Environmental Review

Vrable Pig Production Farm
Vrable Slovakia

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Introduction

The Vrable Pig production farm is an existing pig production and poultry farm, which will be completely renovated for producing 120,000 finishers annually from 30 – 110 kg live weight.

The farm is located in Eastern part of Slovakia with 95 km to the capital Bratislava.

The farm is located on a 12 ha farm site without any crop production.

The Vrable pig production farm and Venky Cetin pig production farm located 10 km away is operated as one production unit together with a 4.100 ha crop farm located 15 km from Vrable farm. The manure from the two pig farms will be applied at the crop farm and utilized as fertilizer.

The project documentation for the pig farm has been prepared, and preparation of detailed design of the pig farm has been launched.

Existing buildings will be renovated. This includes renovation of roof, walls, new floor and equipment. Old manure handling systems inside and outside buildings will be changed during the renovation.

The feed for the pigs will be purchased from a local feed mill, and delivered to feed silos at the pig farm

It should be emphasised that elaboration of this Environmental Review will not be in interference with elaboration of Slovakian environmental assessments (IPPC and EIA) in compliance with Slovakian legislation.

The proposed scope and structure of this report is based on the OECD Updated Recommendations[1] and the Equator Principles[2] in force.

According to OECD recommendations annex 1, the farm is a category A level project, as pig production projects with more than 2,000 pig places or 750 sows are A level projects. This is the justification that Danish financing institutions have requested elaboration of the Environmental Review in accordance with international guidelines.

1. Executive summary

The farm is an existing pig production and poultry farm constructed during the period 1970 – 1980, that will be totally renovated to 33,980 pig places with an annual production of 120,000 finishers from 30 – 110 kg.

[1] OECD Updated Recommendations on Common Approaches on Environment and Officially Supported Export Credits (25 February 2005) http://webdomino1.oecd.org/olis/2005doc.nsf/Linkto/td-ecg(2005)3
[2] Equator Principles http://www.equator-principles.com/principles.shtml

The renovation is planned to start primo 2011, and the farm will then gradually start production. It will take about one year from start of renovation until the farm is in fully renovated and within another 4 to 6 month the farm will be in full operation.

The farm is located on a 12 ha farm site without crop production.

The Vrable pig production farm and Velky Cetin pig production farm located 10 km away is operated as one production unit together with a 4.100 ha crop farm located 15 km from Vrable farm. The manure from the two pig farms will be applied at the crop farm and utilized as fertilizer. The total harmony requirement from the two pig farms is 4.240 ha. Pig manure corresponding to the area requirement of 140 ha has to be disposed on another crop production farm, but it is the assessment that it should not be a problem because the livestock density in the region is quite low.

The farm has made agreement with a Slovakian environmental consulting company for preparation of the detailed design according to Slovakian regulations based on Danish outline design. This company is in the process of preparation of the required Slovakian environmental permits etc. for renovation and operation of the pig farm in compliance with Slovakian legislation. The company EKOCONSULT, from Bratislava, Slovakia has over the years worked for several local and foreign companies with larger animal production (www.ekoconsult.sk).

It is the overall assessment that the farm has the permits and approvals necessary at this stage of project implementation, and that the farm has initiated obtaining the remaining permits and approvals.

The pig farm will be renovated in compliance with Slovakian and Danish environmental and animal welfare regulations.

The manure handling and application of manure on cultivated area will be in compliance with Danish and Slovakian regulations

The farm will prepare a waste management plan for the pig farm

Operation of the farm will not have negative noise impact at village 1.650 km from the pig farm.

According to Danish odour standards there is only very low risk of odour nuisance at the nearest village located 1.65 km from the farm. There are 4 villages around, but all in distance of 1.650 meter to 2.200 meter of the farm.

The foreign management will be one pig production manager. During the renovation period there will also be some technical managers responsible for construction of the farm.

The farm will establish training programs for Slovakian employees, who will gain knowledge and skills in modern pig production methods according to newest management and production systems.

The farm will have a very positive social effect in the area because it creates employment in a rural area with limited alternative employment possibilities in the agricultural sector.

The pig production farm will start construction and operation in 2010 and when the pig farm is in full production the Slovakian employment will be 18 to 20 persons in the production. Additional staff will be needed for maintenance, administration, transport and other services so the total number of Slovakian employees for the entire farm will be 30 to 35 persons. In addition to this the farm will create secondary employment for the local community because the farm will purchase buildings materials and other commodities as well as purchase services such as transport of commodities to and from the farm.

The farm will employ a Slovakian veterinarian, which will report on veterinarian matters to the authorities. The farm will have the required inspection from Slovakian veterinarian authorities.

All employees will be trained in safety and provided with overalls and individual safety outfit.

2. Slovakian Legal framework

The farm has made agreement with EKOCONSULT in Bratislava for obtaining the necessary Slovakian permits and approvals for renovation and operation of the pig farm. This includes the technical building permits based on the Danish outline design and the environmental permits. The farm and EKOCONSULT have launched this work.

