



4 April 2011

Submission to Queensland Floods Commission of Inquiry

Commissions of Inquiry Act 1950

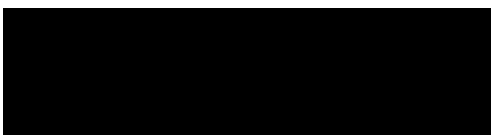
Issues addressed in this submission:

X	protection of life, private and public property
X	measures to manage the supply of essential services
X	land use planning

Particular Region addressed in this submission:

The Logan River bioregional corridor is the particular subject of this submission, however many of the issues raised are expected to be relevant to statewide, high voltage power line planning in other regions.

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for

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Preface

South East Queensland is faced with a unique set of circumstances that require unique solutions. The region is the fastest growing in Australia and with growth comes challenges. Future development requires careful planning particularly in light of the devastation caused by recent flood events throughout the State. We therefore express our utmost concern regarding a current Energex proposal to establish a high voltage (110kV) power line along the Logan River and the adjacent flood plain. This proposal requires the provision of 28 concrete poles mounted on 70 tonne concrete pedestal blocks, along 6 kilometres of the Logan River, with 5 river crossings and a 40 metre cleared easement.

The Loganlea to Jimboomba network upgrade has been dogged by controversy since Energex announced the proposal in 2008. The recently released CARDNO report (funded by the Logan City Council) highlights planning process flaws and questions the basis for nominating the Logan River route as Energex's preferred option. Energex's proposal is based upon questionable data, limited flood modelling and fails to comply with State Government Planning Policy and Climate Ready Infrastructure requirements.

The CARDNO report supports community claims that better, cheaper, safer, less invasive alternatives are possible where essential service infrastructure is not put at risk from flooding.

VETO has pursued these issues with Energex, Local, State and Federal politicians, many Government Ministers, Environmentalists and Industry experts and has gained considerable support from all levels of Government as well as all political parties. In addition, "off the record" key Energex personnel have stated their concerns with the proposal.

We are of the firm belief that the Loganlea to Jimboomba network upgrade via the Logan River is fundamentally flawed, does not exemplify best practices when it comes to infrastructure designation and planning, will put essential electricity services at risk and potentially threaten the safety of our community, Energex workers and Emergency Services personnel.

Despite these concerns, political pressure and the demonstrated impact of recent flood events on similar essential services infrastructure, Energex are persisting with their proposal. With this proposal now submitted to the Minister, Hon. Stephen Roberston MP for Community Infrastructure Designation of the easement.

Within the terms of the Commission of Inquiry, we respectfully request that you review the implications of this proposal to construct new essential services infrastructure within the Logan River floodplain. Especially as this river has a history of major floods and is expected to experience future severe weather events.

"When we know better, we do better... there is no room for complacency when it comes to community safety and minimizing the impact of floods on essential infrastructure."

Laurie Koranski
VETO Spokesperson.

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Appendix B – Minister’s Letter

