

Melville & Fremantle power options

Collected from the community comments session – 2 March 2010

SOLUTION SUGGESTIONS FROM THE COMMUNITY

<p>Why doesn't Western Power use Leeuwin Barracks?</p>	<p>The Leeuwin Barracks are not central to where the power is needed and, as a result, a lot of additional distribution feeder works would be needed. It would not be an efficient or effective solution. Also, we would be limited technically, in that the distribution feeders could only run essentially in one direction – ideally, feeders should radiate out in multiple directions.</p>
<p>Why doesn't Western Power use Wireless Hill?</p>	<p>The Wireless Hill site contains Bush Forever Vegetation along with Rare and Priority Flora. The clearing of this vegetation is protected by state and potentially federal legislation. Wireless Hill is also a Heritage Council site, which would restrict works that could take place on the site.</p>
<p>Why doesn't Western Power use Melville Plaza carport?</p>	<p>This property is privately owned and used as a parking facility for shoppers of Melville Plaza.</p> <p>In relation to underground infrastructure:</p> <p>Establishing transmission power lines and substations underground is significantly more expensive than the overhead equivalent – for example, the cost to place a 132 kV transmission line underground would be in the order of four to five times more expensive than overhead.</p> <p>If Western Power is to install lines and/or substations underground then we must be able to demonstrate that any additional costs are justified.</p> <p>To show that costs are justified, Western Power must show that the solution addresses the technical issue at hand. Also, Western Power must show that the solution is the most cost efficient over the life of the solution – this includes not just building the equipment but also maintaining and even fixing it throughout its lifetime.</p> <p>Underground substations and transmission lines are not only expensive to build but maintenance and faults can be more expensive and time consuming to address.</p>
<p>Why doesn't Western Power use Fremantle cemetery?</p>	<p>This option was raised by the City of Melville and is currently being considered by Western Power. Should investigations show that the location of this site is not suitable due to technical or environmental issues, then this may not be considered as an additional option.</p>
<p>Why not put it in an industrial area in Palmyra?</p>	<p>The option of establishing a new substation in industrial area in Palmyra is one of the five options currently being considered, i.e. option NPM.</p>
<p>Why doesn't Western Power use Bushland adjacent to Point Walter golf course?</p>	<p>This site sits on the outskirts of our study area, meaning it is too far from the existing network transmission lines for it to be an efficient or effective solution. Also, because it is situated on a peninsula, we would be limited technically, in that that the distribution feeders could only essentially run in one direction – ideally, feeders should radiate out in multiple directions.</p>
<p>Why doesn't Western Power divert the power lines down Norma Road through industrial areas versus Kitchener Road and North Lake Road?</p>	<p>Though the relocation of this line is technically feasible, the works would involve a significant cost and provide no benefit to the transmission network.</p>

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<p>Why not put more power stations north of the river instead of dragging supply through southern suburbs?</p>	<p>Power stations generate power – like what you might see at Kwinana.</p> <p>Western Power does not generate power but instead transports it, via infrastructure such as substations and power lines, through to your local homes and businesses.</p> <p>The generation of energy is an open market, with companies such as Verve Energy existing to create and maintain energy generation via various power stations – eg coal, gas and wind power stations.</p>
<p>Why don't you put the transmission lines and substations underground?</p>	<p>Establishing transmission power lines and substations underground is significantly more expensive than the overhead equivalent – for example, the cost to place a 132 kV transmission line underground would be in the order of four to five times more expensive than overhead.</p> <p>If Western Power is to install lines and/or substations underground then we must be able to demonstrate that any additional costs are justified.</p> <p>To show that costs are justified, Western Power must show that the solution addresses the technical issue at hand. Also, Western Power must show that the solution is the most cost efficient over the life of the solution – this includes not just building the equipment but also maintaining and even fixing it throughout its lifetime.</p> <p>Underground substations and transmission lines are not only expensive to build but maintenance and faults can be more expensive and time consuming to address.</p>
<p>What about more demand side management ideas and subsidies, such as solar panels or wind farms, or other environmentally sensitive sources of energy production?</p>	<p>Regardless of where or how energy is produced, electricity infrastructure (such as power lines and substations) will still be required to transport the energy from the source of its production through to the community.</p> <p>However, Western Power is continually investigating non network infrastructure options such as demand side management, local generation and smart grid initiatives, and such options will increasingly defer the need for transmission network reinforcement over time – however, to ensure the immediate power needs and reliability for the community, infrastructure solutions are still required.</p>
<p>Could you combine options NOC and DOM, and ensure that Myaree is decommissioned and a long term solution is achieved?</p>	<p>Yes, we could achieve a long term solution by combining these options and retaining the existing O'Connor 66 kV.</p> <p>Then the Myaree component would include decommissioning the existing 66 kV substation and constructing a new one at the McCoy Street site.</p> <p>From a power capacity perspective, this combination would only provide a relatively small additional, if not the same, amount of power capacity into the network.</p> <p>The only major difference for this combined option would be the relocation of the existing Myaree substation – however, given that no real power benefit would be achieved for the network, the spend would not be considered efficient by Western Power or our regulator and therefore would not be approved.</p>

