Committee Secretary
Senate Standing Committee on Environment, Communications and the Arts

Email: eca.sen@aph.gov.au

7th February, 2011

Dear Sir/Madam,

re: ***The Inquiry into the status, health and sustainability of Australia's koala***

The enclosed submission is presented for consideration by the Senate Standing Committee on behalf of the residents of the Sunshine Coast Hinterland communities of Eerwah Vale and Ridgewood. These communities have formed a residents' action group known as P.A.G.E. (Powerlines Action Group Eumundi) which is an incorporated association.

[About P.A.G.E. P.A.G.E. has been actively trying to persuade Powerlink Queensland to adopt a more sustainable route for their planned 275 kV double-circuit transmission line between the Woolooga Substation and a new substation at Eerwah Vale .]

P.A.G.E. and the community are eager to see our environment protected for future generations, and are insisting that the Queensland State Government and its agencies consider less environmentally impacting, viable (workable) alternatives rather than the 'business as usual' approach that infrastructure proponents generally adopt.

Powerlink's proposed project (Woolooga to Eerwah Vale Transmission & Substation Project) includes bulldozing through the Noosa Biosphere which, should it proceed, will result in the destruction of important natural wildlife and flora habitat and corridors, including prime koala habitat. It will also destroy the visual amenity of one of the Sunshine Coast's tourist destinations, with resultant economic loss to the Sunshine Coast already under severe stress from the current economic crisis.

However, this submission is not about P.A.G.E.'s "fight" with Powerlink, but it does draw on relevant information gained from that "fight" in respect of the koala.

Since its inception in August 2007, P.A.G.E. has been actively involved in the monitoring and recording of the koala in the area of Powerlink's proposed easement. This has involved many of the residents to be on "koala watch", and when a koala is sighted, photographs are taken (if possible), the GPS coordinates are noted, and these are recorded in a database.

P.A.G.E. also has its own environmental group (headed by an Environmental Scientist) which regularly conducts field surveys, collects the digital photographs from our three camera traps, and check and reload the 30 hair traps which are strategically placed in the easement area.

P.A.G.E. felt compelled to bring the plight of the koala to a wider, local and international audience, and so as to assist the koala in a meaningful way, it funded and produced a professionally-made video entitled 'Save Eumundi, Save Koala'.

We urge the reader to browse our website our website which is kept up-to-date and is relevant to the plight of the koala as much as it is a professional, open and honest attempt to stop an infrastructure project from decimating a healthy population of koala (as well as other species). It is important to note here that P.A.G.E. is not suggesting that electricity supply and its security be stopped or increased into the Sunshine Coast area: instead, it has proposed significantly cheaper and lower impact solutions to meet the energy needs of the region whilst still meeting the prime objectives of Powerlink's supply and network security. The P.A.G.E. proposal however, has not been properly assessed by Powerlink. At the date of writing, the project has not yet been forwarded to the Minister responsible to seek CID (Community Infrastructure Designation).

We applaud the Australian Government for their decision to hold a senate inquiry to investigate this vital and urgent matter. We ask the Senate Standing Committee to consider our submission relating to the status, health and sustainability of Australia's koala, and we are hopeful that the information contained in this presentation will in some way to assist the Committee in arriving at a satisfactory outcome for our iconic species.

TABLE OF CONTENTS

The Purpose of This Submission

The primary purpose of this submission is to bring to the Committee's attention the current *status quo* of how infrastructure proponents conduct their business when planning new infrastructure projects, and how their projects can severely impact on our already dwindling wildlife, in particular, the koala (*phascolarctos cinereus*).

Whilst our submission makes specific reference to a current project by Powerlink Qld. (to duplicate the 275kV transmission line from Woolooga to Ridgewood, with a new substation at Eerwah Vale) it nevertheless is applicable to any new infrastructure project which involves the acquisition of hitherto un-impacted land.

This submission will demonstrate how infrastructure proponents (such as Powerlink) and/or developers generally adopt the *business as usual* approach and will undertake the least amount of field studies and/or detailed investigations in order to achieve the project's objectives, whilst abiding by whatever regulations are in force at that time.

The specifics of the case referred to in this submission would suggest that the proposed clearing of 60-metre wide tracks of old-growth forest and numerous 8-metre wide paths for access tracks through established forests and farmland is at odds with the State Government's stated aim that infrastructure projects should "*protect and enhance koala conservation values*".