Appendix C – Proposed Power Pole Design

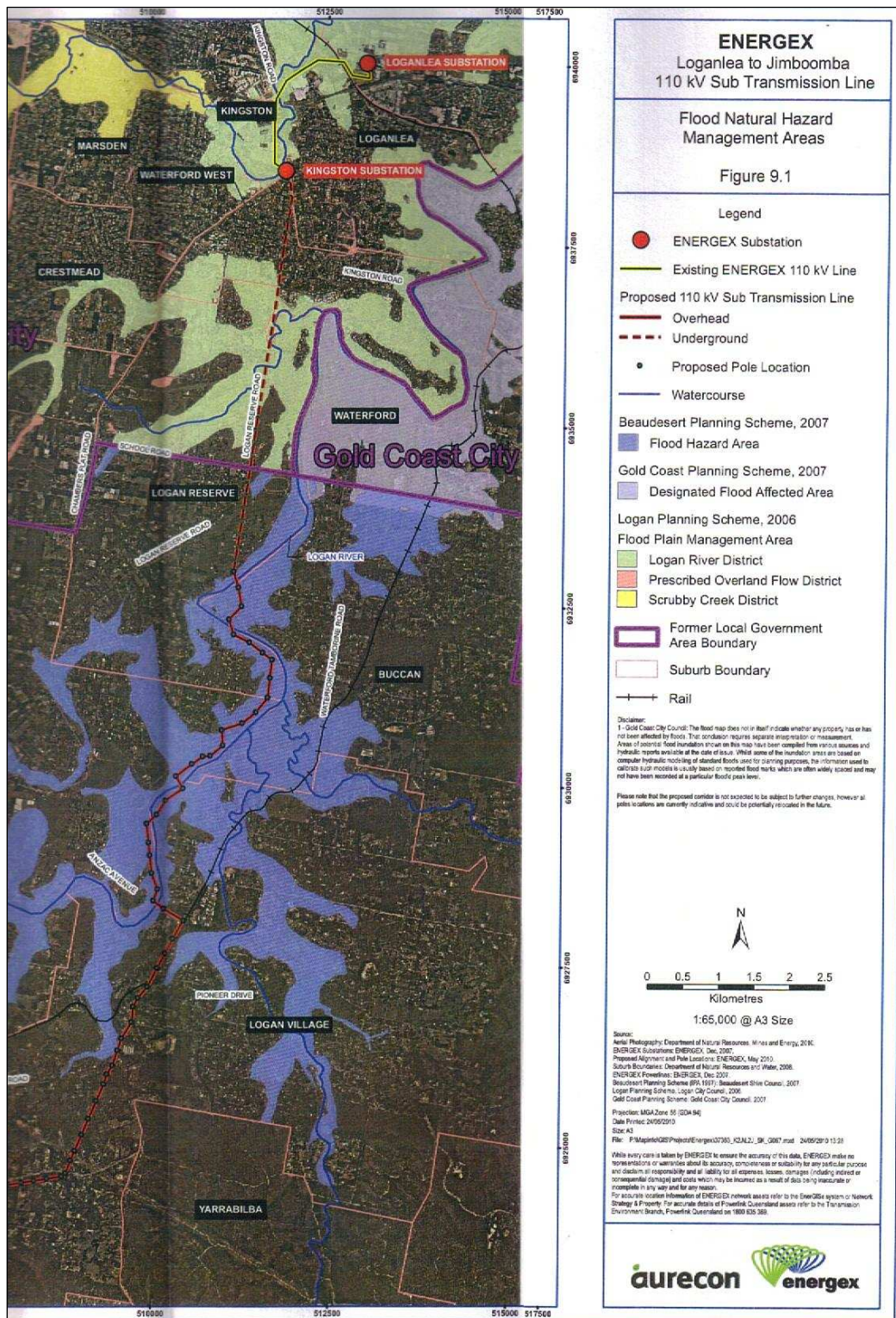
Appendix D – Flood News Articles

Appendix E – Logan River Tinnie Trail (extract)

1. Introduction

VETO (Veto Energex Towers Organisation, www.VETO.org.au) is a community organization that was formed in 2008 in response to the Energex proposal to turn the already fragile Logan River valley into a power line easement, clear 42.5 hectares of Logan koala habitat, and destroy the amenity and property values of local residents.

Specifically VETO oppose the Energex proposal to construct a second 110kV sub-transmission powerline line from Loganlea to Jimboomba (shown in figure 1), where this second 23 km powerline requires a 40 metre cleared easement through the Logan River bioregional corridor with 5 crossings of the Logan River within 6 kilometers.



Based on responses from Energex, purposely following the Logan River with 28 poles to be located within the Logan River Q100 floodplain, is without precedent. It is also contrary to State Planning Policy (1/03) and the Government Climate Ready Infrastructure initiative. Recent severe flooding in Queensland and other States highlights the need for critical infrastructure (especially electrical infrastructure) to be located away from river floodplains.

Despite widespread community opposition to the proposal, including Logan City Council opposition (Appendix A) and the growing body of evidence to show there are better alternatives, Energex are continuing with the provision of this controversial line.

Energex have issued Notice of Intention to Resume letters to directly affected landowners and have sought Community Infrastructure Designation by the Minister for Energy and Water Utilities for the construction of this second 23km, high-voltage (110kV), majority overhead powerline from Loganlea to Jimboomba substation, with 5 crossings of the Logan River within 6 kms.

Lower impact, lower cost and more reliable alternatives that avoid the Logan River floodplain have been shown to be feasible, but are being ignored by Energex.

We can only hope with this inquiry into the 2011 flood impacts, that sense will prevail and the Energex proposal will be seen for what it is; inappropriate land use planning by a monopoly Government Operating Corporation and a totally inappropriate way to deliver an essential service.

2. Background

The Logan River rises in the Border Ranges, extending to the Queensland and New South Wales border with an overall catchment area of 2,940 km² and a total length of 191 km (Dept. of Natural Resources and Mines 2002).

The report '*Logan River and Tributaries River Habitat and Process Study*' commissioned by the Department of Natural Resources and Mines (DNRM 2002), states as its first conclusion: "*Flow and sediment processes in the Logan River catchment can be described as "extreme". With the indices of flood variability indicating that it is dynamic by Australian and World standards*".

Major floods have been recorded for the Logan River in 1887, 1893, 1931, 1947, 1974 and 1991 (Dept. of Natural Resources and Mines 2002). The book '*Logan River Tinnie Trail*' (Hoswells 2003) describes the significant damage caused to communities and infrastructure located along the Logan River during these major flood events. Appendix E provides an extract from this book.

In January 2011 the Logan River experienced moderate to major flood levels with many local roads cut, but our community was spared the destructive flooding that impacted so many other parts of Queensland and other States. We were lucky that a large proportion of the heavy rainfall was further west and we were fortunate that the recently plugged Wyaralong Dam (on the western, Teviot Brook part of the Logan River catchment) was able to capture 103,000 Mega Litres of water in a mere 20 days. However for future high rainfall events, it is important to realise that Wyaralong Dam was constructed for water supply and not for flood mitigation purposes, and a "full dam holds no (more) water!"

3. Flood Issues

Energex contracted WorleyParsons to investigate the flooding constraints for the purpose of assessing and providing information on the depth and velocity of floodwaters along the corridor to enable the power poles to be designed to resist flood and debris loads (WorleyParsons 2009).

The WorleyParsons report reviewed historical flood events and predicted flood behaviour for flood events up to the 100 years Average Reoccurrence Interval (ARI) design event. WorleyParsons states that the flood model is based upon information from two flood events, January 1974 and April 1990. However, the report later states that, just 1974 flood data was used. Furthermore, the flood information available and included in the report by WorleyParsons was limited to just peak flood levels and the approximate extent of inundation with no data on actual flood discharges or flow velocities.

The WorleyParsons report concludes that: *“The average depth of flood waters was estimated to be approximately 4.5m, with the maximum depth being estimated to be approximately 8.0m. The average velocity of floodwaters was estimated to be approximately 1.1m/s with the maximum velocity being approximately 2.3m/s.”*

The report also states that flow velocities greater than 0.5-0.6m/s increasingly pose a threat as a result of the infrastructure. The modelling determined that flow rates at the location of the infrastructure were likely to be in excess of this and up to an average of 2.1m/s; which is significantly higher than the safe maximum of 0.6m/s, thereby posing a significant erosion threat.

WorleyParsons states the outcome of this as *“the risk of erosion or scour along the proposed corridor is significant for the alluvial soils on the Logan River floodplain.”* The expected outcome of this is a scour depth of 1m at the base of the infrastructure that is located on the floodplain of the Logan River and inserted into the ground to a typical depth of only 4-5 metres.