DECISION MAKING

Has Western Power got a preferred option?	No preferred option has been identified at this stage of the project.
When will the preferred option be selected?	Western Power hopes to identify the preferred solution during 2011. An approvals process would then immediately follow on, with the Western Power Board and, depending on the cost of the preferred option, the Economic Regulation Authority. The approvals process would likely result in an approved solution not being confirmed until around 2012. Timing will depend on a number of factors (e.g. load growth).
Has Western Power eliminated any of the options?	No options have been eliminated at this stage of Western Power's investigations, however, the options identified as being "short term" (i.e. OCM and DOM) are unlikely to be economically viable.
What are the project timelines?	The required in service date of the preferred option, based on current load forecasting, is 2016 and approximately three years would be allowed for project construction.
Can the community group speak directly to the Economic Regulation Authority?	Yes, the community may contact the Economic Regulation Authority directly via the address below, or alternatively, via the 'Contact us' options shown on their website - www.erawa.com.au . <u>Postal Address:</u> Economic Regulation Authority PO Box 8469 PERTH BC WA 6849
Can you provide clarification on the weighting of various decisions and the driving factors for the project?	The key driving factor is a need for more power in the Cities of Fremantle and Melville. Ultimately, the weighting of deciding criteria for a preferred solution will lean towards technical feasibility and cost efficiency.
What weight does the community input have?	Weighting of community input will depend on the technical problem being investigated, the possible solution options being investigated and lastly, the quality of the community input gathered. Below are some key considerations specific to community input. If a problem came down to two technically viable options which were close in costs and had no legislative approvals issues, then the community's choice would be supported. If however, an option supported by the community went against legislative rulings, was a lot more expensive than other options or was not technically viable, then the community input would have less weight.
Is cost stopping Western Power from building from scratch?	No, the cost of building a substation from scratch may be comparable to upgrading an existing 66kV substation to 132kV – solutions costs can vary greatly depending on the unique characteristics of a solution, such as land costs, land size, site preparation costs, or engineering and construction difficulties.

PROPERTY

<p>Will Western Power sell existing sites that they don't use in this instance back to the people?</p>	<p>Should a property be surplus to requirements it may be marketed and sold, however Western Power would first need to be certain that the energy requirements of the area would not grow and possibly require future reinforcement.</p>
<p>Will Western Power compensate residents financially?</p>	<p>Western Power does not pay compensation to property owners for a loss of amenity due to the installation of electrical infrastructure.</p>
<p>If I live next to the Bicton site in Murray Street, could my house be resumed?</p>	<p>To date, Western Power has not resumed land for a substation site and doing so is not supported as a course of action by management. The directive supplied to Western Power staff is to explore all potential options before considering resumption.</p>
<p>Why did Western Power buy property before consultation with the community?</p> <p>If no decisions are made, why buy properties and land? For example, at Booragoon and Bicton.</p> <p>Why weren't the residents of Murray Road Bicton informed about the purchase of 64 Murray Rd 18 months ago?</p>	<p>Western Power aims to consult with the community on all land purchases prior to purchase. In some instances, however, land may become available which may provide a future benefit to Western Power and is therefore purchased. In such instances, Western Power may not be able to communicate with the local community until after the purchase.</p> <p>In the specific instance of Bicton, a site nearby a plot already owned by Western Power suddenly became available for purchase. Western Power forecasts showed a future power shortfall for the overall area and so the property was strategically purchased to aid the possibility of a future Bicton substation being built.</p> <p>Similarly with the existing Myaree substation, land close by to the existing substation was auctioned, and though Western Power missed out on the property, it opened up conversations which led to the strategic purchase of a separate nearby property.</p> <p>Western Power acknowledges that communications for the above property purchases were not clear enough or fast enough. Subsequently, Western Power has been working to improve the transparency and clarity of its messages for this project by regularly communicating with the community via our website, letter drops, newspaper advertisements and community sessions.</p>
<p>Why does Western Power purchase land in residential areas?</p>	<p>For substations to operate efficiently, it is necessary that they are established in a location central to the area they will supply. As substations often supply power to areas consisting primarily of residential properties, it is often necessary for them to be built within residential areas. Some examples of existing substations in residential areas include the Nedlands substation on Rockton Road and the North Perth substation on Bourke Street.</p>
<p>What about land swapping the residential sites that you own?</p>	<p>Western Power is currently investigating the potential of a land swap of the Bicton substation site with the City of Melville.</p>
<p>Is Western Power breaking the law if they purchase land without being locked into using it?</p>	<p>Western Power is not breaking the law by purchasing land without using it. Due to changes in load forecasts and alternative options arising, it is quite possible that Western Power acquire land without utilising it for the intended purpose.</p>
<p>Is it true that Western Power bought 64 Murray Road after 6-8 hours on market and was it bought for a future substation site?</p>	<p>No, the site was not bought 6-8 hours after coming onto the market.</p> <p>Western Power can confirm that we sought information on the value of the property on 10 September 2007 and did not submit an offer until 14 September 2007. This Offer was then accepted on 16 September 2007.</p> <p>Yes, the site was bought for the possibility of future substation use, due to its proximity to the already owned Bicton site.</p>

