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**By E-mail  
And Fax**

Dear Sirs

**Rainbow Farms (Pty) Ltd | Eskom Proposed Isundu 765/400KV Sub-station and turn-in transmission lines**

**1. INTRODUCTION**

We are instructed by Rainbow Farms (Pty) Ltd ("Rainbow") to lodge an objection to the application for the proposed Isundu 765/400KV Sub-station and turn-in transmission lines near Cato Ridge, KwaZulu-Natal brought by Eskom Holdings SOC Ltd ("Eskom") Ref No: DEA 14/12/16/3/3/2/745, as well as to the amendment application Ref No: 12/12/20/1397/3/AMR which is attached as an annexure to the first application.

There are 11 Rainbow Farm operations within the study area and within 03.km to 4km of the proposed development. The Rainbow farms are Portions 187 and 253 of 855 on the Farm Vaalkop and Dadelfontein, 14767 of Rainbow Ranch and Portion 19 of 1032 of the Farm Langehoop. This objection demonstrates why the proposed sub-station and transmission lines cannot be accommodated on or near the Rainbow Sites as proposed. Attached marked **A** is a google diagram and Map indicating the location of the Rainbow sites in relation to the proposed development.

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The EIA assessment and the approval of the corridor under 12/12/20/1397/3 within which the 765kV line and 2 x 400kV turn-in lines are to run and to connect into the substation, was not, as far as we can ascertain, brought to the attention of Rainbow. All Rainbow's rights in this regard are reserved. This corridor cuts through Rainbow's farms and the proposed transmissions lines to be established therein will have enormous detrimental impacts on the industry which impacts are detailed in this submission.

## **2. RAINBOW**

In assessing the weight to be given to our client's submission it should be borne in mind that Rainbow is a major national producer of broiler chickens. It is a fully vertically integrated broiler producer that breeds and rears its own livestock which it feeds from its own feed mills, and processes, distributes and markets its products. Rainbow produces and supplies fresh, frozen, value-added and further-processed chicken products, and operates in the retail, wholesale and foodservice channels with four brands - Rainbow, Farmer Brown, Rainbow Simply Chicken and FoodSolutions. It supplies its products to major retailers, wholesalers and fast food chains. It also produces a variety of dealer-own brands for certain retailers and wholesalers.

### **2.1 THE VALUE CHAIN**

To place our client's concern in context it is necessary to understand how its business operates. The farms affected by the proposed activities are components of a much larger production chain. Rainbow's operation runs on an extremely detailed and sensitive chain of laying and rearing events. A brief explanation is as follows.

Rainbow sources its pedigreed breed stock (Grandparents) from the United Kingdom and Europe. From those pedigreed animals it breeds its parent stock. Those breeding parents lay chicks that will ultimately become broiler chickens for slaughter. The initial pedigreed grandparents result in the production through the parent stock of approximately 5 million chickens per week. Any disruption to the grand parents will result in a disastrous multiplier effect and loss of birds - equating to the loss of millions of rand per week, and a significant disruption to the supply of staple food to the nation's population. The Rainbow farms are managed and controlled on an exceptionally delicately balanced protocol which ensures the stability and well-being of the birds. Any minor disturbance thereto will create disruption and death. The major factors are water, food, light, noise, vibrations, dust and air quality, and any threat to its biosecurity. Any disturbance to the chicks will affect their feeding pattern.

There are effectively 4 phases to the production of chickens for slaughter. The first phase introduces and rears the pedigreed grandparent stock that will produce the good breeding parent stock. The second phase is production and rearing of the good breeding stock in order to produce the broiler stock (the stock that will be sold for consumption). The third phase is the production and rearing of the broiler stock, and the fourth phase is the processing of the broiler stock.

Rainbow import a "female line" and a "male line". These grandparent chicks are placed on a rearing farm where they are fed and grown to 22 weeks. At 22 weeks the chicks are transferred to the laying farms. At the laying farms the chicks mate. From 26 to 60 weeks the hens produce eggs. (At 60 weeks the birds are replaced with new intake). The eggs are placed in an incubator for 18 days and thereafter they are transferred to the hatchery for 3 days. Each grandparent hen produces approximately 148 to 162 parent eggs- approximately 11 million eggs. From these eggs breeding (parent stock) chicks are produced.

