EXECUTIVE COUNCIL

CONFIDENTIAL

Title of Report: Abattoir Waste Disposal Licence

Paper No: 190/10

Date: 19 August 2010

Report of: Environmental Planning Officer/ Head of Policy

1.0 Purpose

1.1 To consider an application from the Falkland Islands Meat Company Limited (FIMCo) for a licence under Part II of the Food and Environmental Protection Act 1985 (FEPA) in its application to the Falkland Islands under the Environment Protection (Overseas Territories) Order 1988 as amended by the Environment Protection (Overseas Territories) (Amendment) Order 1997 authorising the deposit of animal waste material in the sea from a cliff-face situated on Port Harriet Farm lying south-west of Rodeo Pond.

2.0 Recommendation

2.1 It is recommended that Honourable Members approve:-

a) The issue by the Governor of a licence to FIMCo under Part II of the Food and Environmental Protection Act 1985 in its application to the Falkland Islands authorising the deposit of animal waste material in the sea from a cliff-face situated on Port Harriet Farm lying south-west of Rodeo Pond and from waste pipe(s) connected to the abattoir which discharge into Port Harriet. The Licence to be subject to the conditions set out in Schedule A of this paper.

b) The licence shall expire on 31 August 2015.

3.0 Summary of Financial Implications – none.

4.0 Background

4.1 In February 2010 (paper 49/10) Executive Council approved the issue by the Governor to FIMCo of a licence under Part II of the Food and Environment Protection Act 1985 in its application to the Falkland Islands, for the purpose of depositing animal waste material in the sea from a cliff-face situated on Port Harriet Farm lying south-west of Rodeo Pond. The licence was subject to such

conditions as might be advised by the Environmental Planning Officer, Senior Veterinary Officer and Chief Medical Officer.

4.2 The licence is due to expire on 31 August 2010, within which time it was agreed that a further report be presented to Executive Council, with a view to securing longer term licensing arrangements for this facility.

5.0 Licence considerations

5.1 There are two aspects of the licence to consider:

1) Whether the current waste disposal arrangements are working correctly and are fit for purpose, and

2) Whether the current arrangements are appropriate for the increase in waste that is likely to arise from a successful implementation of FIMCo's Development Plan.

Current waste disposal arrangements

5.2 At present, three waste streams arise from the workings of the abattoir:

1) Specified Risk Material
2) Liquid waste
3) Solid (offal) waste

5.3 There are European Union regulations regarding the control and disposal of SRM. The Veterinary Service, as the competent authority in the Falkland Islands, controls the incineration of some types of SRM and approves the dumping of other types based on previous risk assessment.

5.4 Liquid waste comprises blood and some small solid particles. A gravity pipe takes the liquid and particles to Port Harriet untreated, where it is discharged into marine waters. The presence of kelp beds along the shoreline may limit the dispersal of any discharge as the outfall does not extend beyond these beds. Additionally, unless the discharge is limited to ebb tides, waste may be pushed into the more enclosed part of Port Harriet Creek rather than dispersed into the main body of water.

5.5 The waste pipe does not currently form part of the licence issued to FIMCo under Part II of the Food and Environment Protection Act 1985 for depositing animal waste material in the sea but for completeness should be included.

5.6 The waste pipe has been subject to occasional breakage which has led to waste being deposited on land rather than in the sea due to pipe failures. In the longer term the company intends to install a new larger bore pipe for waste from the lairage (accommodation for animals waiting processing) – which will be separated from the effluent from the plant itself. This should eliminate the current problem with the pipe, which is too small for the volume of waste it is carrying.

5.7 It is recommended that it is should be a condition of the new licence that the waste pipe is regularly inspected and kept in good repair at all times, with any blockages caused by solid material being cleared promptly.

5.8 It is not known whether depositing liquid waste near the head of Port Harriet is having any impact on water quality. The company has previously taken samples from the vicinity of the waste pipe, as well as Stanley Harbour and intends to re-introduce this on an annual basis, commencing this spring. It is recommended that testing the receiving waters annually should be a condition of the new licence. The results will provide a baseline to assess the impact of implementing FIMCo's development plan on water quality in Port Harriet.

5.9 Solid waste is transported to a waste chute adjacent to the Rapier missile launching platforms on the southern shore of Port Harriet Farm. Under the present licence conditions FIMCo is required to ensure that:

1. Any vehicle transporting carcasses or animal waste to the site must be secure and covered, sufficient to prevent any of the waste matter falling, leaking or being scavenged from the vehicle.

   EPO comment: The lorry transporting the animal waste to the site is not covered as required by this condition. In 2008 the previous EPO (Tom Eggeling) inspected the arrangement and noted that the vehicle was not overloaded and that there was no evidence of any solid waste matter falling or being scavenged from the vehicle. On this basis he concluded that no action was required. It is recommended that this condition should be re-drafted to require action on the part of the licensee in the event that waste matter is falling, leaking or being scavenged from the vehicle.