It must also be noted that in spite of Energex including the WorleyParsons report in their Final Initial Assessment Report [FIAR] as “Appendix E – Engineering Report”, the WorleyParsons report is actually a flooding constraints report, that only assessed the effect of potential floods scouring the ground on the downside of the poles. It is not an engineering report on the suitability or the integrity of the structures and does not account for the risk of large flood borne debris (as shown in Figure 2) striking the powerline poles.



Figure 2 - Typical large tree debris on the Logan River that could pose a strike threat to infrastructure if carried by flood waters. Note the person standing to the right of this tree.

Nor does the WorleyParsons report consider the impact of topographical features. Particularly the Natalie Road cliff which is known to dam the river flow during high tides, then funnel high current flow during tide changes. Higher river flow velocities have been observed here, than those predicted by the Worley Parsons modeling, but despite community advice, this is the location where Energex propose to locate 4 of the concrete power poles in line with the high flood currents. Figure 3 (next page) shows the proposed powerline with these four vulnerable poles at this location, relative to the existing Q100 flood level.



Figure 3 – Energex map showing the proposed powerline at crossings 1 and 2, the Q100 flood level and the proposed 4 concrete power poles in line with the Natalie Road cliff, which is a known high flood current section of the river.

Recent advice from the Minister (Appendix B) indicates that Energex have advised “that it can construct and operate the powerline safely,,,” and that the poles potentially located within the flood plain of the Logan River will be engineered to withstand flood waters and includes scour protection measures.” We understand that this involves mounting the poles on large, 70 tonne concrete pedestal blocks (refer Appendix C). Not only was the impact of this type of construction on the fragile Logan River valley not adequately considered in earlier environmental assessment reports, this “engineered fix” does not solve the issue of maintaining this essential service or the

risks to residents and emergency workers coming in contact with this powerline during flood events.

The DNRM Logan River report (2002) further states: *“Catchment hydrology also appears to have changed, with higher flood levels now reported for less unit rainfall, with possible causes including higher runoff coefficients, greater channel resistance, faster times of concentration of runoff, and a smaller channel or elevated bed levels due to sedimentation.”*

For all the recorded major floods within the Logan River, the highest flood levels on record occurred during the 1887 flood even though it is likely that more rainfall occurred in the 1974 floods (DNRM 2002). Available rainfall data from Beenleigh (Bureau of Meteorology records) indicate much less rainfall occurred during the 1887 flood than for the 1974 but, as noted in antecedent records, the conditions in 1887 were much drier, potentially suggesting that due to the dry conditions the runoff coefficient was greater resulting in more flood water for less rainfall, or in other words that the river channel conditions were significantly different between the events.

The effect of the runoff coefficient is evident within the recent historical data set with the DNRM report (2002) also concluding that the quantity of runoff produced for the amount of rainfall within the catchment is variable, resulting in highly variable inter-year outflows. It should be noted that these are the type of conditions expected in climate change predictions for South-east Queensland; longer droughts interspersed with more severe rainfall events.

State Planning Policy 1/03 4.6 states: *“The Queensland Greenhouse Policy Framework acknowledges the growing scientific consensus that the enhanced greenhouse effect is changing the world’s climate, and that Queensland will be vulnerable to the effects of climate change. Predicted changes include reductions in annual rainfall but increases in rainfall intensity, sea level and coastal erosion, bushfire risk, flood risk and damage to transport infrastructure and low lying human settlements. The nature of these changes will vary across Queensland. These changes will have significant impacts on the nature and extent of natural hazards and, consistent with the precautionary principle, should be considered when undertaking natural hazard assessments or developing natural hazard mitigation strategies.”*

State Planning Policy 1/03 Outcome 1: advises that: *“[the development within a Natural Hazard zone is compatible with approval when] there is an overriding need for the development in the public interest, **and no other site is available**”* – however Logan City Council and the Cardno Report have clearly shown that **there are better alternatives**, that do not require development in natural hazard zones.

Energex claim that the construction and structure of the power poles is consistent with what is expected for structures built within river flood plains (e.g. bridges). However, even bridges commonly fail under flood waters. When assessing the need and associated risk of locating structures within river flood levels, the function of a bridge usually means it needs to be co-located with a river; while high voltage powerlines do not.

State Planning Policy 1/03 Outcome 2: requires *“Development [that] minimizes as far as practicable the adverse impacts from natural hazards; and does not result in an unacceptable risk to people of property.”* – Energex claim that mounting the power poles on large concrete pedestals (described in Appendix C) will minimize the impact of floods, but have not considered the increased risks that these large obstacles located in the river and connected by power cables, will pose to residents, repair workers and Emergency Services personnel during a major flood event.

State Planning Policy 1/03 Outcome 3: requires *“Wherever practicable, community infrastructure [to be] located and designed to function effectively **during and immediately after natural hazard events commensurate with a specific level of risk.**”* – however access to the river flood plain is extremely difficult during the wet season let alone during flood events, thereby limiting access for equipment on the flood plain to repair any damaged infrastructure, placing repair staff at risk and causing delays for service restoration. The widespread impacts

and difficulties in restoring high voltage services would be similar to those experienced during the recent floods and described in the media articles included in Appendix D.