Whilst acknowledging the need that additional infrastructure is required in a growing society, a change in the way these infrastructure proponents do business is necessary if we are to protect the existing eco-systems and wildlife whilst they still remain. There is a moral obligation as well as a legal obligation.

When more sustainable, less environmentally impacting solutions are available and presented to companies such as Powerlink, and provided these alternative solutions are supported by factual evidence, there should be a mechanism in place to allow for a genuine independent assessment. Such assessment must be supported by sufficient (legislative?) powers to enforce protection for the koala and its habitat.

During the last 4½ years, P.A.G.E. has actively sought to present a viable, less impacting and vastly cheaper alternative to Powerlink's preferred route, whilst providing and maintaining the necessary protection of our iconic koala species.

Recommendation for Consideration by the Committee

1. To read this submission and its embedded links and to take from it any relevant information to add to the Committee's bank of knowledge.
2. To ask the author for additional information arising from reading this submission.

Current Koala Protection in Queensland

The Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006–2016 (the Koala Plan) came into effect on 2 October 2006, which defined what development and constraints could occur in Urban Koala Areas and in Koala Sustainability Areas, in the South East Queensland Regional Plan 2005-2026.

One of the main purposes of the Koala Plan is to promote future land use and development that is compatible with the survival of koala populations in the wild.

The State Government Department of Environment and Resource Management, DERM, is charged with the responsibility for assessing development in Koala Conservation Areas and Koala Sustainability Areas against a set of koala conservation criteria. DERM is currently developing policies, guidelines and information sheets that will provide detailed information about the development assessment process. In the interim, DERM relies on the draft *South East Queensland Koala State Planning Regulatory Provisions* which came into effect on 12 December 2008.

DERM is also responsible for the koala habitat mapping, commissioned in 2009 by the Queensland Government, at an estimated cost of $2 million.

Recommendation for Consideration by the Committee

1. To acquaint the reader(s) of this submission of the current Koala Plan in Queensland.
2. To develop stronger powers for governments to ensure future land use and development is truly compatible with the koala's survival.

Inadequacy of Current Koala Counting Methods

The koala habitat mapping exercise performed by DERM, has not adequately or sufficiently mapped certain areas of land, both private and state owned. Many areas were "simply" mapped using desktop spatial techniques only. Typically, this technique looks at satellite images of approx. 25,000:1 scale. No physical site surveys are conducted in desktop spatial study areas. As the

objective of this mapping exercise project was to produce a map that identified and ranked koala habitat in SEQ, it is important to recognise that the Project did not attempt to identify *actual* koala distribution in the region, nor did it attempt to predict koala abundance.

Chief among P.A.G.E.'s criticisms has been the methodology employed in this mapping project - which relied on the remote digital analysis of aerial image pixels (pertaining to tree colour). Even the consultants responsible for the delivery of the project to DERM, GHD, claim it recommended comprehensive ground 'truthing' (field verification of koala habitation), and that this was not conducted to the extent required (only randomly). It seems unlikely truthing occurred in Eerwah Vale and Ridgewood areas.

Using desktop spatial studies and other data, DERM classified *Koala Habitat Areas* into *Koala Conservation* areas, *Koala Sustainability* areas and *Urban Koala* areas. On the surface, these results appear to represent an adequate picture of koala population in SEQ. But as the reader will soon discover, this is not necessarily the case.

The variability in koala habitat modelling predictions is reinforced by the range of combinations of environmental variables that are identified in the various studies as being of fundamental importance in determining habitat utilisation. Desktop spatial studies tend to ignore these variabilities. Moreover, landscape context and presence of preferred tree species are consistently of high importance in predicting koala habitat usage. Again, desktop spatial studies cannot include this vital information.

A habitat model based on existing sighting data and landscape feature relationships, as well as the abundance or otherwise of koala scratch trees, is a preferred model to rank habitat across given areas. Especially in those areas planned for any sort of development.

In instances where an area is planned for new infrastructure or other development, and it has been 'mapped' using desktop spatial studies only (that is, no field studies undertaken), inaccuracies are bound to occur, ultimately to the detriment of the koala.

There are other sources of data available that can hone-in to Google-mapped areas. http://koaladiaries.com.au/ is one such data source. Koala Diaries is a community-based initiative that employs world-leading GIS technology in crowd-sourcing and displaying data with respect to the whereabouts of koalas and the general condition of these individuals. The collected data is freely available to all stakeholders in the hope that more informed and collaborative koala policies, urban development and infrastructure decisions can be made.