The Slovakian authorities have stated that the farm has a valid IPPC (Integrated Pollution Protection Control) permission for finishers covering part of the farm. An EIA (Environmental Impact Assessment) study and revised IPPC permission is requested.

The Slovakian EIA is required before the land using permits can be issued. The IPPC procedures deal with buildings permits, demolishing permits, trial operation permits and permanent operations permits. The duration for obtaining the Slovakian permits are estimated to: EIA 4 months, land using 2 months, IPPC building permits 4 months, IPPC trial 2 months and IPPC permanent operation 3 months.

The EIA and PPPC procedures can be done in parallel, and this means that building renovation can start 6 to 8 months after the procedures were been launched in March 2010.

Part of the approval procedures is that both the Slovakian EIA and IPPC will be published in local media for comments and the EIA will also be published in the Web site of Ministry of Environment.

It is the overall assessment that the farm has the permits and approvals necessary at this stage of project implementation, and that the farm has initiated obtaining the remaining permits and approvals.

It should be emphasised that elaboration of this Environmental Review will not be in interference with elaboration of the Slovakian permits and environmental assessments (IPPC and EIA) which will be in compliance with Slovakian legislation.

4. Project Description

4.1 Baseline situation

The farm is located in an agricultural area with traditional crop production such as cereals and corn production.

The farm is located in a distance of 1.2 km to a cattle farm without living accommodation, but there is only limited livestock production in the area, and therefore there is appropriate distance to other pig production farms.

The farm was build during the period 1970 – 1980. The farm includes 15 pig production buildings and 10 poultry houses used for layers.

The farm needs substantial maintenance. Replacement of roof and insulation is required and the walls need renovation. A total renovation of the production facilities and manure storage is required in order to comply with Slovakian, Danish and international environmental and animal welfare regulations.

All building which once had been used for pigs og poultry will be renovated and used for pig production, administration etc. New buildings will not be constructed.

The old manure handling system with manure channels are outdated and will be reconstructed. The old manure handling systems and lagoons are outdated and will be demolished and new system being built.

The farm was in operation until 2006, and purchased by the present owners in 2008.

The public road system to the farm is suitable for operation of the farm, and the extent of farm operations will not be increased. The internal road system at the farm will be renovated.

The employment possibility at the rural sector is limited in the area because many of the livestock production facilities have closed down.

The farm will establish own heat power production at the pig farm based on straw from grain production at the crop farm.

The produced pig manure will be separated into a fibre fraction and a liquid fraction. The liquid fraction will be stored new covered lagoons and later applied as fertilizer on agricultural land with grain. The fibre fraction will be composted and disposed of as fertiliser on agricultural land as well.

The manure handling system will introduce improved storage facilities for livestock manure to the region which will also secure improved utilisation of the nutrients in the manure. This has an environmental impact as the nutrients are not leaking to the environment and it reduces the need to use chemical fertilizer in the fields. The manure handling system will be in compliance with Slovakian, Danish and EU environmental requirements.

The feed to the pigs will be produced at a local feed mill. The pigs will at finisher live weight of 110 kg be delivered to slaughterhouses in Slovakia, and there a sufficient capacity to serve the pig farm.

4.2 Location and design of farm

The farm is located in eastern part of Slovakia 95 km east from the capital Bratislava.

The farm is located 1.8 km from the village of Vrable with 9,400 inhabitants. The nearest village Melek is located 1.7 km from the farm. There are two other villages south west and north east of the farm and in a distance of 2 km. There are 20 km to the city of Nitra.

The farm is located in a distance of 1.2 km to a cattle farm without living accommodation.

According to Danish odour standards there is only low risk of odour nuisance at the nearest village 1.7 km from the farm buildings. The first buildings in Vrable are a couple of factories and store without living houses. The first living house is in distance of 1.900 meters. The required distance to the village is 1.330 meters. The required distance to a single house is 600 meters, and there will only be low risk of odour nuisance at that location. The location of the farm is observing Danish odour nuisance regulations.

Table: Summery of Danish legislation and actual distances.

Location	**DK legislation**	**Actual distance**
City	1.890 meter	App. 20 km
Village	1.330 meter	1.800 meter
Single house in countryside	600 meter	1.300 meter

In Danish legislation a neighbour farm in not counting!!
Calculated as FMK (Foreningen af Miljø medarbejdere i Kommunerne), DK

The location of the farm is in compliance with Slovakian environmental regulations.

According to Danish odour standards there is only very low risk of odour nuisance at the village 1.6 km from the farm buildings.

The farm has it own reliable water supply with a water tower.

The electricity supply from the public grid is reliable, but diesel emergency generator will be installed.

The area can be characterized as farming area and scattered small forest areas.

The project will not cause resettlement, as it is renovation of an existing farm.

The project will not have effect on cultural heritage of the region.

There are no nature protection areas which will be affected by farm operations. Southeast of the farm there is an area where sand stone are collected out of the ground, but no living house!!!

Based on assessment of the maps and site visit, it is the assessment that the chosen location is an appropriate location for the pig farm.