These chicks are responsible for laying the eggs that will be reared into broiler chickens for slaughter. From the grandparent farms the parent stock chicks are transported to the rearing houses. The chicks are fed and grown to 21 weeks and from there they are transferred to the laying farms. Here the chicks mate and from 26 to 60 weeks the hens produce ideal eggs. These eggs are then transferred to the hatchery where they are placed in an incubator for 18 days. After 18 days they are transferred to the hatchery for 3 days and after this cycle of 21 days a broiler chick gets produced.

The broiler chicks get transferred to the broiler farms and here they are fed and grown to the point of slaughter on a 6 week cycle. Five million chicks per week are slaughtered as a result of this production chain.

Rainbow then slaughters and processes the birds at its processing plants, prior to distribution of a variety of products to supermarkets, restaurants and fast food chain stores.

Examples of the strict controls that are required for the successful rearing of the grandparent and parent stock and production of broiler chicks for slaughter are:

- On arrival the grandparent chicks are quarantined for six weeks.
- The personnel responsible for the chicks are quarantined with them for 2 weeks and do not leave the facility during this time nor are the staff changed. A change in staff at this stage disrupts the chicks.
- All persons and vehicles going in and out of the premises have to go through sanitization processes. All persons have to wear specially designed protective clothing.
- The chicks are fed the exact amount of food through feeders at hourly intervals every day to an exact weight.

- They are provided with the exact amount of water of a constant quality through dispensers every day.

It is clearly evident from the above that Rainbow is an integrated, complex and delicately balanced value chain.

The operations in question are not individual, standalone chicken farms, and each forms a significant link in this value chain. Any minor disruption to these processes will result in disastrous consequences for Rainbow - both in terms of known and unknown impacts.

Rainbow has contracts in place with retailers and fast food chain stores to supply chicken products. In the event that the operations at any of these farms are interrupted then this will place Rainbow in breach of its obligations. Rainbow has established effective best practice national norms and complies with strict international policy relevant to its national demand.

## **2.2 THE SITES**

The affected sites comprise Rainbow's 7 parent stock laying farms and 4 broiler farms. At the laying farms the chicks mate and lay eggs. The eggs are incubated and hatched. A broiler chick is produced and gets transferred to the adjacent broiler farms. They are meticulously fed and watered according to scientific data to the point slaughter. The 7 laying farms in the study area each consist of 6 houses containing 7000 birds- a total of 294000 laying birds at any one time. The loss of one breeding farm, assuming that it can be re-established within 1 breeding cycle, is in excess of R540 million. If it cannot be re-established the multiplier effect is enormous.

The 4 broiler farms contain a total of 1 370 000 chicks at any one time.

The proposed substation is in close proximity to these laying and broiler houses and the approved transmission line corridor cuts right through the houses.

## **OBJECTIONS**

### **3. THE PREVIOUS EIA**

We have no record of any on-going engagement with Rainbow in the previous EIA which lead to the authorisation of the preferred corridor - part of which corridor will be used for the transmission lines associated with this substation. The submissions made in this response apply equally to the impacts that the transmission lines that run over Rainbow's properties or in close proximity to them will have.

The only correspondence on file is a letter dated 8 September 2011 referring to an EIA Ref No: 12/12/20/2176 being placed on hold. There was no engagement with Rainbow relating to the assessment of the corridor and the Sigma substation. Should you have evidence to the contrary kindly provide us with this as a matter of urgency. The EIA regulations state that proof of notification to all affected landowners must be provided. A list of GIS co-ordinates is not sufficient.

Given the stature of Rainbow and the potential impacts that it will suffer, a concerted effort by the assessment practitioner was required to ensure its notification and participation. In the absence of this an opportunity for reasonable participation was denied Rainbow. The Department of Environmental Affairs should have called for further information relating to the notification and engagement with Rainbow prior to authorising the application. Kindly forward to us the environmental authorisation and any correspondence that the applicant had with Rainbow in relation to that application. All Rainbow's rights in this regard are reserved.