Recommendation for Consideration by the Committee

1. Develop an appropriate standard of methods for counting koala
2. Include 'truthing' as part of any standard method of counting
3. Have the chosen method debated in the scientific community
4. Use the developed standard in (1) across all states

Infrastructure Proponents and Their Work-arounds

Using desktop spatial studies and other data, DERM classifies Koala Habitat Areas into *Koala Conservation* Areas, *Koala Sustainability* Areas and *Urban Koala* Areas. On the surface, these results appear to represent an adequate picture. When other instrumentalities such as Powerlink request koala population numbers for a particular area to determine if a planned project would impinge on a sensitive koala habitat, the koala habitat areas are further broken down into sub-categories of Low, Low to Medium, Medium, Medium to High, and High.

For ease of reference, DERM broadly categorises these koala habitat areas into sub-categories of Low, Low to Medium, Medium, Medium to High, and High. Definition of these sub-categories probably do exist, but are extremely difficult to find, even on DERM's website. The author could not find any definition of these sub-categories.

Although Parsons Brinckerhoff, Powerlink's own environmental consultants, actually sighted koalas in their extremely limited field assessments, Powerlink relied totally upon the desktop spatial data only (from DERM). Using the 'low to medium' definition of koala habitat, Powerlink was able to make statements such as: "*The final EIS confirms that the final alignment and substation proposed by Powerlink for the project is the best option based on all relevant environmental, social and cost factors and concludes that there are no social, environmental or cultural heritage issues that would prevent the project from proceeding*."

This is despite P.A.G.E.'s demonstrated records of actual koala sightings, evidence of koala scratch trees, with photographs and GPS records. P.A.G.E. therefore naturally disputes this claim.

Whilst it is acknowledged that Powerlink Qld has followed the guidelines established by the Queensland government for planning infrastructure routes, it nevertheless relies on the DERM data to provide crucial decision making pertaining to the koala habitat and population.

This is where this system falls down. A total review of government guidelines must be an urgent and necessary outcome by the Committee should the koala stand any chance of survival.

Using the information from DERM, Powerlink then weigh up the pros and cons of proceeding through a given koala habitat area, and in cases of "low to medium" definitions, Powerlink believe they can simply mitigate by lopping mature trees, increase tower heights to over-span the canopy, and where necessary, marginally shift the tower position. These mitigation measures do little to protect the habitat. Tree lopping is a short-term 'quick fix', as the eucalypts will continue to grow. Once the tree height enters the minimum clearance distance, the tree will be removed as it is unsafe to work immediately under high voltage conductors. Ditto for increasing tower heights.

Recommendation for Consideration by the Committee

1. Conduct an audit/review of governments' guidelines which are used by developers
2. Develop a national standard with input from each state/territory

Recent History of the Koala in Eerwah Vale & Ridgewood

Many of the landholders, past and present, have had a healthy respect for both their land and the environment. Many of these landholders have allowed wildlife corridors to develop over many years in an attempt to allow nature to return to a balanced eco-system. Others, like the author, have entered into joint revegetation programmes to restore a natural balance to the farming land that no longer is used for productive purposes.

Many, if not most, landholders in the Eerwah Vale and Ridgewood areas are proud partners in the "Land for Wildlife" programme. Land for Wildlife (LFW) is a unique, voluntary programme which provides resources to private land holders and community groups managing land with existing wildlife habitat, as well as to those working hard to re-establish habitat through revegetation and restoration projects. The LFW program operates with assistance and cooperation of the SEQ Catchments, Greening Australia and local governments.

Many of these landholders are resolute to see the wildlife returning to and enhancing their area, and most have kept photographic records of visiting koalas and other wildlife.

The end result of such private and cooperative efforts has seen a koala population which differentiates itself by being one of the few koala populations in Queensland seemingly not affected by disease. Part of the reason why this population is seemingly more healthy is the comparative isolation of these wildlife corridors in the Eerwah Vale and Ridgewood area, being

away from roads and suburbia – with all the hazards that suburbia presents (dogs, cats, cars, artificial trees [i.e. power poles]). In short, these corridors are returning to the way that nature intended.

The assertion that this local koala population is seemingly free of disease stems from observation of the animals, and closely examining the photographs of individual animals. There are none of the usual telltale signs of Chlamydia or conjunctivitis, and the animals appear to be generally healthy and robust.