State Planning Policy 1/03 4.7 states: *“Inappropriate development in areas susceptible to natural hazards significantly increases the risks (and associated costs) to the community. This SPP aims to minimise these risks by ensuring that the potential adverse impacts of natural hazards are adequately considered when development applications are assessed, when planning schemes are made or amended and when land is designated for community infrastructure.”*

Furthermore SPP 1/03 Policy 6.11 states: *“Determining an overriding need in the public interest will depend on the circumstances of the particular development proposal. The proposal should result in a significant overall benefit to the whole or a significant part of the community in social, economic or environmental terms that outweighs the adverse impacts arising from the development’s exposure to natural hazards. Also, the development application **should demonstrate that a similar benefit could not be achieved by developing other suitable and reasonably available sites.**”*

South-east Queensland is a region that has been identified as being highly vulnerable to the impacts of climate change (IPCC, 2007). The predicted changes in climate are expected to result in increased severity of extreme weather events including longer deeper droughts, interspersed by more severe rainfall and flooding events. Due to the long life expectancy of infrastructure developments, decisions regarding the suitability to the effects of climate change have to be pre-emptive and a precautionary principle is advised. The Queensland Government has initiated key policies to safeguard the potential effects of extreme weather events that are likely to be more common under climate change scenarios throughout the region. The South-east Queensland Regional Plan addresses the issue of climate change with policies aimed at building community resilience by avoiding vulnerable development in hazardous areas.

SEQ Regional Plan (1.4 Natural hazards and Climate Change adaptation) Principle states:- *Increase the resilience of communities, development, essential infrastructure, natural environments and economic sectors to natural hazards including the projected effects of climate change.*

With Policy 1.4.1 being: *Reduce the risk from natural hazards, including the projected effects of climate change, by avoiding areas with high exposure and establishing adaptation strategies to **minimise vulnerability to riverine flooding**, storm tide or sea level rise inundation, coastal erosion, bushfires and landslides.*

However the location of the proposed powerline infrastructure within the Logan River flood-plain (which has a current ‘extreme’ rating for flow variability), does not adopt this precautionary approach to the potential effects of climate change.

As well, the Energex powerline proposal does not establish an overriding need for the development in the public interest, because it is now clear there are better alternatives that can be established at equivalent or lower cost, with significantly lower social and environmental impacts, without incurring the risks of infrastructure development in the Logan River natural hazard zone.

4. Land Use Planning

Current uses for the land that Energex propose to resume for the 40 metre wide, cleared powerline easement along the Logan River, includes recreation parkland, conservation areas, small rural businesses (operating warm blood horse breeding, horse agistment, cattle fattening and irrigated farm businesses). The river provides good quality agricultural land (GQAL) ideally suited for these activities. These activities can accommodate the regular flooding of the river and the changes in the river banks that occur during and after floods. These activities have also become sensitive to the river environment, valuing the riparian vegetation along the banks and working to minimise their impact on the river, particularly sediment inflows.

The proposed powerline and cleared easement will negatively impact on the operation of all these activities. In particular, the perceived business value (especially for quality horse breeding and agistment), the operation of irrigators, the location of electric fencing and electric access gates etc. The 40 metre cleared easement also places restrictions on the future use and development of recreation parks and facilities along the river when this river is such a valuable and unique Logan community asset that will become more valuable as the population in our area increases.

This proposal to permanently locate 28 concrete power poles within the river floodplain mounted on 70 tonne concrete pedestals completely ignores the dynamic nature of this river environment, the reactive clay soils, the scouring and the often dramatic relocation of bank materials and changes in vegetation that occur with each flood.

No doubt the powerline planners believe they can provide “engineered fixes”, but we believe they are under-estimating the impact of their proposal on this fragile river environment, with fragmentation of habitat, increased sedimentation, restrictions on land use, difficulties of accessing the powerline and the ongoing costs to maintain this essential service infrastructure.

Purposely locating this high voltage powerline along the Logan River is poor land use planning, because river floodplains are more valuable and suitable for habitat conservation, recreation and farming. The proposal is high impact for our community, devalues the Logan River environment. It is also expected to be high cost to provision and maintain, but unlikely to be reliable when better alternatives exist.

Essential services like this are better co-located within existing road easements, to minimize community impact, facilitate bitumen access and maximize the utilization of these established road easements. We appreciate that this presents challenges for government agencies because it requires them to work together to plan and co-ordinate the delivery of services, when it is so much easier to grab (or designate) their own exclusive easement through a community.

With effective planning though, ducts and pipes for the provision of utility services (for underground power, communications, gas, water etc) can be incorporated into a road construction project for a relatively small incremental cost compared with the road construction cost. This approach can then deliver great benefits to a community including lower cost of delivery for essential services, but does not appear to be happening in Queensland.

By way of example, we are aware that Energex are also currently proposing an overhead high voltage powerline along the Pacific Motorway and Tugun Bypass. However with pre-planning, ducts could have been pre-provisioned with this major road construction project to facilitate the provision of underground powerlines. Surely Energex knew they would need powerlines along this route (for interstate interconnect) when these main roads were being planned?

Similarly for the Loganlea to Jimbooma powerline, Energex have advised that it is easier to locate the powerline as overhead through residential properties, parallel with Camp Cable Road, than it is to construct it as underground or even overhead within the wide Camp Cable Road easement. Because Main Roads have not defined the edge of the road easement for the expected dual carriage upgrade along this road. Yet recently, we observed Allconnex construct an underground water pipeline along Camp Cable Road. With these and other examples, we can only ask where is the inter-Agency planning and co-ordination, are these Agencies working to benefit themselves or the communities they are meant to serve ?

Our region has been targeted for growth, with two ULDA high growth communities at Greater Flagstone and Yarrabilba announced in October 2010. While these are expected to be master planned communities, what we are not seeing is any co-ordinated master planning for the provision of the services to these communities nor any mitigation for the impacts on the existing communities that surround these new high growth communities.

There is an obvious need for considerably better land use planning and co-ordinated long term planning for the provision of reliable essential services in Queensland.

5. Measures to Manage the Supply of Essential Services

So often during the 2011 floods, we heard that the electricity for homes and businesses not directly impacted by flooding was disrupted or purposely turned-off because of rising flood waters. In many cases this appears to be because this infrastructure is poorly located. We even heard that Energex staff had to evacuate the new Energex building in Newstead because supply from the Newstead substation was disrupted by the Brisbane River flood waters.

