



Hon Stephen Robertson MP
Member for Stretton



**Queensland
Government**

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

7 JUL 2004

Mr N J Laurie
The Clerk of the Parliament
Parliament House
Alice and George Streets
Brisbane Qld 4000

Dear Mr Laurie

I refer to your letter of 18 June 2004 forwarding a copy of a Petition lodged in the Queensland Legislative Assembly, requesting the House to call on the Minister for Natural Resources, Mines and Energy to ensure that ENERGEX reconsiders its proposal to construct an overhead double circuit 110 kilovolt (kV) power line up to 30 metres high from Lytton Substation to the site of the future Fisherman Islands Substation (to be commissioned by June 2005) in the interests of public safety, and to install the powerline along a route or in a manner that does not represent a further hazard to the residents of Wynnum and Lytton.

The petition also draws attention to pollutant fallout in the Wynnum and Lytton area due to the proximity to a number of industrial facilities, and claims the proposed powerline will have detrimental health effects for residents due to pollutant particles becoming charged by the powerline and consequently having a much higher probability of sticking in the lung.

I note the concerns raised by the petitioners about the installation of an overhead powerline from Lytton Substation to the future Fishermans Island Substation.

In response to concerns from members of the community about the impact of overhead powerlines on health, visual amenity, property values and environmental issues, ENERGEX has investigated alternative options to site the proposed powerline further west of the route originally proposed in ENERGEX's route selection document released in December 2003, in order to minimise impact on local residents.

On 19 May 2004, ENERGEX advised the local community of an alternative option to construct an overhead powerline through the Lytton Industrial Estate (along Export Street), and along Port Drive to Fisherman Islands. The alternative alignment will mean residents in Constellation Way, Wynnum North will be approximately half a kilometre away from the powerline.

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The siting of the powerline in the industrial estate will avoid vegetation clearing in the green belt between the industrial estate and the residential community. The green belt bordering the industrial estate and the residential area and the increased distance between residents and the powerline will reduce the visibility of the powerline to residents in the area.

An updated information brochure advising of the alternative route, was distributed to approximately 2,700 Wynnum North residents via a letterbox drop and to people who attended an open day on 8 June 2004.

ENERGEX proposes to erect 20 metre high poles to support the double circuit 110 kV powerline. In order to allay concerns raised by community members about the visual impact of the poles, ENERGEX arranged to have two 20 metre high poles temporarily erected at proposed sites along Port Drive on 12 June 2004. Feedback from the community following the pole demonstration indicates the impact of the project on visual amenity is no longer a major issue. However, I note the community remains concerned about the possible health issues associated with overhead powerlines.

In relation to perceived health risks associated with the powerline, the Queensland Government is aware of concerns within the community regarding the possibility of adverse health effects from exposure to electromagnetic fields (EMFs). The Queensland Government relies on the opinion of expert medical review panels such as the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) rather than individual researchers for its advice on health matters.

ARPANSA is a Federal Government agency (within the portfolio of the Commonwealth Minister for Health and Ageing) charged with responsibility for protecting the health and safety of people and the environment from the harmful effects of radiation.

In its April 2002 information sheet '*The Controversy over Electromagnetic Fields and Possible Adverse Health Effects*', ARPANSA concludes: 'On balance, the scientific evidence does not indicate that exposure to 50 Hertz (Hz) EMFs found around the home, the office or near powerlines, is a hazard to human health.'

The full text of this document can be obtained on the ARPANSA website at www.arpansa.gov.au. The National Health and Medical Research Council (NHMRC) of Australia published '*Interim guidelines on the limits of exposure to 50/60 Hz EMFs*'. These guidelines are based on recommendations of the International Commission on Non-Ionising Radiation Protection. The exposure limit to 50 Hz magnetic fields for 24 hours per day, set out in the NHMRC interim guidelines, is 1,000 milliGauss (mG).

For a typical 110 kV transmission line, the strength of the magnetic field at ground level directly under the powerline is unlikely to be above 20 mG. The strengths of EMFs rapidly decrease with increasing distance from a transmission line. In mathematical terms, if the distance doubles, the field strength reduces by a factor of four.

All transmission and distribution lines in Australia are designed to produce ground level EMFs much lower than the levels recommended in the NHMRC interim guidelines.

ENERGEX's policy of 'prudent avoidance' (doing whatever is reasonable to minimise exposure to EMFs) when designing new electricity infrastructure, involves where possible, locating the electricity assets to maximise the distance between the infrastructure and the nearest habitation, configuring the powerline conductors to reduce EMFs and increasing the height of the conductors above the ground.

To put into context the EMFs associated with powerlines, I detail below for comparison purposes the EMFs which are associated with household appliances. The average magnetic fields in Australian homes range from 0.5 mG to 5 mG. These magnetic fields are produced by domestic appliances, fixed wiring in the home and extension leads. The table below shows some typical values of magnetic fields from domestic appliances measured at normal operating distances from the appliances.

Magnetic Field Source	Typical Measurement (in mG)	Range of Measurements (in mG)
Hairdryer	25	10 – 70
Electric Blanket	20	5 – 30
Electric Stove	6	2 – 30
Computer Screen	5	2 – 20
Electric Kettle	3	2 – 10
Refrigerator	2	2 – 5
Television Screen	1	0.2 – 2

ENERGEX is a member of the Electric and Magnetic Fields Advisory Committee (EMFAC) of the Energy Supply Association of Australia (ESAA). As a member of EMFAC, ENERGEX has access to the latest information published by scientific review panels.

In order to allay public concerns and raise general awareness about EMFs, ENERGEX has provided information on the news and information page of its website at www.energex.com.au.

Additional government and industry websites also provide information about EMFs including the ARPANSA website at www.arpansa.gov.au and the ESAA website at www.esaa.com.au.

Petitioners also refer to the possible health risks from powerlines and pollutants. The physical mechanism by which high voltage electricity transmission lines may cause corona discharge and potentially increase the ionisation or charge on pollutant particles is well known and as such, high voltage alternating current powerlines are designed to minimise corona discharge.

In response to concerns raised by members of the community about corona ions, ENERGEX performed corona inception level testing at Ergon Energy's high voltage test laboratory at Virginia. Members of the community were invited to visit the laboratory and to see first hand that ENERGEX's 110 kV line is based on a corona free design. A tentative date for representatives of the community to view the corona tests has been scheduled for 9 July 2004.

The Ad Hoc Group on Corona Ions of the United Kingdom's National Radiation Protection Board Advisory Group on Non Ionising Radiation has recently conducted a review to determine the effect high voltage electric fields may have in the production of charged pollution particles and the possibility of increased deposition of those particles in lungs.

The Ad Hoc Group on Corona Ions released a document in 2004 titled '*Particle deposition in the vicinity of power lines and possible effects on health*'. The report concluded that: 'The effects of external electric fields on deposition of particles in the respiratory tract, if any, are likely to be very small' and 'The potential implications for the health of the general public of corona ions generated by powerlines do not, therefore, provide a strong case for further research in this area'.

Thank you for bringing this matter to my attention.

Yours sincerely

STEPHEN ROBERTSON MP