2. The Licensee must ensure that the waste chute and surrounding area are cleared of any waste debris and that any accumulation of waste on the nearby shorelines is regularly cleared and removed.

   EPO comment: The area near the top of the chute is periodically cleaned and waste removed. The company intends to improve the chute by extending its sides and top and undertaking remedial works to parts damaged by reversing vehicles.

   Due to the design and length of the chute, waste can accumulate on rocks below, where it remains until removed by the next high tide or storm surge. While lengthening the chute may result in more waste dropping directly into the sea it is more likely that the structure will be damaged by wave action. The current arrangement, whilst not ideal, is probably the most practical solution to this problem. It may be possible to remove the rock ledges near the sea where the waste collects to allow more material to enter the water.

   There is a gulch located to the west of the chute where a substantial number of bones have accumulated. These have not been removed by the company as required by this condition. It is not possible to remove the bones

mechanically and the location would pose considerable risks to personnel if required to be removed by hand. Photographic evidence dating from 2005 indicates that the amount of bone in the gulch has not noticeably grown despite the increase in production over the past five years.

It is recommended that it be made a condition of the licence that the company be required to implement the improvements to the chute before the commencement of the next export season, and to keep the chute in good repair thereafter. It is further recommended that the requirement to remove waste from the nearby shoreline be replaced with a requirement to review the condition of the gulch and adjacent shoreline on an annual basis. An assessment of the situation (primarily whether the quantity of bone is stable or growing) should determine whether any action is required.

3. The Licensed Area is to be fenced in such a manner as may be required by the Environmental Planning Officer and the Senior Veterinary Officer.

   EPO comment: This has been complied with.

4. The licensed area is to be marked with clear signs warning that unauthorised access to the area is not permitted and warning that shellfish should not be taken from the immediate vicinity of the Licensed Area.

   EPO comment: This has been complied with.

5.10 Two other issues involving the chute that have not been given much consideration to date are the impact of waste on the water quality of the receiving waters and the effect on local wildlife. Although disposal in this location does not pose a direct threat to humans there may be implications for wildlife (e.g. e-coli). The company has agreed to undertake annual monitoring of the water around the chute to establish a baseline of water quality against which any future change can be assessed.

5.11 Southern Giant Petrels are increasingly reliant on the waste chute as a key source of food and the Environmental Planning Department has received reports that they may be in the process of establishing a new breeding colony in the area. This bird is an ACAP species and the recently adopted Falkland Islands plan for their conservation proposes further work to investigate the extent to which they are becoming dependent on the chute for food and whether it is influencing breeding locations.

5.12 It is also possible that marine mammals, fish and crustaceans are also being attracted to the chute as a food source, with unknown consequences. Further research in this area is desirable, possibly through the Shallow Marine Survey Group.

6.0 Future waste disposal arrangements

6.1 The preceding section outlined issues surrounding current waste disposal arrangements. Since the previous licence was approved in 2004 there has been

a significant increase in the throughput of the abattoir and a corresponding 70% increase in the tonnage of waste produced. This is partly due to an increase in lambs processed but also because the business has diversified and is processing an increasing amount of beef (having secured EU accreditation for export in 2008).

6.2 The long term viability of FIMCo is dependent on farmers sending many more animals to the abattoir and over the next 10 years the FIMCo development plan is seeking to secure a further significant increase production as shown in Table 1 below. However, at the same time the company expects there will be a reduction in material disposed per animal in future years as it recovers and exports more of the "waste" from animals.

6.3 Thus although the production of lamb and beef is due to rise significantly in the next 10 years (+346% and +110% respectively), solid waste is expected to increase by just 29%. The main reason for this is that waste from processed animals is forecast to decrease by between 20% and 35% over the next 10 years (Table 3).

Table 1 – FIMCo livestock processed (actual and projected)

	2004 – 05 (original licence issued)	**2009 - 10**	**2019 - 20**	**% increase 09-10 to 19-20**
Lamb	3,000	14,800	66,000	346
Mutton	20,000	22,500	18,500	-18
Beef	30	475	1,000	110

Source: FIMCo

Table 2 – Solid waste (kg)

	2004-05	**2009-10**	**2019 -20**	**% increase 09-10 to 19-20**
Lamb	45,570[1]	217,560[2]	776,160[3]	257
Mutton	546,000[4]	704,250[5]	378,788[6]	-46
Beef	6,630[7]	104,975[8]	166,600[9]	59
Total	598,200	1,026,785	1,321,548	29