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<p>If Western Power decide to decommission or not build on a site, would there be a guarantee of relinquishment (sale) of the sites back to the communities or local council?</p>	<p>Should a property be surplus to requirements it may be marketed and sold, however Western Power would first need to be confident that the property will not be required for future network reinforcement works.</p>
<p>Has Western Power considered the ratio of available open space in their options analysis – particularly where Bicton is concerned?</p>	<p>No, Western Power has not considered the ratio of open space available in the options analysis. The availability of public open space is a strategic planning issue that is managed by the local authority – in this instance, the City of Melville or the City of Fremantle.</p> <p>The below comments have been provided by the City of Melville:</p> <p><i>The Western Australian Planning Commission (WAPC) Development Control Policy 2.3 (May 2002) establishes the parameters for the provision of Public Open Space (POS) as being 10% of gross sub-divisible area.</i></p> <p><i>This provision has its basis in the recommendations of the ‘Plan for the Metropolitan Region Perth and Fremantle’, 1955 Report, (the Stephenson - Hepburn Plan).</i></p> <p><i>In this context it should be noted that Bicton was originally subdivided as early as 1917 and 1921.</i></p> <p><i>The provision of Public Open Space is determined as a component of the subdivision approval process for new developments and not retrospectively. The Development Control Policy 2.3 also provides options for the allocation of sites for community facilities, or for cash-in-lieu of open space.</i></p> <p><i>Given the typically staged nature of traditional suburban development, it is therefore possible for public open space availability to vary between localities.</i></p> <p><i>Open spaces within the Bicton locality include Harry Grose Reserve (1.33ha), John Dickenson Park (1.30ha), Rob Campbell Park (1.15ha), Geo Lithgo Reserve (0.67ha), Bicton Quarantine Park (1.92ha), the Bicton Baths Reserve (0.98ha) the Point Walter Reserve (57.5ha) (established in 1895), Blackwall Reach Reserve (12.5ha) [total open space = 77.35ha].</i></p> <p><i>The community also has access to the Bicton Primary School oval after school hours.</i></p>
<p>Where the Myaree substation is on the edge of industrial and residential land, does this not affect land prices - or does Western Power pay the going rate?</p>	<p>Western Power endeavours to acquire land by negotiation and in accordance with market values.</p>
<p>The purchase of land at the existing Myaree substation has taken place over many years. Has the Economic Regulation Authority been notified or provided input on this?</p>	<p>Western Power provides a list of land purchases to the Economic Regulation Authority for the audit and accounting of spent funds.</p> <p>No input has been received from the Economic Regulation Authority on the Myaree site purchases and nor would it be expected, unless a project costing more than \$30 million, involving the Myaree site, was submitted for their approval.</p>
<p>How long has the substation been on the corner of Norma and Kitchener Roads in Booragoon?</p>	<p>The 66kV Myaree Substation was established in 1960.</p>