We believe this demonstrates poor long term planning for the supply of essential service infrastructure, where in many cases, planning appears to be driven by a misguided belief that land for electricity infrastructure, particularly exclusive easements, is easier to obtain in river floodplains, nature reserves and community parkland. With solutions supposedly 'engineered' to overcome the anticipated risks.

Apart from poor land use planning (previously discussed) this approach compromises the reliable supply of essential services. Appendix C provides an extract from the Energex FIAR page 9-3 where Natural hazards are considered. It describes the proposed "engineered fix" with the 28 concrete power poles located within the Logan River floodplain to be mounted on 70 tonne concrete pedestals. Apart from making the unsubstantiated claim that these poles and the high voltage powerline "development does not result in adverse impacts on people's safety or the capacity to use land within the floodplain" this document contends "The Project does not pose a risk to public safety (because) In the event of failure or damage to the powerline, automatic circuit protection engages to de-energise the line". Which poses the question, how does this manage the supply of this critical essential service, if during a flood this powerline de-energises and automatically turns itself off ?

Further claims are made that "Adequate access will be provided,,along the proposed sub-transmission line for both the emergency services and maintenance vehicles." and "These facilities can then be repaired once the natural disaster is over." which totally misses the point; that even during a moderate flood, access via local roads is cut, so safely reaching the powerline during a major flood will not be possible. Plus access for heavy equipment to repair the powerline will not be possible for many weeks after a flood event.

We do appreciate that provision of this second Loganlea to Jimboomba powerline is intended to improve the reliability of the existing F820 powerline. With F820 mostly located above the Logan River floodplain and if the proposed powerline were to fail, F820 should maintain the essential high voltage supply to Jimboomba and Beaudesert. But what if repairs to the proposed powerline took many weeks to complete? Then electricity supply to this large service area would be totally dependent on the existing F820 powerline, which Energex acknowledge is the least reliable service in their network.

Surely, we can expect considerably better measures to plan and manage the supply of this essential service, when construction of the proposed second powerline is expected to cost well in excess of \$40 million, to be paid for by Queensland electricity consumers ?

6. Alternatives

The Cardno Report commissioned by the Logan City Council demonstrates that the Energex planning process was flawed, with the Logan River route actually the least preferred option on both environmental and social grounds. This report also assessed alternatives not considered by Energex, one of which includes bringing forward provision of the substation at Yarrabilba earlier than Energex's planned timeframe of 2027.

This alternative would keep essential electricity infrastructure away from the Logan River floodplain to deliver a considerably more reliable solution (by providing a second source of bulk supply, other than just Loganlea) plus deliver greater local capacity to support future growth, with a lower (NPV) overall long run cost, without the risks of maintaining a powerline in the Logan River floodplain.

In fact the preferred option recommended by Cardno is to bring forward provision of the Yarrabilba substation and provide a relatively short (5.5km) underground 110kV powerline to Jimboomba substation (where this underground powerline is located in the Camp Cable Road easement). Ideally, provision of the roadside ducts for this underground powerline would also be best provided during the planned Camp Cable Road upgrade to a dual carriageway.

The key point for this submission though, is that there are lower impact, cost effective alternatives that could deliver a safer and better outcome for the supply of electricity for our community, than purposely locating a second Loganlea to Jimboomba 110kV powerline in the Logan River floodplain.

7. Summary

In the Final Initial Assessment Report, Energex claim that the second 110kV sub transmission line from Loganlea to Jimboomba along the Logan River is required *"to boost supply and improve the security, reliability and switching flexibility of electricity supply"* for the Jimboomba area. This report also claims *"that the proposed sub transmission line is considered essential in ensuring there is adequate electricity supply to meet energy requirements for the Queensland Housing Affordable Strategy, particularly through the suburbs of Flagstone and Yarrabilba."*

Yet this second powerline is planned to run from Loganlea (the same bulk supply substation as the existing F820 powerline) with a large proportion of this second line to be located within Flood Hazard zones.

Energex claim they can "engineer" the powerline to withstand Logan River flood waters and have used a Logan River flood modelling report to justify this claim.

As demonstrated by history and the recent 2010-2011 floods in Queensland, flooding rivers exhibit considerable force and destructive capacity. As well, widespread disruption to essential services can be caused by the need to de-energise essential power infrastructure because of faults or safety concerns, when this infrastructure is located near rising flood waters. Access to repair faults can also be delayed many weeks, when this infrastructure is located within a river flood plain.

Purposely constructing this essential service powerline along the Logan River with 5 crossings within 6kms is not in accordance with the precautionary principle recommended by State Planning Policy 1/03. Also Energex have not established an overriding need for this development in the public interest, because better alternatives do exist.

The Cardno recommended alternative of bringing forward provision of the Yarrabilba substation could cost effectively provide reliable local capacity to deliver *"adequate electricity supply to meet energy requirements for the Queensland Housing Affordable Strategy, particularly through the suburbs of Flagstone and Yarrabilba"* and avoids construction of long term essential infrastructure within the Logan River flood hazard zone.

This alternative also enables essential infrastructure to be provisioned with lower ongoing risks for our community and more reliable supply, without sacrificing development of the Logan River community asset and good quality agriculture land for a cleared 40 metre powerline easement.

We do hope the Queensland Floods Commission of Inquiry will highlight these current harmful planning practices and oblige agencies such as Energex, to truly work with Queensland communities, to deliver more reliable and safer essential services, while avoiding the need to locate them on valuable river floodplains or through remaining koala habitat.

8. References

CARDNO Final Report (2011) Proposed 110KV Line from Loganlea to Jimboomba, Review of Documents – Commissioned by and available from Logan City Council

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State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide

<http://www.emergency.qld.gov.au/publications/spp/>

VETO Submission to the Final Initial Assessment (July 2010) Prepared by Danial Stratford, Griffiths University, <http://www.veto.org.au/>

WorleyParsons. (2009) Loganlea to Jimboomba 110kV Transmission Powerline Corridor Logan River Flooding Constraints - included in the Energex Final Initial Assessment Report as Appendix E – “Engineering Report” (which it is not).