A map of the area with the pig farm is attached as Annex 2

4.3. Pig production

The pig production project is renovation of an existing pig production and poultry farm. The building structure is in reasonable maintenance standard, but renovation and updating of the production facilities are required.

Replacement of roof and insulation is required and the walls need renovation. A total renovation of the production facilities and manure handling and storage is required in order to that the farms fulfils Slovakian, Danish and international environmental and animal welfare regulations.

All pig farm equipment is outdated and will be removed, and new modern equipment will be installed.

The entire floor construction will be new with new manure channels covered by concrete drained and slatted floor.

New feed silos for ready made feed will be established at the pig production buildings.

The entire manure handling system will be new, but manure handling is more detailed in the chapter dealing with manure.

The pig production complex will after renovation comprise 33,980 pig places for finishers equal to an annual production of 120,000 finishers with 3.5 rotations per year. The calculated production is 118,930 finishers per year, but the number 120,000 is used as a round figure.

There are no sows and piglets on the farm and the piglets will be delivered to the farm at the weight of 30 kg.

A draft overview lay out plan is attached as Annex 1

The pig production complex is as indicated on the overview placed in 4 sections with buildings of different size. The total building area to be renovated will be 23,660 m^2. The pigs stay in same pen from they arrive and until they are sent to slaughterhouse.

The pig production unit will be totally isolated via metal fences to prevent access from intruding animals and humans. There is only one entrance for staff. All staff and visitors must shower and change into farm clothing before entering the pig production area. The staff will then proceed to pig production units and change footwear and change to working clothes.

For staff working at the pig production, service facilities with changing shower and toilet facilities will be established.

The production complex comprises the following units

1. **Entrance**
2. **Service and administration**
3. **Pig Production**
4. **Delivery unit**
5. **Manure storage**

All incoming trucks and vehicles have to pass the entrance with disinfection pit. However trucks transporting manure away will use a separate entrance only used for manure trucks. Trucks collecting dead pig will not have access to farm area, and the dead pigs will be brought to a fenced area with direct access for the truck collecting the dead pigs.

Pig production unit

The piglets are delivered to the farm at the weight of 30 kg. The pigs reach the live slaughter weight of 110 kg after 14 – 16 weeks, when they are sold to the slaughterhouse. In average 2,310 pigs are sold to slaughterhouses every week.

Section 1 – 3 there are two types of pens. The “big” type is 6.6 x 3.0 m equal to 23.1 m^2 and deducted the area occupied by feed through the net area will be 22.7 m^2. There will be housed 35 pigs in each pen. The “small” type is 7.7 x 3.0 m equal to 19.8 m^2 and deducted the area occupied by feed through the net area will be 19.5 m^2 . There will be housed 30 pigs in each pen.

Section 1 has 8 sections and each section has 9 pens of 22.7 m^2 and 9 pens of 19.5 m^2 which is equal to 585 pig places per section and 4,680 in the section.

Section 2 has 4 sections and each section has 7 pens of 22.7 m^2 and 7 pens of 19.5 m^2 which is equal to 455 pig places per section and 1,820 in the section

Section 3 has 18 sections and each section has 6 pens of 22.7 m^2 and 6 pens of 19.5 m^2 which is equal to 380 pig places per section and 7,020 in the section

Section 4 has 20 sections. Each of the 10 buildings has two sections with 32 and 34 pens respectively. Each pen will be 6.85 x 3.0 equal to 20.55 m^2 and deducted the area occupied by feed through the net area will be 20.2 m^2. There will be housed 31 pigs in each pen. The capacity of each building is 2,046 pig places and 20,460 in the section.

One unit at the finisher unit will be used as a buffer unit, which will be used for the slow growing pigs, recreation for pigs requiring special care and in cases that additional capacity for finishers is needed for some reason. In most sections one or two pens will be used as pens for sick pigs that need treatments.

Pen places, space allowance and flooring

Finisher unit	sections	Pig places	Pen size m^2	Pigs per Pen	Area per pig, m^2	Flooring Proportion drained/slats
Section 1	8	4,680	22.7 19.5	35 30	0.65 0.65	1/3 - 2/3
Section 2	4	1,820	22.7 19.5	35 30	0.65 0.65	
Section 3	18	7,020	22.7 19.5	35 30	0.65 0.65	
Section 4	20	20,460	20.2	31	0.65	
Total		33,980		.		

The floor system will be 1/3 drained concrete slatted floor with 178 mm slats and 18 mm slats and 2/3 concrete slatted floor with 80 mm slats and 18 mm slots.

The production system in terms of area allowance per pig and flooring system is in compliance with Danish animal welfare regulations applicable for new farms.

The production system will be in compliance with Slovakian requirements for pig housing.

When the pigs reach the slaughter weight, they are brought from the pig production buildings to the delivery stable. The truck loads the pigs at the delivery stables and

brings the pigs to the slaughterhouse. The truck will only have access to the delivery stable.

Equipment in the pig production unit

Feeding system
Automatic dry feeding will be installed in all production units.
The feed will be supplied from feed silos placed outside the pig production buildings.