ENVIRONMENTAL

<p>Why is Western Power concerned about protecting the flora and fauna but not about protecting our children, our future generation?</p>	<p>All Western Power infrastructure is designed and constructed to comply with World Health Organisation (WHO) requirements – meeting safety standards for both adults and children alike.</p> <p>The clearing of environmentally significant vegetation and rare fauna habitats are protected by legislation.</p>
<p>Can the community get an official statement from an environmental scientist?</p>	<p>On matters of electromagnetic fields (EMF), Western Power designs and constructs its infrastructure to comply with recommendations of the National Health and Medical Research Council (NHMRC) and the World Health Organisation (WHO).</p> <p>Western Power also closely monitors the recommendations of the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), who are responsible for administering the electromagnetic field exposure guidelines in Australia.</p> <p>If anyone within the community would like to seek advice independent of Western Power on electromagnetic fields, it is suggested that they contact the Australian Radiation Protection and Nuclear Safety Agency or a qualified health professional with background in electromagnetic fields exposure.</p>

ENGAGEMENT

<p>How were people contacted about last year's options analysis survey?</p>	<ol style="list-style-type: none"> 1. 4,000 homes were sent letters directing people to the website, the November community session or the helpline for the project – all of which made available the survey in online or paper copy. 2. Newspaper advertisements were placed in all local papers and also the West Australian, directing people to the website, the November community session or the helpline for the project – all of which made available the survey in online or paper copy. 3. Various local papers had articles relating to the project, which noted the survey and November's community session. Two of these articles were front page articles. 4. A3 glossy posters were provided to the City of Melville and City of Fremantle for distribution via their local communication channels. 5. An eleven hour session was held outside Coles in Booragoon's Garden City Shopping Centre that provided people with details on the options, along with a paper copy of the survey and details of how to access the survey online. 6. The website was available with up to date information on the project options and access to an online version of the survey.
<p>The survey results aren't representative of the entire community – how much weight will they have on the final result?</p>	<p>The survey results will be read in conjunction with all collected community information.</p> <p>All community output will be viewed equally as one collective reporting of views and findings.</p>
<p>What weight does community input have on the final decision?</p>	<p>Weighting of community input will depend on the technical problem being investigated, the possible solution options being investigated and lastly, the quality of the community input gathered. Below are some key considerations specific to community input.</p> <p>If a problem came down to two technically viable options which were close in costs and had no legislative approvals issues, then the community's choice would be supported.</p> <p>If however, an option supported by the community went against legislative rulings, was a lot more expensive than other options or was not technically viable, then the community input would have less weight.</p>

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<p>Is Western Power going to ask tenants or owners?</p>	<p>Western Power will communicate with both.</p> <p>Western Power has initially made contact via a broad sweep of 4,000 local homes.</p> <p>As investigations progress towards a preferred solution, Western Power will refine the contact area and seek advice from the local council regarding rate payer details for the purposes of mail outs.</p> <p>Information will continue to be made available via the website, local and metro papers, and community sessions.</p>
<p>Why don't you contact people via their electricity bills?</p>	<p>Electricity bills are sent to you by energy retailers such as Synergy. They are a completely separate entity to Western Power.</p>
<p>Why were no technical people present at this session and why do we have to wait for answers?</p>	<p>The March 2 session was advertised since October 2009 as being a listening session.</p> <p>Our experiences with various Western Power community sessions have proven that by dedicating a full session to listening to and capturing the community thoughts, ideas and questions, that we are able to gather more than triple the feedback of a session where we try and answer questions on the spot.</p> <p>The other great benefit is that we can avoid situations whereby the answers to questions are unknown because the right person isn't at the session or perhaps doesn't have access to all the facts right then and there.</p> <p>Ultimately, we know it's a trade off - you may have to wait a little longer for your answers but in return we're able to answer more questions and answer them accurately and thoroughly.</p>
<p>How is Western Power going to contact us in future about this project?</p>	<p>For everyone registered with our Community Contact Group, we will keep you directly in touch with this project as time goes on. Where advertising is concerned, we've started placing larger advertisements. Where mail-outs are concerned, we will seek to address letters to the rate payer of a property instead of using unaddressed Western Power envelopes.</p> <p>We will also continue to supply details to the City of Melville and City of Fremantle, asking them to disseminate project information via their own community channels.</p>