Rainbow did not receive notification relating to the separate amendment application in relation thereto. The amendment application is a loose attachment amongst the documents relating to this scoping report, and not a stand-alone application that should have been independently advertised and provided. It only came to our attention whilst reviewing the scoping report, and associated documents. Reference to the amendment application elsewhere is unclear and confusing.

The comments contained herein apply equally to the amendment application where applicable.

#### **4. THE EXEMPTION APPLICATION NOT TO CONSIDER ALTERNATIVES**

This application is also an attachment to the scoping report in the Acer drop box. It is unclear whether this application has been granted. This application for exemption was not brought to the attention of Rainbow as is required by the EIA 2010 regulations, and is accordingly fatally flawed. Rainbow had a direct interest and right into ensuring that alternative routes were considered.

#### **5. THE IMPACTS**

##### **5.1 ECONOMIC**

The potential economic impacts on the Rainbow facility is enormous and have not been given sufficient attention or acknowledgement in the scoping report. Notwithstanding it must be addressed in the EIA its significance in the economic environment of the region and nationally is readily evident and should be red flagged at this stage. The proposal to establish the sub-station at Sigma was abandoned due to economic reasons that Eskom will suffer. The effect that the Isundu

sub-station will have on Rainbow's economic security, and the knock on effect that it will have on food security, and the costs of substituting this food source, must be given the same consideration and significance.

With one disruption to its laying and breeding facility Rainbow can lose R540 million directly - that is not counting the costs of the social impacts relating to food security. Page 16 of the scoping report states that Eskom has abandoned the Sigma substation as it could cost between R500- R800 million. This is a one off cost - much of which would have to be spent in the establishment of the Isundu or any other sub-station.

In any event Rainbow would not be able to support the approved corridor that is associated with the Sigma substation.

Other considerations that need to be taken into account:

- **There has been substantial investment in Rainbow's properties and operations.**
- Rainbow facility directly and indirectly results in employment for 8000 people, thus making Rainbow one of the bigger employers in this area.
- Rainbow is one of the bigger industries in KZN.
- It cannot be moved as it is strategically located to Rainbow's other operations e.g. laying Farms, Hatchery and Broiler Farms.
- All farms on this site are linked to a production cycle and therefore cannot be moved to alternative sites.
- Disruptions to the process internally - such as moving farms - cannot be accommodated without impacting on the cumulative process.

## **5.2 FOOD SECURITY**

Food production, and in particular protein, is a national imperative, and chicken has surpassed red meat as the primary protein source amongst South African consumers. The damage that the proposed sub-station and transmission lines can do to this supply change is significant, and the resultant impacts on food supply and nutrition cannot be mitigated. The Rainbow operations simply cannot be disturbed or compromised. This existing operation cannot be relocated. Notwithstanding the demand for improved Eskom infrastructure, this can be established elsewhere as was demonstrated in the previous EIA. The disruption to the Rainbow operations will be a significant threat to food security, a strategic imperative in the National Development Plan and the Phakiso project. Agriculture is promoted and protected by legislation and policy. Agriculture of this degree and magnitude cannot be undermined.

As far as the unjustifiable impacts that will result for Rainbow and for the nation at large, the alternative must be the “no –go” option.

The Mkambathini Municipality in whose jurisdiction the proposed development falls has identified this significant agricultural industry and has given it the protection it deserves in its spatial development framework. In terms of the Constitution, the local authority has the competence to determine this - which competence cannot be usurped by the private sector, a parastatal or national or provincial authorities.

### **5.3 ELECTRICAL EMISSIONS ON BREEDING BIRDS**

The significant detrimental effect of electromagnetic fields (“EMF”s) on the well-being and breeding potential of the birds is discussed in detail in the Metamorphosis report attached hereto marked **B**. This concern is re-iterated in the submission made by the African Birds of Prey Association who also have grave concerns relating to EMF’s on the birds in the sanctuary that is adjacent to the proposed site, as well as the effect on the birds whose habitat is in the area. The impact of high electrical voltage/currents and microwaves on breeding birds and on people in general in the area cannot be mitigated.