Watering system
Automatic watering system will be installed in all pig production units.

Ventilation system
An automatic controlled ventilation system will be installed in all pig production buildings. The ventilation computer regulates the heating system and the cooling system. Ventilators will be placed at the ridge of the roof with open exhaust.

Heating system
The pig production units will be equipped with a water based heating system. The heat will be supplied from a new straw boiler unit.

Spray cooling system
A high pressure cooling system spraying system for cooling the pigs during summer periods will be installed in all pig production buildings.

Alarm system
Alarm system in compliance with Danish requirements will be installed in all pig production buildings. Part of the alarm system is emergency opening of the ventilation system in case of power failure.

Recreation pens
Pens for sick pigs and recreation pens will be established in compliance with Danish animal welfare regulations.

Production pigs
The farm will only have production pigs from 30 kg to 110 kg. There will be restricted access to pig production facilities. A production section for pigs will be completely emptied before a new batch of pigs is transferred to the section.

Pig Production Management system
All actions and operations regarding pig production will be weekly recorded in the Danish management software system "Win Pig". This system is used for organizing, analysing, reporting production performance and managing all actions for groups of pigs. Thus, Win Pig is the most important management tool for the pig production.

All records will be made on the basis of notes and paper records in each production unit. The finishers are handled on a group basis.

4.4. Storage and utilization of pig manure

The main environmental issue related to pig production is related to storage, handling and application of the manure on agricultural land.

The overall environmental strategy of the farm is to utilize the pig manure as a product, which can be used as fertiliser on agricultural fields and not consider the manure as a waste product.

All pig production buildings will be renovated with completely new bottom and 40-60 cm deep manure canals will be established.

The canals are covered by concrete slatted floor, of which 1/3 will be drained floor and 2/3 slatted floor in compliance with both Slovakian and Danish animal welfare regulations. A new pull and plug piping system below the manure canals discharges the manure to two pumping station, and further to manure storage.

A screw separator will be installed and separate the manure into a liquid fraction which amounts 90 % of the manure and a fibre fraction which amounts 10 % of the manure.

Manure production at Vrable

Pig unit	***Design of production facilities***	***Production capacity***	***Pig manure m^3 / year***
Finisher	Concrete slatted and drained floor Pull and plug pipe system	120,000 produced per year	**60,750**

The manure production is calculated by a spread sheet from Danish Agricultural Advisory Service in accordance with the official Danish standards presented below including waste water from washing and drinking:

- 1 produced finisher 30 – 110 kg 0.506 m^3

The annual manure production will then be 54,000 m^3 liquid fraction and 6,675 tons fibre fraction.

The farm will construct 3 covered manure lagoons each with a capacity of 15,000 m3 equal to a capacity of 45,000 m^3. The lagoons will be constructed according to Danish regulations. (Landbrugets byggeblad 103.04-30). This complies with a storage

capacity of more than 9 month. And additional the amount of space in the slurry channels in the buildings is not included.

The storage facilities for the fibre fraction will a concrete dung yard with discharge of liquid manure to the manure lagoon. The dung yard will be constructed according to Danish regulations for solid manure storage facilities.

The lagoons are lined with a double polymer membrane in the bottom including a security membrane and bottom membrane. Moreover, a cover membrane placed above the liquid manure surface reduces emission of odour, ammonia and other gasses. In addition, the lagoons have inspection wells for checking leakage.

The bottom and sides of the lagoon is lined with a membrane that can withstand frost, sun light and wind.

The storage capacity of the liquid fraction is equal to 11 months production, which fulfils the Danish requirement of 9 months.

The manure will be transported by truck from the farm to the fields

The manure will be used as fertilizer on the crop farm. The farm will use slurry tanker with drag-hose system for the liquid fraction, and the fibre fraction will be applied by tractor with manure spreader.

For the application of manure on agricultural land the description of abatement measures should focus on harmony requirement (required agricultural area available for manure application). The standards to compare against are Danish and EU regulations concerning application of livestock manure on agricultural land

The Danish regulations are more limiting than EU regulations.

The Danish environmental legislation stipulates a maximum of 1.4 livestock unit per ha for application of animal waste. The EU requirement is 1.7 livestock units per ha. The number of animal units is calculated in accordance to Danish standards, using the spread sheet Calculation of Animal Units and Harmony area developed by Danish Agricultural Advisory service. The calculations is that 33.7 produced pig 30 – 110 kg is equal to one livestock unit

Animal units at Vrable

Production unit	*Production*	*Animal units*
Finisher	120,000 per year 30 – 110 kg	3,561

The harmony requirement is 2,543 ha based on the Danish calculation of 1.4 livestock unit per ha. Due to Slovakian (and all UE except DK pig production) legislation calculation is based on 1.7 AU per ha. will require 2.095 ha.

The Vrable Cetin pig production farm and Velky Cetin pig production farm located 10 km away is operated as one production unit together with a 4.100 ha crop farm located 15 km from Velky Cetin farm. The manure from the two pig farms is applied at the crop farm and utilized as fertilizer. The total harmony requirement from the two pig farms is 4.240 ha. Pig manure corresponding to the area requirement of 140 ha has to be disposed on another crop production farm, but it is the assessment that it should not be a problem because the livestock density in the region is quite low.

