in the past three years.

Investment in renewable technology is considered only after cost-effective investments in building fabric — ventilation, heating and lighting systems — have been incorporated. To date, our experience with such renewable energy sources as biomass, solar thermal and photovoltaic indicates that such technologies, as currently available, are not particularly suited to an office estate environment because they do not provide cost-effective solutions. The payback period for solar thermal, in particular, is excessive. It is greater than the life of the equipment, and we have also found that there are operational problems with that equipment. Although there have not been any operational issues with photovoltaic, the payback period is also high, and, until there is a significant reduction in the associated capital cost or a significant increase in the associated displaced grid electricity costs, that technology will not be pursued.

DFP will continue to follow progress as renewable technologies develop, and it will assess future installation opportunities to new acquisitions and refurbishments when additional funding is available.

The other technology that we had in our estate was the biomass boilers. That technology is not suited to an office environment. It is best suited to an environment in which there is a 24/7 load. In an office

environment, in which the working day is 8.00 am to 6.00 pm, equipment is switched on and off, and that is not efficient.

The Department is empowered under article 3 of the Building Regulations (Northern Ireland) Order 1979 to make building regulations, and they set the requirements and standards, including the further conservation of power and fuel, that can reasonably be attained for buildings. The recent changes to Part F, in February of this year, encourage without mandating the use of high-energy, alternative energy systems.

That was a brief summary, and I welcome any questions.

The Chairperson: Thank you very much, Jim. How do you respond to the argument that there is inconsistency? DFP made building regulations for the public that encouraged the use of high efficiency, alternative energy systems but has no plans to install renewable technologies in any NICS office estate. The great message from the Department is that renewables need to be integrated and encouraged in building regulations, and there seems to be leadership on that, but it is not doing anything in its own backyard.

Mr McCreesh: A biomass boiler might be more suitable technology in a domestic environment because there is a constant load — there is always somebody in the building. Our experience, because we have a small footprint, is that solar thermal is not cost-effective when one considers how much it costs to install it and how much one gets out of it. That might change over time as the technology changes and the capital costs reduce, but we will not pursue that. The small PV units that you see outside a building are small lights, signs and so on, but we would not introduce them on our estate on a large scale.

The Chairperson: How do we compare with other jurisdictions within these islands? Are they facing the same problems or are these unique to the local market?

Mr McCreesh: I do not have firm information, but from anecdotes that I have heard in discussion with them, they face similar issues, many of which relate to the cost of the equipment. In general, the most cost-effective time to incorporate or consider renewable technologies is when considering a newbuild. A retrofit can be quite expensive. I am thinking of PV panels, for example, which you have to put on to a roof. It may not be just the cost of the PV panels; it is the cost of replacing the roof because it has not been designed to carry the weight of the panels.

The Chairperson: You spoke about newbuild and retrofit. Is there an opportunity in the relocation of the Department of Agriculture and Rural Development (DARD) staff to Ballykelly to retrofit the existing buildings there to showcase what can be done?

Mr McCreesh: Yes. If the DARD proposal goes ahead, the site will be fully investigated for the suitability of PV solar panels and other technologies. Although I said that we are not pursuing this technology, it is not the case that we ignore it. We consider it on a site-by-site basis, but our experience is that we would not want to mislead people into thinking that we will be putting it into all new buildings.

The Chairperson: There is no reference to wind turbines in the rest of the background paper. Is that still being progressed? There is a large wind turbine at Antrim Area Hospital. What return are we getting from that technology? Is it still being rolled out on new capital builds?

Mr McCreesh: We do not have any at the moment. Wind turbines are capital intensive. We do not have any plans to install them in the estate. The one at the Antrim hospital was partly funded through a section of the Department that was funding those types of technologies a number of years ago. The funding on that scheme has ended. Without that funding, I do not think that the project would have gone ahead.

The Chairperson: Are there no opportunities for that technology in wind-intensive parts of the estate? This part of Ireland and, indeed, Scotland have some of the best wind resource in Europe, so should the Department not look at that?

Mr McCreesh: We carried out an analysis of part of our estate. We have buildings throughout Northern Ireland: we own half and lease the other half. A lot of the buildings that we own are

concentrated in the Belfast area. We do not necessarily have office accommodation in the areas that I think you are talking about.

Mr Cree: Thank you for that. I find it a bit incongruous that, on the face of it, we are expounding the virtues of green energy, yet your experience is that it does not pay back within a sufficient time. Do you have figures on the likely payback from your calculations or on what they should be to give a benefit?

Mr McCreesh: For solar thermal, the payback period that we calculated was in the order of 100 years. On the PV, based on the costs, it was about 50 years. I expect those payback periods to decrease as the technology improves. That is why we will keep it under review. The PV has, I think, the most potential. If capital grants were available, the cost to individuals would reduce significantly in a lot of cases.

Mr Cree: What was the payback on photovoltaic?

Mr McCreesh: The photovoltaic payback period was 50 years on our sites.

Mr Cree: You have not mentioned geothermal.