Source: FIMCo

[1] Skins sold
[2] Some skins processed
[3] At 11.75kg – allowing for more produce being shipped
[4] Skins sold
[5] No skins saved
[6] At 20.5kg – allowing for more bone-in produce being shipped
[7] No hides saved
[8] No hides saved
[9] At 167kg – allowing for more produce being shipped

Table 3 Average solid waste (kg) per carcass (actual and projected)

	2004-05	2009-10	2019 -20	% change 09-10 to 19-20
Lamb	14.7	14.7	11.75	-20
Mutton	27.3	31.3	20.5	-35
Beef	221	221	167	-25

Source: EPD, based on Tables 1 & 2

6.3 The anticipated reduction in waste generated per animal over the next 10 years is welcomed. While most abattoirs around the world make money out of waste – or at least break even - here it is likely to remain a cost due to the low and variable volumes produced during the year. In addition, nutrients (Nitrogen, Phosphorous and Calcium) continue to be lost from the land and placed in a marine environment where at best the effect is benign and at worse could be harmful through enrichment. Although the overall volume of waste will rise in the next ten years it is unlikely to justify investment to enable some waste to be re-cycled rather than dumped.

7.0 Views of FIMCo

7.1 The General Manager of FIMCo was invited to comment on this report and made the following comments.

7.2 When the Sand Bay plant was established, there was limited consideration given to the type and volume of waste material. A lack of experience also played a major part in the difficulties encountered in the early years, with an over-optimistic view being that the incinerator would cope with the total amount of solid & semi-solid material. In later discussions with the supplier of the incinerator, it became abundantly clear that this could not be achieved, even after upgrading the machine.

7.3 Following detailed investigation of the options, and a successful trial in 2004, it was decided by all parties involved – Environmental Planning Officer, Senior Veterinary Officer, Director Public Works, FIMCo and FIDC – that the option of using Port Harriet, served by a dedicated road which would have access restricted to FIMCo would be the most efficient and cost effective solution for the medium term.

7.4 A number of matters need to be taken into account, in no particular order:

a) Practicality & accessibility
b) Cost of operation
c) Method of transportation
d) Ability of the sea to carry the majority of material away
e) Environmental impact
f) Visual impact
g) Type of material being disposed of

7.5 Not all is ‘waste’, as either lack of processing facilities or market value or marketable volume all effect the type & volume being disposed of – this is changing gradually as the industry develops and the plant facilities are upgraded/completed.

7.6 Cost effectiveness of installing a rendering facility (estimated to require a throughput of at least 100,000 lambs per season be cost effective).

7.7 What used to be a valuable ‘profit margin’ in terms of sales of co-products and by-products in the slaughterhouse industry has these days become an expense to virtually all meat-plants. Much is due to the restrictions and tight regulations affecting the industry following the outbreaks of BSE, Foot & Mouth (FMD) etc. What used to be acceptable in terms of material put back onto the grazing land (paunch contents, blood etc) is no longer permissible.

7.8 Finally, most meat plants in developed countries also have access to an established waste industry for the material it cannot sell, even if this is at a cost. FIMCo has had to work exceptionally hard in trying to find operational and environmentally acceptable solutions, much of the time on its own and when under pressure of keeping the costs as low as possible.

7.9 As the industry develops, more and more of what is currently ‘waste’ will be exported. FIMCo continues to evaluate the material and ways to make cost effective use of this waste, and is in contact with a Danish engineering company to consider whether some of the ongoing waste material can be transformed into a bio-fuel. However, as with rendering, the capital and operational costs are very high and with the small throughput, it is not viable at this time.

8.0 Conclusion

8.1 FIMCo is growing and, should its projections be realised, will become a significant and profitable business contributing to the Islands economy. If its development plan is successful there will be a three-fold increase in lambs processed over the next ten years, with sheep number falling slightly and a steady increase in beef. Although there will be an increase in waste, this should only be about 28% more than is currently produced, due to more of the animal being recovered for export.

8.2 The current disposal arrangement is the most practicable solution to a difficult problem. Subject to some changes to the licensing conditions, the current arrangements are satisfactory given the scale of the operation and the alternatives available. The recommended changes include putting in place a more robust monitoring regime to assess environmental change. Significant adverse change could necessitate changes to licence conditions or the suspension or revocation of the licence.

8.3 The previous licence was for 5 years which, in the absence of a formalised monitoring regime, was probably too long. The proposed introduction of

annual monitoring reviews in the spring by officers from the Environmental Planning Department and Veterinary Service will allow improvements or changes to be made prior to the start of each export season.

8.4 I am accordingly recommending that a further 5 year licence be issued. This should be sufficiently long to assess whether the forecasted reduction is waste per animal is being achieved and for monitoring the effects on water quality. There is already provision for the licence to be amended or revoked in the event that any potential environmental problems are identified by FIG officials.