Nutrient contents in the pig manure.

Manure fraction	Volume	N content	P content	K content
Total tonnes	60,687	340.9	64.6	169.1
Liquid fraction	89	89	84	89
% and tonnes	36.008	303.4	54,2	150.5
Fibre fraction	11	11	16	11
% and tonnes	6,675	37.5	10,3	18,6

4.5. Consumption

Feed for pigs

Annual consumption of pig feed is calculated to 26,400 tons, which will be purchased and delivered from a local feed mill.

Water

Annual consumption of water is estimated to 96,000 m^3.

The farm has it own water supply with boreholes and water tower. And new collecting underground collecting tank is prepared. Being able to give the right amount and quality of water is important.

Water will be used for drinking for pigs, cleaning of pens, cooling system in pig barns and in service buildings.

Electricity
Annual consumption of electricity is estimated to 1,440,000 KWH to the pig production unit, and the total electricity consumption for the farm is estimated to 1,728,000 KWH

The electricity supply will be from existing public grid connection. An emergency diesel generator will be installed.

Electricity is used for lighting, operation of ventilation, feeding system, manure pumping etc. and in service buildings.

Fuel for heating
The farm will establish a new straw burning boiler using straw from the crop farm.

The new straw burner boiler will be established in accordance with Slovakian requirements for fire protection and air emissions.

Annual consumption of straw is estimated to 750 tons straw, which is equivalent to replacing 270,000 m^3 of natural gas.

Heating is used in pig production buildings, administration and service buildings.

Oil for vehicles
Diesel for trucks and other vehicles will be stored in over ground steel tanks.

Lubrication oil for vehicles will be stored in drums in locked stores at the workshop

Cleaning, disinfection and hazardous materials
Disinfection materials will be used for cleaning and disinfection of pig barns.

The farm will use a very limited amount of material which can be categorized as hazardous materials. These materials are used for disinfection and chlorine for water cleaning. There will be prepared a manual for handling such chemicals in compliance with Slovakian and Danish legislation.

All materials will be stored in locked stores.

4.6. Air emission

Ventilation from pig barns is the main source of air emission, but all ventilation outlets will be placed at the ridge of pig production buildings.

The entire ventilation system will be new, and the system is selected with focus on low energy consumption and low noise level.

There will only be limited periodic air emission of dust from filling the feed silos at the pig production buildings.

N emission from pig houses, storage and spreading of manure
The nitrogen emission from the pig farm will increase the nitrogen deposition around the pig farm, but the deposition will be less than 5 kg per ha per year, which has to be compared with the background deposition of 15 – 20 kg per ha per year and the application of nitrogen on cultivated fields of 100 – 150 kg nitrogen per ha per year.

The nitrogen emission from storage of liquid manure will be reduced by using covered manure lagoons.

Source of dust emission is from ventilation of pig barns. The dust will be released outdoor close to production buildings.

The source of odour is the outlet from the ventilation system. The odour from manure handling is very limited, because manure storage is closed lagoons.

There will be very low risk of odour from pig production at the nearest village located 1.9 (1.7) km from the pig production farm.

Transport of manure from the pig farm to the fields will cause very limited periodic odour.

The transport vehicles will be a source of air emission.

Inside barns
CO2: 600 – 3,500 ppm; higher during winter with low ventilation rate
NH3: 1 – 25 ppm; higher during period with low ventilation rate.

4.7. Noise

The source of noise is ventilation of pig production buildings and periodic from transport.

The noise level from ventilation is low and the noise level from operation of the pig farm will not cause noise impact outside 1 km around the pig production buildings.

Noise from internal transport and external transport with feed, pigs, manure, staff etc. are limited sources of periodic noise.

4.8. Waste products

The farm will elaborate a waste management plan for the pig production farm.

The farm will make written agreements with authorised companies to collect or receive waste from the farm. The farm will initiate establishing a recording system for delivery or collection of waste.

All waste will be sorted and stored separately. Written guidelines about sorting and storing waste will be prepared and all employees must be aware of the instructions to be followed.

The farm will draw specific attention to guidelines for storage of medicine and chemicals and disposal of medicine and chemical remnants and used packaging.

The dead animals and killed sick animals are collected daily from the farm units and brought to a cooling container for dead animals. The cooling container will be placed at a properly fenced and locked area.

The farm will establish an agreement with an authorised company to collect the dead pigs.

The amount of dead pigs is estimated to 273 tons calculated as 120,000 produced pigs per year with a mortality rate of 3.5 % and average weight if the dead pigs of 65 kg. Handling of dead pigs will be in compliance with Slovakian and Danish regulations.

Manure and water from cleaning the barns will be pumped to the manure lagoon, and later applied on agricultural land, as described in details in previous chapter. The amount of manure produced is estimated at 60,750 tons per year separated into a liquid fraction and a fibre fraction.