### **5.4 BIOSECURITY**

Due to the sensitivity of Rainbow’s operations it has very strict bio-security rules. Biosecurity, simply put, includes the processes followed to ensure that an infectious disease, or any other vector that may cause death or sickness, is not introduced into flock. These preventative measures are based on applied micro-biology and epidemiology.

A comprehensive biosecurity program comprises a hierarchy of conceptual, structural and operational components directed at preventing infectious disease transmission.

Conceptual biosecurity is the primary level of biosecurity and involves the siting of a poultry operation and its various components. Physical isolation is a primary consideration in securing conceptual biosecurity.

The following are, amongst others, the sources of poultry diseases:

- Source contamination: Animals, feed or water that carry a biological agent and transmit it. People, clothing or vehicles can harbour a biological agent that when moved around can spread the agent;
- Vector contamination: Vermin, wild birds (especially water that fowl and pigeons), insects and fomites (such as fecal material, feathers and dust) can be wind or water transmitted;
- Facility contamination: a major source of disease is transmission by people (employees, truck drivers etc).

The farms are currently isolated and are exposed to no threat from the immediate environment. Public roads and small roads in the vicinity of a chicken farm exacerbate exposure of that farm to biosecurity risks. As does any increase in uncontrolled human/vehicle traffic on and around the farms.

There is the related risk that government and quarantine certification will be withdrawn where the farm is no longer isolated as before.

In principle, if Rainbow was looking to introduce a new farm to an area, it would not place its farm within a 10km radius of any other farm which was not a Rainbow farm, or any other vector source. This radius would put Rainbow's operation outside of the buffer control area for the outbreak of Avian Influenza (AI). Were AI not a threat, then Rainbow would in any event not position a farm close to a source of biosecurity risk, and to any other risk that will put the rearing of the animals at risk. This is discussed further in the Metamorphosis report attached marked **B**.

The increased activities that will be introduced by the construction and operation of the sub-station and the transmission lines will exacerbate the risk to biosecurity.

## **5.5 WATER**

Water is one of the most important resources for any poultry operation, and Rainbow is completely reliant on a constant water supply of a constant quality.

Any activity which has the potential to disturb this or affect the water supply will have a severely negative effect on Rainbow's operations.

The need to intervene into a water resource increases the risk of contamination causing an increase in the bacterial load. This in turn may result in disease or reduced development of the birds.



An integrated risk averse approach must be adopted.

## **5.6 NOISE, DUST AND VIBRATIONS**

The birds are very sensitive to noise, vibrations/tremors, dust and interruptions and these factors will have a severe negative impact on production in any combination of the following ways:

- Decrease in Eggs per hen, hatchability, and fertility;
- Decreased growth;
- Decreased feed and water intake;
- Increase in mortality - birds 'bundle up' when stressed which causes 'smothering';
- Excessive dust entering the chicken houses and affecting the health of the birds;

It should go without saying that a negative effect on the well-being of the chickens has an immediate impact on Rainbow's production, and a knock-on effect on the complex value chain detailed above as well as on Rainbow's sustainability.

There will be an increase in dust due to the movement of topsoil and subsoil, the crushing plant and the movement of vehicles and haulage of infrastructure.

Noise during the construction phase is likely to affect production as breeding birds are very sensitive to changes in noise levels. Noise levels after construction if or when there is a short in the circuit at the substation may also affect the birds. Rainbow forms a significant component of the landscape upon which the impact of noise will be far more significant than merely on rural farmland.

## **5.7 SOCIAL**

The scoping report, in not identifying Rainbow as a significant social and economic contributor, has not adequately scoped the status quo. The proposal has the potential to sterilise the poultry industry to a significant extent. The report recognises the sterilisation of agricultural land, and the impacts that that may have but does not recognise this industry. It does not address the multiplier effect that the loss of a portion of the Rainbow value chain will have.

## **5.8 LIGHTING**

There will be security lighting around the substation which will affect the photo-stimulation of the breeding birds for reproduction. Birds get the signal for reproduction based on body condition as well as photo-stimulation and feed levels. Incorrect stimulation will negatively impact production.

### **5.10. NEED and ALTERNATIVES**

It is accepted that there is a great need for Eskom to improve its infrastructure. But the significant nature of the Rainbow operation in this location, puts the need and desirability of the project in this location into question and the no go option would be the most viable option.