Diseases in koala manifests in times of stress, such as happens when habitat is reduced. The weaker animals succumb to the disease, become sick, infertile or die, leaving only the genetically stronger animals to continue breeding.

Recommendation for Consideration by the Committee

1. Investigate ways to expand and/or promote programmes such as Land For Wildlife

Local Knowledge and Anecdotal Evidence

Koalas in the Eerwah Vale and Ridgewood areas have been sighted on and off over many years. Some of the longer-term landholders report seeing koala on a regular basis, as only people in tune with their environment can readily do. However, the period from September to March is a time of increased activity within the koala population, notably the sound levels increase as males bellow more frequently during the breeding season. This is also when the young from the previous year are weaning from their mothers.

When severe weather events occur, such as the mini cyclone in December 2006, koalas are displaced from their usual territory, as many of their feed or roost trees are severely damaged or lost. However, the koala can adapt to natural fragmentation events such as cyclones far more easily than that created by man such as the clearing of old growth forest with its diversity of suitable koala trees.

Since 2007 when Powerlink first announced its intention to cut a swathe through the pristine wildlife corridors on private land, a couple of Ridgewood residents chose to undertake university degrees in Environmental Science. Their decision was largely influenced by becoming actively involved in the environmental issues in the "fight" against the impost by Powerlink. Since that time, one of these residents has since graduated with her degree and is currently doing a post-graduate doctorate in environmental studies; the other is doing her Environmental Science degree part-time. These people are actively involved in providing evidence and data on the local koala population, using widely accepted methodologies. Field studies are conducted on a regular basis

to gather data using approved data collection methods (transects, camera traps and scat collection and identification and scratch trees).

Recommendation for Consideration by the Committee

1. Consider ways for local communities to become actively involved in known koala areas

The Koala Community and Habitat

Koalas live in societies, just like humans, so they need to be able to come into contact with other koalas. It is because of this they need to have areas of suitable eucalypt forest which are large enough to support a healthy koala population and to allow for expansion by maturing young koalas. Koalas are highly territorial and in stable breeding groups, with individual members of koala society maintaining their own "home range" areas.

A 'home range' consists of a number of 'home range trees' and 'food trees' which comprise the long-term territory of the individual koala, and may cover many hectares. These trees provide the koala with food, shelter and places for social contact which will support it for the term of its natural life (assuming there is no habitat clearing).

A home range varies in size depending on the habitat quality of bushland. Habitat quality can be measured in terms of the density of key food trees. "Home range trees" define the boundaries of the individual koala's home range and can be likened to surveyor's pegs marking the extent of a property. They are not always apparent to the human eye, but koalas can tell whether a tree 'belongs' to another koala or not. Within a socially stable group, the home ranges of individual koalas overlap with those of its neighbours. It is in the shared, overlapping trees that the majority of social interaction takes place. Although difficult for humans to identify, these are very important trees.

Koala populations only occur if suitable habitat is available and because Koala's are very fussy eaters and have strong preferences for different types of gum-leaves, the most important factor which make habitats suitable is the presence of tree species preferred by koalas (usually eucalypts, but also some non-eucalypts), growing in particular associations on suitable soils with adequate rainfall.

In Australia there are over 600 types of eucalypts, but koalas will only eat 40-50 varieties with only about 10 being preferred. Within a particular area, as few as one, and generally no more than two or three species of eucalypt will be regularly browsed while a variety of other species, including some non-eucalypts, appear to be browsed occasionally or used for just sitting or sleeping in.

The appropriateness then of performing only desktop studies to determine koala population quickly fades into insignificance.

Recommendation for Consideration by the Committee

1. Include in primary school curricular instructive information about the koala to raise awareness when children are rapidly developing their knowledge.

Land Clearing, Habitat Loss and other Factors

In our particular case, koala habitat loss is not just confined to the proposed 60 metre wide easement for the transmission towers and conductors. Although, this in itself is some 51 hectares.

In addition to this 8.5 km 60m wide easement, Powerlink have advised they will acquire an additional 9 km of private land for 8 metre wide access tracks, representing another 7.2 hectares. The reason for these access tracks is so Powerlink can actually *access* each tower site. The topography and terrain is extremely steep and largely inaccessible in their planned alignment. Construction crews will have to walk in to each tower site, with helicopters being used to transport in tools, building materials, form-work, cement etc., and ultimately also being used to string the conductors (wires).