Waste water from staff facilities such as toilets, bath facilities and canteen, will be collected and treated in a waste water treatment plant. Establishment of waste water treatment facilities will be according to Slovakian regulations.

Rain water from roofs and roads etc will be discharged to ditches and a rain water collection system and further discharged to the river. It will be secured that neither pig manure nor waste water from staff facilities is discharged to the rain water system.

The farm will establish an efficient system for controlling pests such as flies, mice and rats all over the farm.

4.9. Transport

The supply of feed to the farm will be 26,400 tons annually, equal to 1200 trucks each carrying 23 tons. The feed will be delivered to silos at the pig production buildings.

The supply of the 124,350 piglets of 30 kg will be equal to 207 trucks with 600 piglets on each truck.

The annual delivery of pigs to the slaughterhouse will be 120,000, equal to 600 trucks annually each carrying 200 pigs.

The farm produces 60,750 tons pig manure annually. The 54,000 tons will be liquid manure which will be transported from the farm to the fields by truck. This will be equal to 1800 trucks annually each carrying 30 tons.

The farm produces annually 6,750 tons fibre fraction from manure separation. This will be transported to the field by truck. This will be equal to 270 trucks annually each carrying 25 tons.

Other transport to and from the farm will include transport of staff working at the farm, waste from the farm etc.

The transport will have minor periodic impact (odour, noise, vibrations, traffic security, traffic load) on the roads and in the villages.

4.10. Veterinarian aspects

The farm will employ a Slovakian veterinarian.

A Danish veterinarian will be attached to the farm as veterinarian consultant, and will visit the farm according to need.

The farm will in general only use medicine and vaccines allowed in Slovakia and EU. Consequently the farm will not use growth promoters.

The farm will follow Slovakian veterinarian regulations. The farm will thus have the obligation to follow Slovakian vaccination programs although these might not be allowed in Denmark.

The farm will have periodic inspection from Slovakian veterinarian authorities

The farm will make recording on use of medicine and report to Slovakian veterinarian authorities.

4.11. Best Available Technology (BAT)

The benchmark for the Danish environmental and animal welfare legislation is EU directives dealing with these subjects and EU BREF note on Intensive rearing of poultry and pigs.

The manure handling system inside production buildings and construction of covered manure lagoons will be made in compliance with guidelines and BAT notes from Danish Agricultural Advisory Centre.

Danish legislation of flooring system, density of pig, housing systems are in compliance with EU directives.

The pig farm will be in compliance with Slovakian and Danish legislation on these issues.

Danish environmental legislation is more specific and limiting than IFC Environmental, Health and safety guidelines for Mammalian Livestock production, April 30, 2007.

The farm will be in compliance with IFC Environmental, Health and safety guidelines for Mammalian Livestock production, April 30, 2007.

5.0 Alternations

The pig farm is located appropriate in a rural area with the possibility to dispose and utilise the pig manure on a crop farm located just 15 km from the farm.

There is 1.7 km from the farm to the nearest village, and 1.2 km to the nearest farm without living accommodation.

Local infrastructure such as road connection, power supply, water supply etc will be used after some renovation.

It is renovation of an existing farm and further assessment of alternative location of the farm is therefore not relevant.

6.0 Evaluation of environmental impacts

Operation of the farm will not have negative noise impact at the nearest village located 1.8 km from the pig farm.

According to Danish odour standards there is only very low risk of odour nuisance at the nearest village located 1.6 km from the farm.

Transport of piglets, feed, other commodities and staff and manure and pigs from the farm will have a minor impact (odour, noise, vibrations, traffic security, traffic load) on the local road system and in villages.

Operation of the farm will not have negative impact of air quality outside the distance of 1.0 km around the pig production buildings.

7.0 Evaluation of social impact

The pig production farm will start operation in 2010 and when the pig farm is in full production the Slovakian employment will be 20 to 22 persons in the production, and additional staff will be needed for maintenance, administration, transport and other

services so the total number of Slovakian employees for the farm will be up to 35 persons**.** In addition to this the farm will create secondary employment for the local community because the farm will purchase building materials and other commodities as well as purchase services such as transport of commodities to and from the farm.

All Slovakian employees will have an employment contracts according to Slovakian regulations.

The farm will observe Slovakian occupational health and safety regulations. The farm will prepare written instructions for all work operations at the farm in order to reduce the risk of accidents and injuries. The instruction will be in compliance with both Slovakian and Danish regulations.

All employees will be trained in safety and provided with overalls and individual safety outfit according to Slovakian labour and safety requirements.

Service buildings will be established at the pig production unit and at the administration building. These service buildings will comprise canteens, toilets and shower facilities.

The foreign management will be a pig production manager. During the renovation period there will also be some technical managers responsible for renovation of the farm.

The farm will establish training programs for Slovakian employees, who will gain knowledge and skills in modern pig production methods according to newest management and production systems.

The farm will have a positive social effect in the area because it creates employment in an area with an unemployment rate of 11 %, and limited alternative employment opportunities in the agricultural sector.