Mr McCreesh: No, I have not. I am not aware that we installed any geothermal. The only three technologies that we have been involved with are solar thermal, PV and biomass. We do consider others, but I do not have figures for them.

Mr Cree: So there is no example.

Mr McCreesh: I am not aware of any geothermal in our estate.

Mr Cree: Everyone else manages to do it in Europe. Hopefully, there is some.

Mr Girvan: The pump, as opposed to using it only for geothermal, can be used for air transfer. I know that some hospitals have now introduced it as part of their scheme. The unit mounted on the roof is heat-to-heat air transfer via a compressor. Is there any way that we can identify whether that is more efficient than the boilers used to heat a lot of hospitals previously?

Mr McCreesh: We look at all options for a newbuild. We do not rule anything out or in. What you are referring to is a retrofit. Currently, we have no plans to retrofit heat pumps, and I have no information here on their payback period, but I can find that out for you and report back. I am sure that we have considered it for some of our buildings.

The Chairperson: What progress have the Executive made on EU targets for reducing carbon emissions from buildings? To what extent can the targets be met by energy-efficiency measures in the Department? Should you be concerned about that?

Mr McCreesh: As I said, our estate represents 4% of the total energy, so it is a small part of the overall contribution. I outlined the areas that we are looking at to reduce our energy. We believe that, if we reduce our energy, we will reduce the amount of carbon that we produce.

The Chairperson: What are the EU targets?

Mr McCreesh: I do not have them to hand for the Executive as a whole. They were set out in the Office of the First Minister and deputy First Minister (OFMDFM) sustainability document.

The Chairperson: Given that the Department is responsible for building regulations, and some might argue that it should set an example, have you been given an indication at Executive-wide level of what targets you should be meeting?

Mr McCreesh: Perhaps I could ask my colleague to give a wee bit more information on building regulations.

Ms Susan Dornan (Department of Finance and Personnel): I will give members an overview on buildings regulations and where we are with part F and CO2 emissions. As you know, Northern Ireland generally remains in parallel with what is happening in England. The changes to part F relate to the conservation of fuel and power. Over the past number of years, there has been a reduction in the CO2 emissions from buildings. In 2006, the figure was about 40%, and there was a further 25% reduction in 2012. That downward ratcheting is continuing, and there will be a continual pressure on buildings and non-dwellings in the coming years.

You may be aware that, in April, England brought in a change to part L. That change is based on its zero carbon homes approach, which means that England's policy is one of changing the fabric energy efficiency of a building — in other words, the longest lasting part of the building is where you will make the most savings. So the first change is to increase the standard of the fabric of your building.

On top of that, there will be a carbon compliance target, which is measured in kilograms of CO2 emissions. The intent is to have an allowable solution because there is recognition that, with the best will in the world, we cannot offset all of a building's carbon emissions. It may not necessarily be the right site or location. It may be a flat in an apartment block. There are lots of reasons why that may not be doable. That change was introduced in England recently. The allowable solution went out to consultation in October 2013 and is still being looked at to see how it would work in practice.

We will introduce a similar change in building regulations in Northern Ireland to that which was brought in recently, in April, in England. It is due to come in probably around October 2015. That will reflect the change that has just been introduced in England. It will be an additional 6% decrease in carbon dioxide emissions for dwellings and, I think, 9% for non-dwellings. Using that route of building regulations, there is a continual tightening down of emissions. Hopefully, there will also be an increase in the energy performance of buildings. Members also need to be aware that the energy performance of buildings directive recast, which was in 2010, has a requirement for buildings to be nearly zero energy. I think that, from 31 December 2018, buildings owned and occupied by the public need to be nearly zero energy. As you can imagine, that is causing considerable debate. It will not be an easy target to reach. We are following a similar line to England, which is going down the zero-carbon route and hopes that its definition of zero carbon will assist in that movement towards nearly zero-energy buildings. That is the broader picture towards 2018-2020.

Mr Girvan: That will be only for new buildings.

Ms Dornan: New buildings and where there has been a major renovation.

Mr Girvan: So, in other words, Departments will decide not to do major renovations; everything will be minor.

Ms Dornan: I do not think that they will have that choice.

As you know, there was a recast of the energy performance of buildings directive. Members here were very helpful to us in January or February when we came and asked for assistance in getting legislation through very quickly. I appreciate your assistance in that matter. We do not know whether we managed to avoid that EU infraction, but we are very hopeful. It is highly likely that the European Commission will bring out another more tightened version of the recast directive. Looking ahead, it will not get any easier, but the Department is certainly mindful of the changes we need to make now to head towards the 2018-2020 target.

Mr Cree: I am intrigued by the two of you: one is saying that it is OK slavishly to follow Europe, which is another issue that we could probably discuss on another day. There has to be a reality check because there is a limit to what can actually be achieved. It is impossible, for example, to have a zero carbon dioxide building. Do you accept that?

Ms Dornan: I accept that England has accepted that. I do not know whether you are aware of the carbon triangle that is talked about.