NOISE

<p>Especially for high voltage 132 kV substations, what noise reductions management strategies would be employed and would they adhere to environmental best practice? For example, brick walled, high height, vegetated buffer zones vs. cyclone fencing or mesh gated enclosures?</p>	<p>All new transmission substations would be constructed to comply with the <i>Environmental Protection (Noise) Regulations 1997</i>. To achieve compliance a combination of enclosures around the transformers and/or barrier walls may be utilised. Similar use of noise mitigation techniques would be utilised when upgrading existing transmission substations.</p> <p>Existing transmission substations have been prioritised for future noise mitigation works in accordance with Western Power's Regulation 17 Approval (a Ministerial Approval to operate Western Power's infrastructure above the Noise Regulations). Western Power is currently in the discussions with the Department of Environment and Conservation (DEC) regarding prioritisation of noise mitigation at these existing transmission substation sites.</p>
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TECHNICAL

Are we 'locked into' these options?	No. Additional options may be identified in the future as well as existing options being eliminated.
What exactly do you mean by long term and short term solutions?	<p>These are generic terms and it is difficult to provide a definitive response. In a project evaluation, a key requirement is that Western Power must demonstrate that, in making an investment, it is efficiently minimising costs. On an indicative basis:</p> <ul style="list-style-type: none"> • The options identified as short term may only suffice for a period up to (say) 10 years before further works are required. • A long term solution may suffice for a period greater than (say) 10 years after works are completed.
Where will the transmission lines go, incoming and outgoing from any/each station to be sited, e.g. suburb by suburb, showing proximity to residential areas, schools, child centres etc. Will transmission line routes for all proposed options deemed the most favourable be made available for community review?	<p>As yet, Western Power can not confirm precise locations of the line routes for the options being investigated.</p> <p>Western Power will however continue to update the community as information becomes known and yes, the proposed line route for the preferred solution, once identified, would be made available to the community for comment.</p>
Why don't you put the substations underground?	<p>Establishing transmission power lines and substations underground is significantly more expensive than the overhead equivalent – for example, the cost to place a 132 kV transmission line underground would be in the order of four to five times more expensive than overhead.</p> <p>If Western Power is to install lines and/or substations underground then we must be able to demonstrate that any additional costs are justified.</p> <p>To show that costs are justified, Western Power must show that the solution addresses the technical issue at hand. Also, Western Power must show that the solution is the most cost efficient over the life of the solution – this includes not just building the equipment but also maintaining and even fixing it throughout its lifetime.</p> <p>Underground substations and transmission lines are not only expensive to build but maintenance and faults can be more expensive and time consuming to address.</p>
Why don't you place transmission lines underground?	<p>Establishing transmission power lines and substations underground is significantly more expensive than the overhead equivalent – for example, the cost to place a 132 kV transmission line underground would be in the order of four to five times more expensive than overhead.</p> <p>If Western Power is to install lines and/or substations underground then we must be able to demonstrate that any additional costs are justified.</p> <p>To show that costs are justified, Western Power must show that the solution addresses the technical issue at hand. Also, Western Power must show that the solution is the most cost efficient over the life of the solution – this includes not just building the equipment but also maintaining and even fixing it throughout its lifetime.</p> <p>Underground substations and transmission lines are not only expensive to build but maintenance and faults can be more expensive and time consuming to address.</p>