8.0 Public hearing and grievance mechanism

Renovation and operation of the farm requires a number Slovakian permits and environmental assessments. The farm has already some of the documents, and is in the process of preparation of the remaining.

The Slovakian authorities have stated that the farm has a valid IPPC (Integrated Pollution Protection Control) permission for finishers covering part of the farm. An EIA (Environmental Impact Assessment) study and revised IPPC permission is requested.

Part of the approval procedures is that both the Slovakian EIA and IPPC will be published in local media for comments and the EIA will also be published in the Web site of Ministry of Environment.

However, it should be emphasised that elaboration of this Environmental Review will not be in interference with elaboration of the Slovakian permits and environmental assessments (IPPC and EIA) which will be in compliance with Slovakian legislation.

This Environmental Review will be made public for 30 days at the farms website in both Slovakian and English language.

A short project description will be available on the website as well.

The website will include guidelines in case there should be any reason for grievance during the publication period and during operation of the farm.

9.0 Emergency plan

The farm will establish emergency plan in accordance with requirement from Slovakian authorities.

10.0 Environmental management plan

The farm will prepare an environmental management plan for the farm.

The farm will appoint a qualified person, who will be responsible for the environmental management.

The farm will prepare an annual report on environmental management practice including slurry handling, animal welfare, veterinarian and medication practice

Annex 1. Lay out overview of Vrable pig farm

Annex 01.1: Farm as it is today, sketch.

Annex 01.2: Farm after reconstruction, sketch of overview

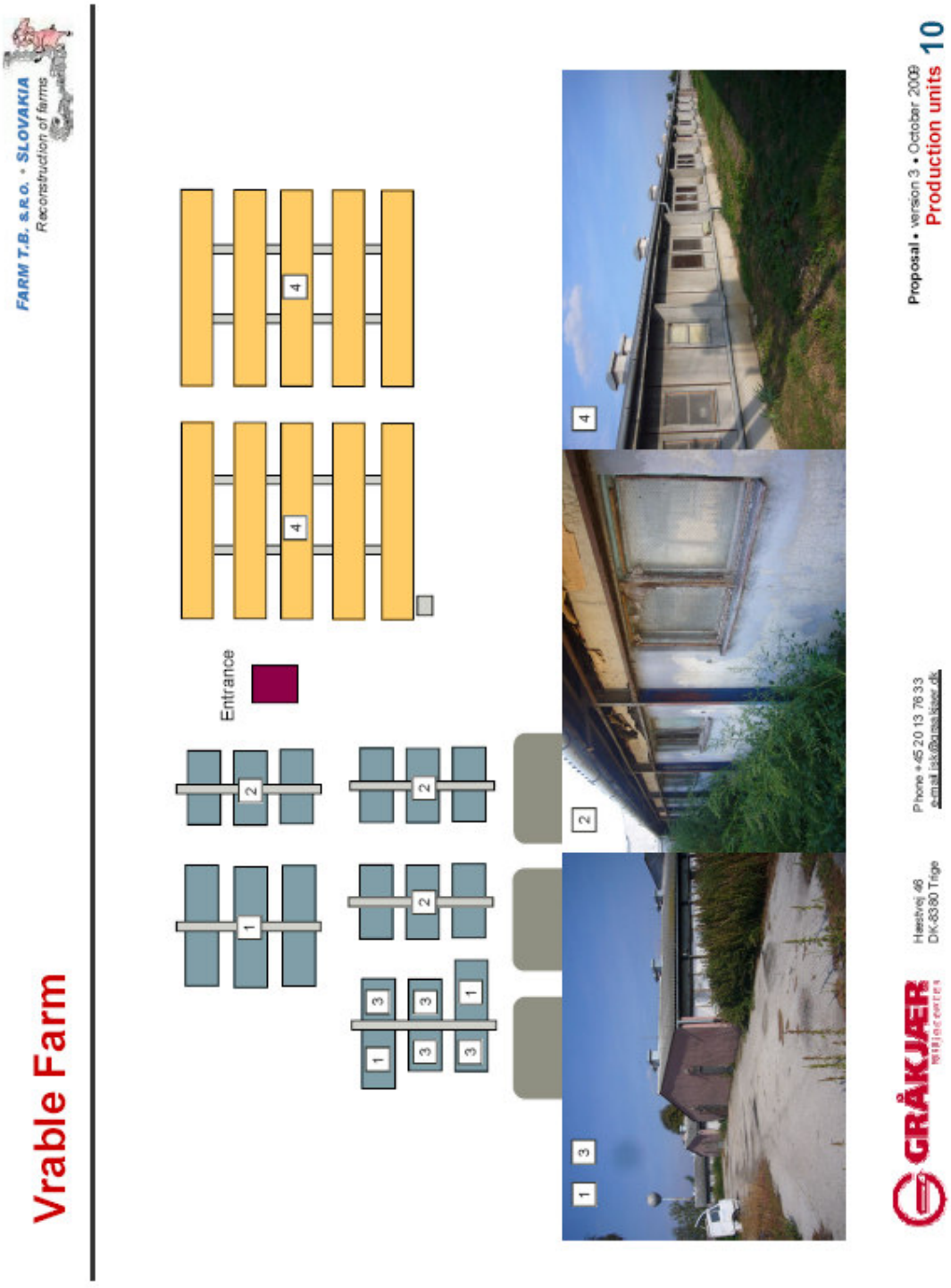
Annex 01.3: Farm after renovation, Photo and sketch of overview