Mr Cree: Yes, I have seen the theory.

Ms Dornan: The realisation is that you cannot meet zero carbon in a number —

Mr Cree: Do you know one of the main reasons why you cannot do it?

Ms Dornan: Perhaps you would enlighten me.

Mr Cree: People breathe out carbon dioxide.

Ms Dornan: Exactly.

Mr Cree: Unless they come up with a regulation that says, "Look, you have to stop breathing for half an hour a day", there has to be a reality check. This is getting near the Walter Mitty stage now.

Ms Dornan: Perhaps we should not be looking at the carbon dioxide emissions as much as the energy performance of the building.

Mr Cree: Absolutely.

Ms Dornan: If I were a taxpayer, I would be interested in the fabric of whatever new dwelling I might have being as energy efficient as possible.

Mr McQuillan: Do you not pay tax? *[Laughter.]*

Ms Dornan: That is why I would be very interested in the regulations that are coming in.

As a taxpayer, I would be interested in having the fabric of the building being as high as it could be and being cost-effective and feasible. From the research done in England, it appears that the better the energy efficiency of the fabric of the building, the more reasonable the payback period becomes for renewables. I take it that that is part of the reason why that approach is being taken in England. They have done a lot of research and found that, in some cases, the energy efficiency and the CO2 emissions targets were being met by not having such a great fabric to the building but putting in some sort of biomass boiler. The question is this: how long will a biomass boiler last in terms of maintenance, servicing and so forth?

The change towards the triangular approach, which has two separate targets — one for the fabric and one for the total CO2 emissions — will, hopefully, lead to a drive away from that approach so that the actual fabric will be improved. The best part of the building should be there the longest, and then the renewables should become more cost-effective.

The Chairperson: You learn something new every day.

I have one final question: the sustainable development implementation plan 2011-14 has an objective for DFP to:

"produce an Energy Efficiency Action Plan for the Government office estate ... detailing targets for energy efficiency/carbon reduction measures that are achievable within budget during the period 2011-2014."

What progress has been made specifically on that?

Mr McCreesh: That is what I was referring to earlier. We do not yet have the information in for this year, but the information that we have to date indicates that we will achieve our 10% reduction.

The Chairperson: Susan, you referred to the targets for 2018-2020: how confident are you that we will get there?

Ms Dornan: I would be content with our rolling programme if we can make the changes coming in October. That is not just a single change; it is a group of changes to the building regulations and the various guidance documents. It is not focused solely on fuel and conservation of power. If we continue what we are trying to do in parallel with England, we will, undoubtedly, be in a better position to reach the nearly zero-energy buildings target, but there is a lot of controversy about those. The Commission recognises that a lot of work is being done.

There is also a slight issue with the cost-optimal approach, which the new recast directive brought in. Basically, that is the difference between the minimum energy performance of buildings currently set out in the building regulations and the costs over the period of the house, dwelling or whatever it might happen to be, and then looking at how cost-effective that is and where the optimal point is along a cost-effective curve. From my research and background reading, there seems to be a slight disparity there.

We are doing our very best as the Department moves ahead. These will be difficult targets to achieve, but, as I said, I cannot see the Commission moving backwards. I think that it will continue to tighten on the energy performance of buildings because of the emissions and energy that come from there. It is 40% of the energy across all of the different sectors. That is where the focus will be, and we will strive to do our very best to meet those targets.

The Chairperson: You referred to the targets in England and the developments there. In the rest of the European Union, have the likes of Germany already met some of these targets?

Ms Dornan: In some cases, they have. In Denmark, for example, Copenhagen has a district heating system. However, that was done by insisting that all members signed up to the system, so people had no choice. I am not quite sure how that would go down here. I think that there was one district heating system in Lisburn, from what I gather from my research, but I do not know whether it continues to operate.

Mr Cree: There is one in Sheffield, which is a prime example.

Mr Girvan: There used to be one in New Mossley.

Mr Cree: I have one last question. In all of these calculations, we tend to make it an exact science, which I do not believe it is. What credence have you given to global warming in those calculations?

Ms Dornan: I have not done any calculations, so I cannot say. What I can say is that the Department for Communities and Local Government has a research budget. It answers for the member state on the energy performance of buildings directive. It is for it to do the calculations and write the reports. The Zero Carbon Hub website gives a lot of good background information. It helps to inform government in England about zero-carbon homes and may extend that to non-domestic dwellings.

Mr Cree: Do you accept that, if there is global warming, we will not need the same amount of energy to heat our homes? *[Laughter.]*

Ms Dornan: If I could take Northern Ireland and move it to Ecuador, I would be very happy because we would have a higher temperature.

Mr Cree: Then you would need a cooling system.

Ms Dornan: I would recommend a place called Cuenca in Ecuador, which has an altitude of 8,000 feet, a beautiful temperature and blue skies. I highly recommend it.

The Chairperson: Maybe the Committee should take a look at this place. OK, Jim and Susan, thank you both very much.