Figure 4 – Existing Loganlea to Jimboomba (F820) 110kV powerline with 1.2 kms of Logan Reserve Road flooded and restricting access during the January 2011 Logan River flood.



Cardno report on Energex power line

17 February 2011

A report reviewing a proposed additional power line from Loganlea to Jimboomba has been finalised.

The report highlights a number of discrepancies in the proposal which will ultimately come at a cost to the consumer and the local environment.

Logan City Council appointed Cardno, an experienced infrastructure planning consultancy, to review both the environmental, planning and costing aspects of Energex's proposal and to develop the alternative local substation options proposed by Council to provide a better environmental solution with the least cost to the consumer.

Logan Mayor, Pam Parker, said the report highlighted a number of flaws during the creation of Energex's proposed power line and stressed Council was committed to doing all it could to address this for the benefit of residents and the local environment.

"Cardno's report, which reviewed Energex's Corridor Selection Report has shown that the proposal is the least preferred option on both environmental and social grounds and that the methodology was flawed," she said.

"It highlights a number of flaws in the process undertaken by Energex to determine its preferred option. The current proposed option could not be justified with information provided in the Corridor Selection Report which will impact on the Logan River, residents and ultimately see the removal of more than 42 hectares of koala habitat.

"Council is strongly opposed to the proposed power line on a number of grounds, but in particular on the environmental impact it will pose. We have sought advice into an alternative option which is more cost effective and which also yields the least environmental cost.

"Our alternative options of either a substation at Yarrabilba or a tee line constructed off the Greenback to Gold Coast transmission lines to directly feed to an upgraded capacity Jimboomba substation has been assessed by Cardno with both options being more cost effective than the current project.

"Council's proposed options also meet the requirements for future electricity supply contrary to Energex's proposal which Cardno believe will fall short of the supply requirements to support the future growth of model cities such as Yarrabilba and Flagstone."

Cr Parker said proposals such as this were subject to a number of requirements by the Australian Energy Regulator (AER).

She said that additional work by Logan City Council indicated that the requirements had not been met.

"The AER requires electricity network providers to follow specific procedures when proposing new infrastructure to ensure it is the least cost option for all those who produce, transmit and consume electricity."

Cr Parker said Council's investigations suggest that this is not the case with the Energex proposal and the National Electricity Rules (NER) have not been sufficiently satisfied in the initial stages of the development of the proposal.

"It highlights that Energex failed to conduct the economic cost effectiveness analysis of options and also failed to consult with Council on the options analysis."

Environment and Sustainability Committee Chairperson Councillor Lisa Bradley (Division 1) said Council was also concerned over the increasing costs associated with Energex's proposal.

"Energex's proposal was initially reported to cost approximately \$25 million, however, this is currently listed at \$38.67 million and not all costs have been factored in," she said.

"As a result of our findings, we expect it to exceed \$40 million and we have grave concerns given that these costs are passed onto consumers."

Appendix A – Logan City Council media release

Cr Bradley said as well as releasing the Cardno report that Council had also escalated its concerns to a much wider audience.

"In December 2010, Council lodged its concerns with the AER and an investigation is now underway," she said.

"We have also addressed this situation with the Minister for Natural Resources, Mines and Energy, Stephen Robertson and have requested that he defers any further consideration of Energex's application until the AER has fully investigated Energex's potential breach of the NER.

Cr Bradley said the proposal would see 28 electricity poles located along the Logan River and highlighted if the line was damaged in storms, when the area is flooded, that access would not be possible until the flood waters receded and trucks could access it.

"Given recent disasters in Queensland, critical infrastructure such as this power line should not be deliberately placed along a major river," she said.

"It is our intention to meet with key state and federal members from across the Logan area to inform them of the dire situation our residents and environment face should Energex's proposal be given the green light."

source: <http://www.logan.qld.gov.au/about-council/news-and-publications/media-releases/media-releases/cardno-report-on-energex-power-line>



Hon Stephen Robertson MP
Member for Stretton



Minister for Natural Resources,
Mines and Energy and
Minister for Trade

MC7392
MO/11/125

03 MAR 2011

Ms Laurie Koranski
Spokesperson
Veto Energex Towers Organisation
[REDACTED]

Dear Ms Koranski

Thank you for your email of 20 January 2011 about ENERGEX Limited’s proposed Loganlea to Jimboomba sub-transmission line project and about the impact of recent flooding in Queensland.

I note your concerns regarding ENERGEX Limited’s (ENERGEX) recent request that the land required for this project be designated for community infrastructure. Ministerial designation of land is a statutory process under the provisions of the *Sustainable Planning Act 2009* (the Act).

As previously advised, when making a decision regarding ENERGEX’s request, as Minister I am required to consider a range of matters set down in the Act. This includes being satisfied that adequate environmental assessment has been carried out, that adequate public consultation has occurred and that adequate account has been taken of issues raised during the consultation process, which includes issues raised regarding the impact of the project on koala habitat and vegetation.

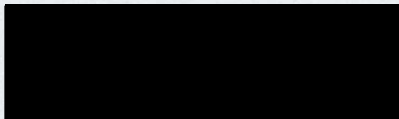
I understand that some of the proposed powerline infrastructure would be located in flood-prone land. ENERGEX advises that it can construct and operate the powerline safely and that the construction methodology proposed for the river sections of the alignment is such that poles potentially located within the flood plain of the Logan River will be engineered to withstand flood waters and includes scour protection measures.

I am advised that three opportunities were provided for public submissions to be made regarding this project. Please be assured that the issues raised in submissions and from stakeholders during these formal consultation periods, which I understand include flood impacts, will be considered when making a decision regarding whether or not to designate the land for community infrastructure.