Annex 2. Map of area with farm

Annex 02: Map of the area from Slovakia with distance to village and house
See attached PDF file

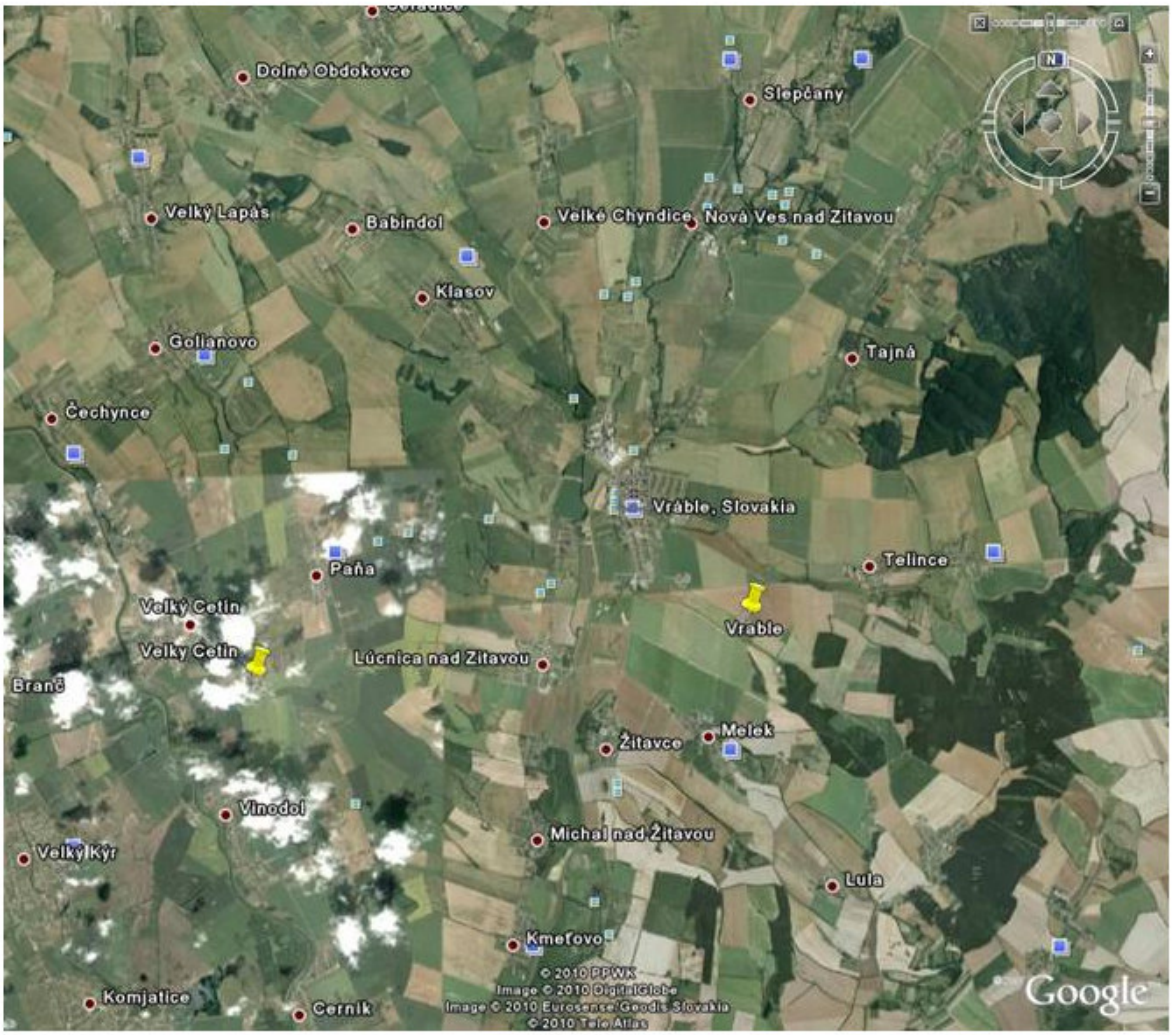
Annex 01.1: Farm as it is today, sketch

Annex 01.2: Farm after reconstruction, sketch of overview



Annex 01.3: Farm after renovation, Photo and sketch of overview

Annex 02: Map of the area from Slovakia with distance to village and house
See attached PDF file


Dolné Obdokovce
Slepčany
Velký Lapáš
Babindol
Velké Chyndice
Nová Ves nad Žitavou
Klasov
Golianovo
Tajná
Čechynce
Vráble, Slovakia
Paňa
Telince
Velký Cetin
Vráble
Velký Cetin
Lúčnica nad Žitavou
Branč
Žitavce
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