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<p>Can you 'enclose' substations to reduce emissions?</p>	<p>Western Power substations are built to the World Health Organisation's guidelines for electromagnetic field emissions and do not need to be 'enclosed' to achieve these safety levels.</p> <p>Electric and magnetic fields (often referred to as EMF) are a by-product of electricity use. The electric field can be shielded by houses, trees and even a piece of paper.</p> <p>Magnetic fields are much harder to screen and will still penetrate solid materials such as an enclosure. One way to reduce the magnetic field is to enclose the device in a conductive screen (Faraday cage), which will induce a current and generate its own magnetic field. This field will partially cancel the original magnetic field. This can be expensive and it is much cheaper and easier to simply increase the separation from the source to reduce the magnetic field.</p> <p>If a substation was to be enclosed, it would not be for the purposes of reducing electromagnetic field emissions.</p>
<p>Why does a population saturated area need to provide a site to power new developments in other suburbs? For example, Bicton and Applecross.</p>	<p>Western Power's electrical network is interconnected or meshed. This means that whilst your local substation primarily supplies power to your immediate suburbs, it also plays an important part in the overall network security of the grid and may be utilised to provide temporary backup supply to surrounding substations should a power failure occur.</p> <p>Ultimately, where substations need to be located depends not just on the power demand needs of the various areas but also on where the existing and planned infrastructure (such as other substations, transmission and distribution lines) are situated.</p> <p>Lastly, local constraints from the Department of Planning, regional authorities and other relevant governing bodies must also be factored in.</p>
<p>Where does Murray Road, Bicton get power from currently?</p>	<p>Bicton is currently supplied by the existing 132/22 kV Amherst substation.</p> <p>Amherst substation is located between Fremantle and White Gum Valley, and predominantly supplies East Fremantle, Bicton, Palmyra, Melville, White Gum Valley, and parts of South Fremantle.</p>
<p>Is it true that if built, that the Bicton option would be the most expensive?</p>	<p>No firm comparisons on costs have been assessed for the options and as such, we don't know for certain which option would be the most or least expensive.</p>
<p>What is the best position from an engineering perspective?</p>	<p>As we are still considering options, this is under investigation.</p>
<p>Is 120 metres x 120 metres really necessary for a substation?</p>	<p>No, however a 120m x 120m site allows for the installation of a standard designed 132 kV substation with sufficient space for adequate landscaping and screening.</p> <p>As technologies progress, so will the evolution of standard substation design.</p>
<p>What is the implication of electromagnetic frequency on video/radio equipment?</p>	<p>As with electrical appliances, transmission lines and substations have been known to cause interference with radio and television reception.</p> <p>Such interference is usually only experienced during hot, dry and windy weather.</p> <p>In the case of transmission lines and substations, the interference is a result of built up dust or salt on the line insulators and will typically clear after rainfall or washing.</p> <p>With the introduction of digital television and radio, the incidence of interference should reduce.</p>

SAFETY & HEALTH

<p>What is a safe level of exposure to electromagnetic frequency?</p>	<p>Western Power designs and constructs its infrastructure to comply with the recommendations of the National Health and Medical Research Council (NHMRC) and the International Commission for Non-Ionizing Radiation Protection (ICNIRP), which is the World Health Organisation's (WHO) delegated authority on matters related to electromagnetic field exposure.</p> <p>The current NHMRC exposure guidelines specify a limit of 1000 mG for continual magnetic field exposure for the general public.</p> <p>At the boundary of the substation the level of magnetic field is expected to be in the range of 5 – 10 mG, but may alter slightly depending on the substation layout and technical parameters at the time of measurement</p> <p>The Australian Radiation Protection and Nuclear Safety Agency are responsible for administering the electromagnetic field guidelines in Australia and Western Power will continue to monitor its recommendations through its membership of the Energy Networks Association</p>
<p>What is the most suitable, safer, health wise distance from 132 kV substations?</p>	<p>Western Power designs and constructs its infrastructure to comply with the recommendations of the National Health and Medical Research Council (NHMRC) and the International Commission for Non-Ionizing Radiation Protection (ICNIRP), which is the World Health Organisation's (WHO) delegated authority on matters related to electromagnetic field exposure.</p> <p>The current NHMRC exposure guidelines specify a limit of 1000 mG for continual magnetic field exposure for the general public.</p> <p>At the boundary of the substation the level of magnetic field is expected to be in the range of 5 – 10 mG, but may alter slightly depending on the substation layout and technical parameters at the time of measurement</p> <p>The Australian Radiation Protection and Nuclear Safety Agency are responsible for administering the electromagnetic field guidelines in Australia and Western Power will continue to monitor its recommendations through its membership of the Energy Networks Association</p>
<p>What concrete amount of electromagnetic frequency high voltage/high frequency emissions from 132kV stations are likely to be generated and environmentally leaked out of the confines of the substation premises to surrounding residential areas? What, if any quantitative studies of the levels of emissions from kV(A) have been conducted?</p>	<p>Electromagnetic emissions recorded outside the property boundary of a 132 kV substation will vary but typically, electromagnetic field emissions at the property boundary of a substation site are similar to the levels experienced within a normal household – i.e. the emissions coming from your domestic electrical wiring and appliances.</p>
<p>What suitable buffering distance e.g. 50m, 100m, 150m etc from the nearest residential areas has been established as safe health-wise from 132 kV-type substations? Have such distances been established?</p>	<p>The magnetic field emitted by an electrical device surrounds/rotates around the source. As distance between a person and an electrical source are increased, magnetic field levels will quickly decrease.</p> <p>As such the safe buffer distance, is determined by; the level of magnetic field emitted by an electrical device, its magnetic field profile and lastly the exposure limits specified by health organisations.</p> <p>In relation to Western Power equipment, all infrastructure is designed and built to comply with the exposure limits recommended by the NHMRC and WHO.</p>