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If you have any questions about my advice to you, Jillian Langford, Senior Project Officer, Energy Sector Monitoring of the Department of Employment, Economic Development and Innovation will be pleased to assist you and can be contacted on telephone 3239 0046.

Yours sincerely

A solid black rectangular box redacting the signature of Stephen Robertson MP.

STEPHEN ROBERTSON MP

Appendix C – Proposed Power Pole Design

Final Initial Assessment Report – Community Infrastructure Designation
Natural hazards

Pole Height 20-25m above Ground

Natural hazard	Specific outcomes	Compliance with SPP 1/03
	<p>Specific Outcome 2</p> <p>Development does not result in adverse impacts on people's safety or the capacity to use land within the floodplain</p>	<p>The support pole foundations will not impact flooding. ENERGEX will determine at the detailed design which solution will be selected to construct the poles located within the flood plain. The foundation of poles within the flood plain of the Logan River will be engineered to withstand potential flood waters and surface inundation. In a high velocity flood area, a bollard solution will be used with a "pedestal" type foundation approximately 2,000 mm in diameter. The main foundation for the pole will be designed to the height of the flood water and the concrete pole will be bolted on top of the main foundation. In total, the height to the top of the pole will remain in the range of 20 m to 25 m out of the ground. The design and placement of poles is an integrated design that includes consideration of scour protection measures.</p> <p>The Worley Parsons (2009) flood plain engineering report found that the poles can be built using standard construction to resist the loadings due to the depth and velocity of floodwaters in major flood events (refer Appendix E). <i>= Flood Constraints Report!</i></p> <p>The Project will not pose a risk to public safety. In the event of a failure or damage to the powerline, automatic circuit protection engages to de-energise the line within milliseconds of the event. The location of the powerline does not pose risks to safety with current or likely future land uses, as they will be located a safe distance from any activity that might interfere with the aerial infrastructure.</p> <p>The Project does not interfere with the ability of people to utilise the land along the floodplain. The poles are 1,200 mm wide on the floodplain and occur every 200 m to 250 m. It is considered that the poles will not impact on terrestrial habitat. Furthermore, most agricultural, pastoral and recreational activities can continue unaltered under the lines. The area of the easement does not need to be fenced.</p> <p>In the event of a flood, emergency services (SES) are located in close proximity to the Project at the following locations:</p> <ul style="list-style-type: none"> Logan Village near the junction of Hotz Road and Waterford-Tamborine Road Garfield Road, Woodridge <p>Adequate access will be provided at the substations and along the proposed sub transmission line for both the emergency services and maintenance vehicles. <i>How will they access flood locations? - how, in a flood?</i></p>
	<p>Specific Outcome 3</p> <p>Development minimises the potential damage from flooding to property on the development site</p>	<p>In the event of a natural disaster the proposed sub transmission line will be 'tripped' automatically where fire, heavy smoke or water causes arcing and a follow up current. ENERGEX can shut down their infrastructure remotely so there is no electrical risk to people.</p> <p>These facilities can then be repaired once the natural disaster is over. <i>How will this maintain this essential service? - timeframe, days or weeks.</i></p>
	<p>Specific Outcome 4</p> <p>Public safety and the environment are not adversely affected by the detrimental impacts of floodwater on hazardous materials manufactured or stored in bulk</p>	<p>The Project does not manufacture or store hazardous materials in bulk.</p>

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source: Energex FIAR page 9-3

Brisbane Times

Up to 100,000 set to lose power

Daniel Hurst

January 11, 2011 - 7:59PM

Brisbane is about to power down, with electricity set to be cut to large parts of the CBD from 7am tomorrow.

Energex announced tonight it was planning to cut power to many parts of the CBD for safety reasons, and it was also monitoring flood-affected areas in Brisbane and Ipswich.

Depending on the extent of flooding over the next few days, up to 100,000 power customers could have their electricity cut.

In a statement, Energex said electricity sub-stations were mainly located in buildings close to the Brisbane River, which was expected to reach near-record levels during the next few days.

It said crews would inspect the sub-stations after tomorrow afternoon's peak high tide to assess the amount of damage and to work out how long until power could be restored.

"Other areas in Brisbane and Ipswich are also being closely monitored by Energex to determine whether or not electricity will be turned off," the statement said.

"These areas are primarily those identified by Brisbane City Council flood mapping along the Brisbane and Bremer rivers and their tributaries.

"The outages could impact approximately 100,000 customers with restoration times dependent on the rate that floodwaters recede and the amount of damage caused to electrical equipment."

Similar cuts were made to power in Gympie earlier this week.

"No one should ever underestimate the old adage that power and water don't mix, and as water continues to rise ENERGEX will be taking a safety first approach under these extreme weather conditions," Energex spokesman Mike Swanston said.

People with medical conditions who rely on electrical-powered equipment, as well as refrigerated medications, should contact their medical practitioner to seek advice, he said.

As of 5pm, 22,000 homes and businesses were without power in southeast Queensland

One of the many media reports, on the widespread power outages caused by rising flood waters in Brisbane. Many homes and businesses lost their power supply for extended periods of time even though they were not directly impacted by the rising flood waters. Also, Energex regularly advised that "Water & Power don't mix".

Electricity Problems Following Flood

By JANE CHUDLEIGH
ToowoombaNews.com (31 Dec 2010)

POWER problems have plagued Darling Downs and Southwest residents returning home following major floods.

Floodwaters in the Condamine River near Warra brought down high-voltage powerlines supplying about 1700 customers around Tara on Wednesday (December 29).

A helicopter patrol identified the cause of the power supply interruption but crews needed a boat to restore power, making it difficult to restore electricity.

WAITING GAME. Homes in Chinchilla and Dalby were disconnected as a safety precaution while river levels peaked.

About 120 Chinchilla customers were still without power yesterday (December 30) as crews waited for floodwaters to recede before starting the restoration process.