8.5 As part of the changes the Veterinary Service and the Environmental Planning Officer will be undertaking more frequent inspections of the waste disposal arrangements at the abattoir (specifically the waste outflow pipe and at the waste chute) to ensure compliance with the licence.

9.0 Recommendation

9.1 It is recommended that five year extension to the current licence be issued to FIMCo (a copy of the proposed licence is attached under Schedule A). The scope of the licence should also be expanded to embrace waste discharges into Port Harriet directly from the abattoir.

10. Financial Implications

None

11. Legal Implications

11.1 The effect of Part II of the Food and Environmental Protection Act 1985 (FEPA) in its application to the Falkland Islands under the Environment Protection (Overseas Territories) Order 1988 as amended by the Environment Protection (Overseas Territories) (Amendment) Order 1997 is that the deposit of any materials into the sea requires a licence from the Governor acting on the advice of Executive Council, unless the deposit is exempted. There is no relevant exemption in this case.

11.2 The Governor also has specific powers of revocation and variation under section 8(10) and (11) of the Environmental Protection (Overseas Territories) Order 1988 to vary or revoke if breach of licence condition (ss. 10) and to vary or revoke for environmental reasons, advance in scientific knowledge, or any other good reason (ss. 11).

12. Human Resources Implications

12.1 There will be a need for staff from the Veterinary Section and the Environmental Planning Department to make periodic visits to the waste sites. This should amount to no more than a day or two per annum (and in the case of the Vets may be simply added to current inspections of the abattoir).

Executive Council Paper on Abattoir Waste Disposal

Schedule A

Proposed Conditions to be incorporated into a licence issued under Part II of the Food and Environment Protection Act 1985

This licence covers land in the vicinity of the the waste chute located to the south of Port Harriet Farm and also in the vicinity of the waste pipe from the abattoir into Port Harriet

1. No carcass or animal waste contaminated with a transmissible disease may be dumped in the Waste Chute Licensed Area, which during the meat export season is only to be used for carcasses or animal waste which have been inspected and passed as fit for human consumption by an OVS appointed as such under the Designated Abattoirs (Application of Legislation) Order 1998.

2. Any vehicle transporting carcasses or animal waste to the Waste Chute Licensed Area must be secure and the Licensee must not allow waste matter to fall, leak or be scavenged from the vehicle. Any waste matter which falls or leaks from the vehicle must be cleaned up immediately.

3. The Licensee shall extend the sides and top of the waste chute, seal open tubes and undertake remedial works to repair damaged parts by 30 November 2010, and thereafter keep the chute in a good state of repair.

4. The Licensee must ensure that the top of the waste chute is cleared of any waste debris after each waste load had been sent down the chute.

5. The Waste Chute Licensed Area is to be fenced in such a manner as may be required by the Environmental Planning Officer and the Senior Veterinary Officer.

6. The Waste Chute Licensed Area is to be marked with clear signs warning that unauthorised access to the area is not permitted and warning that shellfish should not be taken from the immediate vicinity of the Licensed Area.

7. The Licensee is responsible for obtaining the consent of the landlord and any tenant of Port Harriet Farm to the disposal of carcasses and animal waste at the Waste Chute Licensed Area.

8. The Licensee shall inspect the waste pipe(s) running from the abattoir to Port Harriet once every two weeks and keep them in good repair. Any blockages caused by solid material shall be removed within 48 hours of discovery.

9. The Licensed Areas will be subject to periodic inspection by the Environmental Planning Officer and the Senior Veterinary Officer. The Licensee is to co-operate with and provide assistance to these officers or any other Government

officer acting on their behalf in relation to any relevant monitoring requirements.

10. Each spring the Licensee shall arrange to have marine water samples collected from near the outflow of the abattoir waste pipe into Port Harriet and near the waste chute and to have them tested for coliforms.

11. Each spring, the Licensee shall meet with officials from the Falkland Islands Veterinary Service and Environmental Planning Department to review waste disposal arrangements. The review shall include transport arrangements, the condition of the abattoir waste pipe(s) and waste chute, the results of water testing required under condition 10 above and an assessment of changes in the appearance of the gulch and adjacent shoreline west of the chute.

12. In the event that any environmental problems are identified by the Environmental Planning Officer or the Senior Veterinary Officer through inspection or monitoring of the Licensed Areas, this Licence may be amended by the Governor (and such amendment may include limiting the quantity of matter dumped in the Licensed Areas).

13. This Licence may be revoked by the Governor if the continuation of waste disposal activities at the Licensed Areas threatens the health and well-being of humans, animals (including marine mammals or farm animals), wild birds or marine life, or threatens serious environmental pollution through the transmission of pathogens by air, ground or water, and such serious environmental risks cannot be mitigated by amending the conditions hereinbefore contained.