At the very least, as far as Rainbow is concerned an alternative site at least 10 kilometres from Rainbow should be considered.

## **6. PLANNING**

The proposal is contrary to the planning principles of the affected municipalities as upheld in the Constitution. The Makambathini Municipality has objected to the proposal as it is not in accordance with its SDF - its planning instrument that is developed with ongoing assessment and identification of appropriate land use for the future. The Musunduzi Municipality have also objected to those portions of the proposal that fall within its jurisdiction. Whilst national competence in certain areas such as environment may overlap with local government, it does not do so in terms of planning. And there is no overwhelming justification in terms of ecological issues for the sub-station to be located here which would override planning principles. In fact the contrary applies.

## **7. THE PLAN OF STUDY FOR THE EIA**

In the event that this assessment is allowed to proceed to the EIA stage the operation of Rainbow must be wholly taken into account as a sensitive receptor in every respect. As it is a key stakeholder in the area and one upon whom the impacts may potentially be disastrous specific attention must be given to it in the assessments.

There must be a detailed investigation, identification and assessment of the sources of:

- the water sources and potential contamination.
- the nature and sensitivity of chickens to vibrations including an avifauna veterinarian's report;

- the nature and sensitivity of chickens to noise including an avifauna veterinarian and noise expert;
- the nature and sensitivity of chickens to dust including a avifauna veterinarian and air quality dispersion expert;
- a biosecurity assessment given the potential for human borne disease;
- a social and economic assessment taking special cognisance of Rainbow's contribution and the impact on food security and employment in the event that rainbow is negatively impacted upon; and
- a traffic assessment in relation to Rainbow's facility.
- an EMF and microwave study, including an avifauna veterinarian's report in this regard.

A full focus group meeting with Rainbow and its legal representatives must be conducted.

## **2.6 THE SCOPING PHASE**

The consultants have not participated with Rainbow sufficiently and as envisaged by the environmental legislation where it expects engagement to be more than a high level description of the proposal offered in a public meeting. One would have expected that Rainbow, given its strategic national footprint and contribution to the GDP, was identified in the report as being a significant interested and affected party, and consulted with accordingly - on all aspects of this proposal- the original EIA, the amendment application, the exemption application and the current EIA. The comment and response report does not give sufficient attention to the submissions made by Rainbow.

The scoping report does not correctly describe the socio-economic environment that exists, and hence is deficient.

It is clear from the proposal described in the scoping report that there will be significant impacts generally and specifically to Rainbow. Rainbow has been through similar processes before and can say that an operation of this magnitude in this vicinity will have impacts that have the potential to significantly affect its operations. Accordingly it is in the best interests of the applicant to ascertain this before going to further expense as Rainbow will be constrained to take whatever legal measures are available to it to protect its operations. In order to consider such an application Rainbow requires a protection buffer of a 10 kilometre radius.

The applicant and the competent authorities have to take a precautionary approach to this application and must take into account the Constitutional prerogative of securing ecologically

sustainable development and use of natural resources while promoting justifiable economic and social development.

The potential impacts arising from this proposal in this context will not be justifiable, and will not pass constitutional muster. It will not pass the test of sustainable development being the integration of social, economic and environmental factors into planning, implementation and decision-making so as to ensure that development serves present and future generations.

### **3. CONCLUSION**

Rainbow's operation is that of commercial poultry farming and is sufficiently significant to require protection. The granting of the right to develop this proposal will be a violation of Rainbow's constitutional rights which cannot be justifiably limited. The proposed activities violate Rainbow's right to property and trade, and do not constitute justifiable sustainable development as required by section 24(b)(iii) of the Constitution.

One understands the challenge the government faces in satisfying demands, needs and environmental attributes of all parties concerned, but to jeopardise an operation such as Rainbow's cannot be justified in any terms. This submission shows that the extensive and sensitive farming activities of Rainbow cannot accommodate the substation and the transmission lines. It is neither desirable nor in the national interest to jeopardize this operation.