In Dalby power has been restored to all but two council services from the 207 customers whose supply was disconnected at the height of the flooding on Tuesday.

Rising floodwaters yesterday caused crews to disconnect power to 60 properties in Warra at risk of inundation.

CUT OFF. Power was cut to 21 customers in the Wandoan area and 12 in Taroom as a safety precaution.

Power has remained on in Condamine to assist with the forced evacuation of residents but was to be disconnected once that process was completed.

RELATED STORY: [Entire Town To Be Airlifted From Floods](#)

Thirteen customers in Warwick cannot have power restored to their properties until internal work is done by a licensed electrical contractor.

Any house which has been inundated by floodwaters must be checked before power can be restored.

CHECK FIRST. Ergon Energy said it is obliged under the Electrical Safety Act to ensure the safety of its network and connections for staff and the public.

Ergon Energy will also disconnect power supply to sections of its network when rising flood waters threaten the safety of network equipment, safe clearances under powerlines for emergency services boats or inundation of customer premises.

Reports from the Toowoomba News 31 Dec 2010, describing the difficulty of restoring high voltage power lines brought down near Warra and the need to disconnect power supply when rising flood waters reduce safe clearances under power lines for emergency services boats..

1887 Floods

The optimism and prosperity of the mid 1880s were soon to be thwarted. The 1887 floods were the worst in living memory of both European and indigenous residents of the Logan and Albert Rivers.

It was estimated to be at least 20 feet higher than any previous flood, and 40 feet above its usual level. Heavy rains began falling on Thursday 20 January. Four inches of rain fell on Thursday and 10 on Friday. Seventeen inches of rain were recorded upstream at Veresdale on Saturday night. This was coupled with high winds and high tides.¹ The flood reached dangerous heights in the early hours of Saturday 22 January, though not peaking until midday Sunday with the high tide. Many families escaped early Saturday morning in their night-clothes. The devastation to life and livelihoods was enormous.

The first reports of the desperate situation came from the Beenleigh storekeeper, James Savage, who sent word with the Cobb and Co driver, Charley French, seeking relief from the Queensland Government for the distressed residents. At the same time John Burke's steamer *Fanny* also arrived in Brisbane and informed the government of the situation. Captain Burke had rescued more than 60 Albert River residents, as he had been anchored at the Yatala Hotel when the flood peaked. He also reported the deaths of some residents. (Captain Burke was later awarded with a testimonial in recognition of the bravery of himself and his crew in rescuing those residents.)²

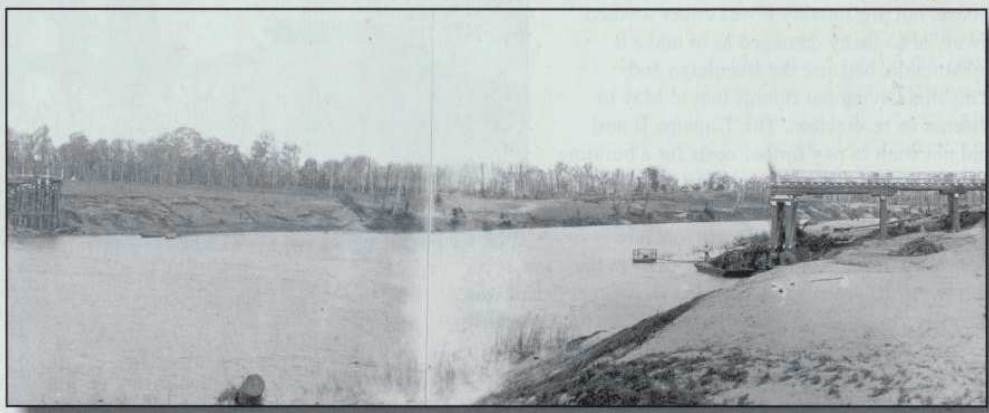
Another small steamer, *Koalo*, was despatched to the Logan to survey the damage. *Koalo* did not arrive until Wednesday and only had minimal supplies to feed the

crew. At the suggestion of passenger William Castles, of Loganholme, a couple of extra bags of flour were included. Castles had been delayed in Brisbane during the flooding and he was to guide the boat on its journey to the region. Before reaching the Logan the steamer encountered the dredge, which had been working the Albert River, adrift in Moreton Bay. Early reports indicated that the river was a mile wide at Yatala and Beenleigh and considerably wider at Loganholme and Waterford. The river also deposited huge amounts of silt in the flooding. In some areas, deposits of more than five feet of sand could be found, with the tops of the ripe cane crop peeping out of the sand.³

Slacks Creek and Loganlea farmers were also washed out, with the Armstrong, Hall and Kelk families' farms all submerged. The new railway bridge too had washed away. It had been opened in July 1885 at a cost of £12,000. It was constructed from large iron cylinder piers with six metal girders spanning 100 feet. All were gone. The approaches to the bridge on each side were washed away,

leaving the rails and sleepers suspended in mid air. Some rails were twisted into a perpendicular position. At the time of construction, this bridge was thought to be one of the finest ever built. Each pier comprised iron cylinders filled with concrete. It was not thought possible for such piers to wash away. The bridge had been built above the 1864 flood level, but the 1887 flood in this vicinity was 17 feet above that level.

The river changed significantly after this flood. An agricultural reporter from the *Queenslander* who was familiar with the river, noted that the velocity of the flood waters had taken out most of the mangroves, and what remained were dead. The banks had slipped, taking gigantic gums into the river. The pocket, now comprising Alex Clark Park, was a maze of waterholes up to 100 feet in diameter, formed by the whirlpools and scouring of the floodwaters. In some parts of this property there were up to six feet of sand deposited.⁴



Logan River rail bridge washed away January 1887 (John Oxley Library)

The Logan River has a history of destructive floods. Note that even though the 'finest' Railway bridge was built above previous flood levels it was washed away.