The noise and vibrations with the constant helicopter usage immediately above the prime koala habitat, will be certain to have a detrimental impact on the resident koala population.
But there are many additional factors contributing to the habitat loss in these wildlife corridors. Outside the 60 metre wide easement, tall, mature trees will be required to be felled so as to protect the network from falling trees and branches during high wind events.

With the tree felling and removal of other vegetation, the easement will allow sunlight in which previously was blocked by the mature tree canopy. This process is known as the Edge Effect. Environmental scientists advise this will allow exotic weed infestation and in turn will allow more predatory animals into the easement area. This could be devastating to the koala population as currently there are few predatory animals in their habitat area.

As previously mentioned, any tree which has been lopped (to allow the transmission lines to be above the canopy) will continue to grow and ultimately pose a danger to the network. Powerlink will have no other option but to remove theses mature trees. Likewise, land management under high voltage power lines usually means the removal of all vegetation on a regular basis. It is hard to believe that this Powerlink project would be the only one that allows vegetation to grow under the conductors.

Even assuming that Powerlink will allow vegetation to remain, any koala who spends a goodly portion of its time under 275,000 volts, will surely succumb to a range of unnatural diseases caused by Electro-Magnetic Fields (EMF's). Alarming statistics from researchers in this field of

study report a 5-fold increase in childhood leukaemia for children growing up in close proximity of high voltage powerlines. No such studies have been conducted on the koala.

Powerlink have stated they intend to mitigate the loss of mature koala trees by planting five (5) tube stock trees for every mature tree that will be removed, or, pay an equivalent dollar value. They neglect to mention how the koala will survive the transition period of the 15 to 20 years or so between putting tube stock in a forest (probably with a high mortality rate) and the tree becoming part of the koala's source tree network. How this money will be spent is also not described.

Recommendation for Consideration by the Committee

1. Ensure a national standard exists for all development projects
2. When any development organisations present a plan which seriously impacts established wildlife corridors, an appropriate independent adjudicator can be appointed to assess the potential damage to koala habitats/corridor.

The Effect of Climate Change on the Koala and its Habitat

The effect of future climate change on the koala and its habitat is another worrying concern for P.A.G.E. Whilst there is some debate in the scientific and political communities as to whether climate change is real or not, an increasing body of observations gives a collective picture of a warming world and other changes in the climate system. On balance, the scientific consensus is that anthropogenic global warming is occurring.

Most of the observed temperature increases since the middle of the 20th century has been caused by increasing concentrations of greenhouse gases, which result from human activity such as the burning of fossil fuel – especially from coal-fired generators – and deforestation. Land areas also tend to warm faster than ocean areas and the winter months have warmed faster than summer months, further exacerbating the climate change *impact* on the koala.

With the shrinkage of good quality (old growth) habitat in SEQ, particularly in areas earmarked for development, safe koala habitats will play an increasingly important role for the survival of the koala. It is vital for existing habitats to remain as a safe refuge to prevent their fragmentation, reduction in their range, or worse case scenario, their extinction.

The existing wildlife corridors in the Eerwah Vale and Ridgewood areas of the Sunshine Coast Hinterland can easily provide such a refuge, and in so doing provide a buffer against future climate change. In old growth forests, the koala can be somewhat shielded from rising temperatures. Of course the caveat is that these pristine habitats areas remain intact.

Research and climate change modelling from within the scientific and academic communities are key in providing governments with tools to support decision-making processes essential for koala and its habitat conservation.

Summary and Conclusion

Firstly, I am grateful for the opportunity to present this submission for the Committee's consideration. I would be happy to discuss any of the issues raised in this submission with the Committee at a suitable time. My contact details are at the end of page 2 of this submission.

I expect this Senate Standing Committee, its conclusions and its recommendations, will be adopted and implemented by the Australian Government and I also hope that these outcomes will be imminent. Our iconic koala is declining in numbers at an alarming rate, and if our children, and our children's children are to see this beautiful animal in its natural habitat, action is required immediately.

In conclusion, I would like to draw the Committee's attention to the fate of another Australian species, the Tasmanian Tiger (*Thylacinus cynocephalus)*. This animal became **extinct** in the 20th century largely due to inaction of the government of the day. It was ultimately declared 'protected' after the last surviving animal had died. Please don't let the koala go the same way as the Tasmanian Tiger...