This submission is also made in the interests of avoiding a lengthy and cumbersome application process, appeals and reviews due to the incompatible nature of the proposed activities and the chicken production facility, which incompatibility is eminently apparent from the outset.

Kindly acknowledge receipt.

Yours faithfully



**Aldine Armstrong  
For Eversheds**

CC: Department of Environmental Affairs  
Mr Ishaam Abader

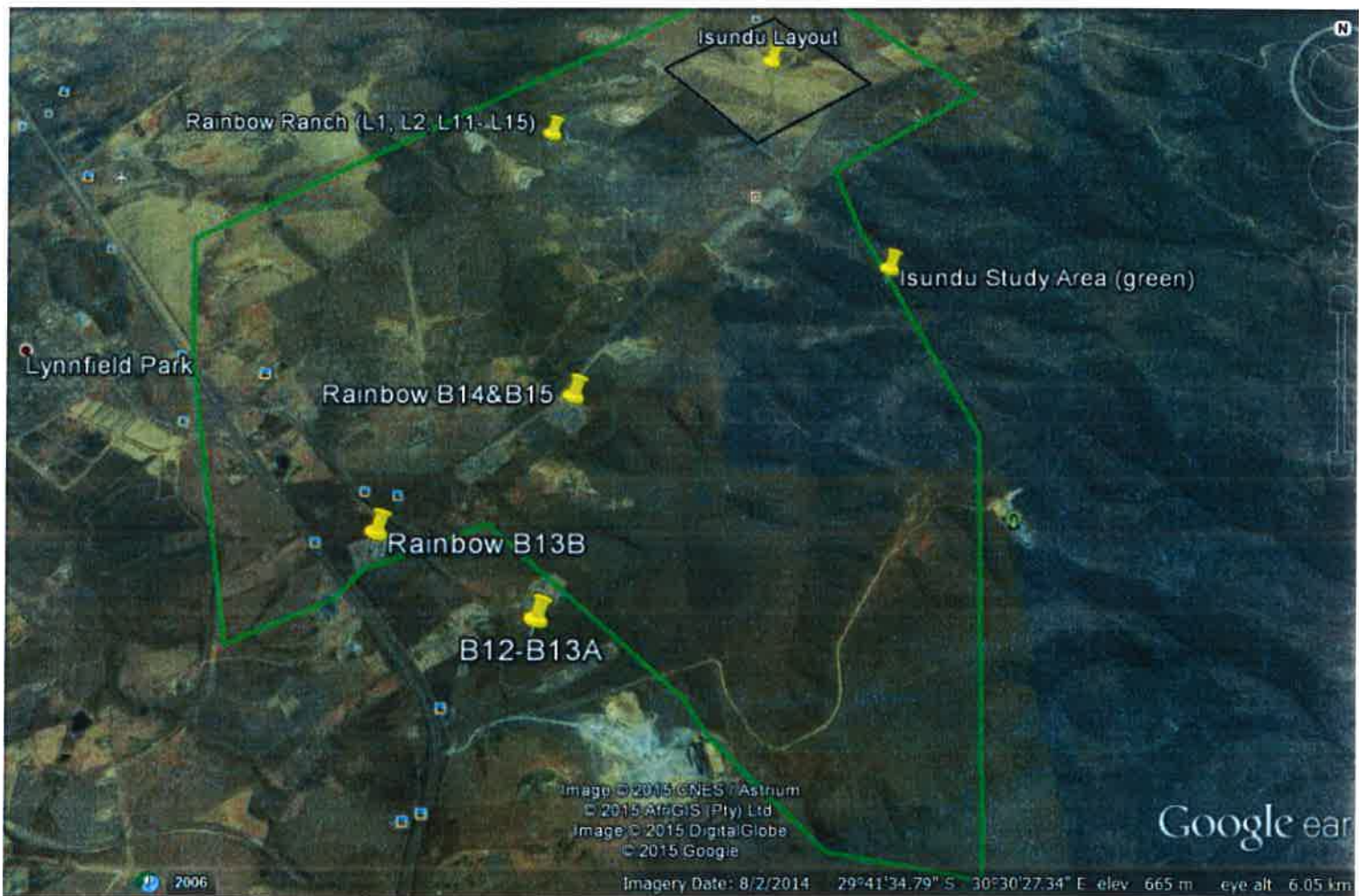
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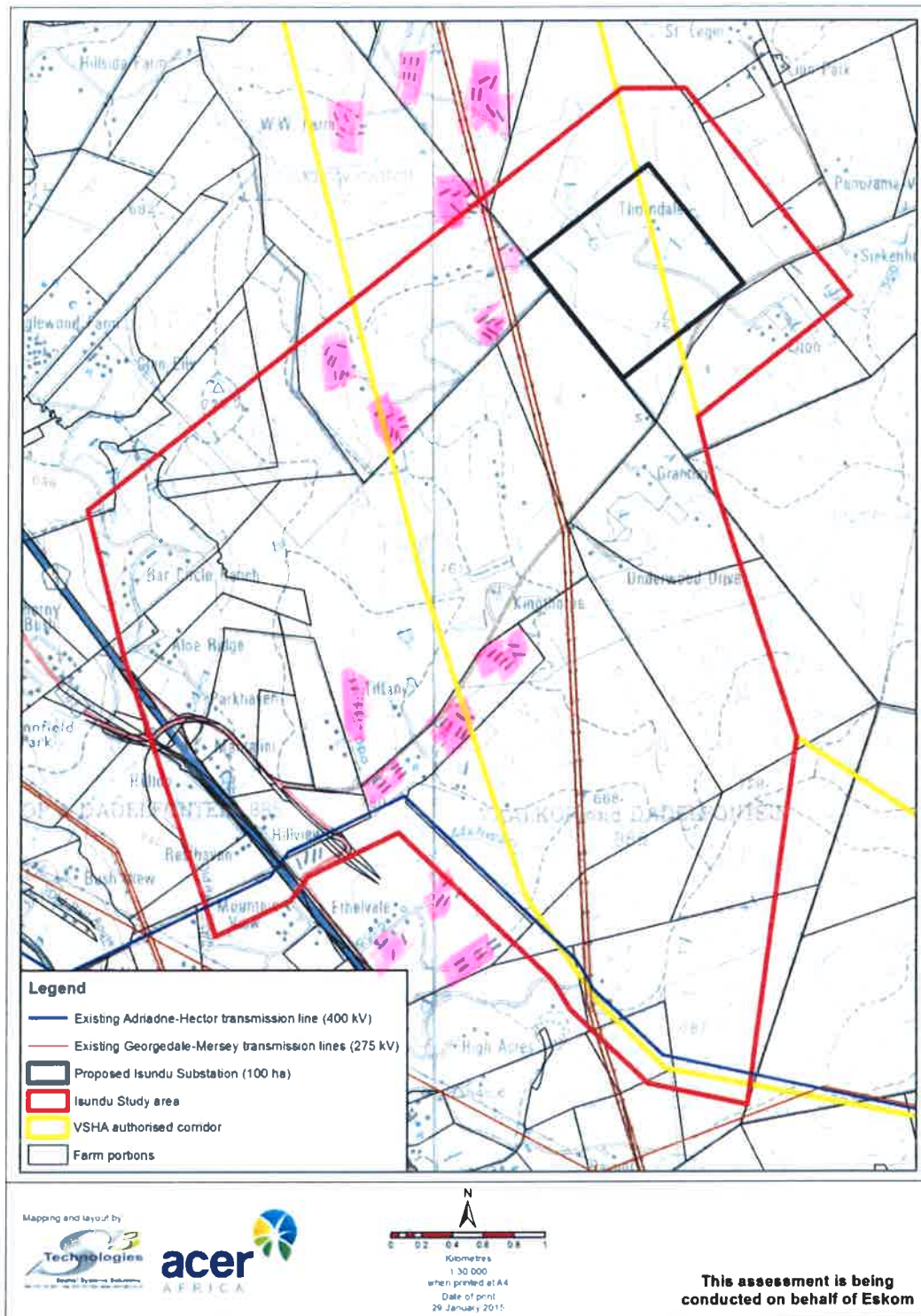












 Rainbow chicken houses

Figure 1 Location of the proposed Isundu Sub-station, near Ashburton, KwaZulu-Natal