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<p>Is electromagnetic frequency detrimental to children's developing physiology? For example, the Australian Story episode that spoke about Red Symon's boy.</p>	<p>The balance of scientific studies conducted over the last 30 years indicate that the electromagnetic field exposure associated with powerlines or the electricity infrastructure of household appliances is not detrimental to a person's health when designed and built as per the exposure limits recommended by the NHMRC and WHO.</p>
<p>Has Western Power considered the number of children passing the substation daily + crosswalk attendants standing opposite the substation 2x daily (1.5 hours) 5/7 school term?</p>	<p>Western Power considers the health and safety of all residents, which is why all Western Power infrastructure is designed and built as per the exposure limits recommended by the NHMRC and WHO.</p>
<p>Why concern for heritage, flora and fauna, but not children? Have no children been considered?</p>	<p>On matters of electromagnetic fields (EMF), Western Power designs and constructs its infrastructure to comply with recommendations of the National Health and Medical Research Council (NHMRC) and the World Health Organisation (WHO).</p> <p>Western Power also closely monitors the recommendations of the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), who are responsible for administering the electromagnetic field exposure guidelines in Australia.</p> <p>If anyone within the community would like to seek advice independent of Western Power on electromagnetic fields, it is suggested that they contact the Australian Radiation Protection and Nuclear Safety Agency or a qualified health professional with background in electromagnetic fields exposure.</p>
<p>Cancer on rise - blood related. Modern lifestyle but worldwide research even low levels of electromagnetic frequency i.e. cordless phones, mobile, tv, fridge etc harms health. Existing Kitchener/Norma substation is very close to Booragoon primary school. Why does Govt think heritage is more important than city health?</p>	<p>Western Power designs and constructs its infrastructure to comply with the recommendations of the National Health and Medical Research Council (NHMRC) and the International Commission for Non-Ionizing Radiation Protection (ICNIRP), which is the World Health Organisation's (WHO) delegated authority on matters related to electromagnetic field exposure.</p> <p>The current NHMRC exposure guidelines specify a limit of 1000 mG for continual magnetic field exposure for the general public.</p> <p>At the boundary of the substation the level of magnetic field is expected to be in the range of 5 – 10 mG, but may alter slightly depending on the substation layout and technical parameters at the time of measurement</p> <p>The Australian Radiation Protection and Nuclear Safety Agency are responsible for administering the electromagnetic field guidelines in Australia and Western Power will continue to monitor its recommendations through its membership of the Energy Networks Association</p> <p>Lastly, the balance of scientific studies conducted over the last 30 years indicate that the electromagnetic field exposure associated with powerlines or the electricity infrastructure of household appliances is not detrimental to a person's health when designed and built as per the exposure limits recommended by the NHMRC and WHO.</p>
<p>Is there a guarantee that an explosion with potential of a bush fire won't occur or that there is no radiation?</p>	<p>The risk of an explosion within a substation is extremely low and to date, less than ten explosions or fires have occurred on Western Power substation sites, all of which have been easily contained and with no people harmed.</p> <p>The community is invited to visit the documents section of www.westernpower.com.au where further information regarding Western Power's substation installation requirements can be found.</p>

Melville & Fremantle power options

<p>Can the community get an official statement from a health expert?</p>	<p>On matters of electromagnetic fields (EMF), Western Power designs and constructs its infrastructure to comply with recommendations of the National Health and Medical Research Council (NHMRC) and the World Health Organisation (WHO).</p> <p>Western Power also closely monitors the recommendations of the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), who are responsible for administering the electromagnetic field exposure guidelines in Australia.</p> <p>If anyone within the community would like to seek advice independent of Western Power on electromagnetic fields, it is suggested that they contact the Australian Radiation Protection and Nuclear Safety Agency or a qualified health professional with background in electromagnetic fields exposure.</p>
<p>How safe are transmission lines?</p>	<p>Western Power designs and constructs its infrastructure to comply with the recommendations of the National Health and Medical Research Council (NHMRC) and the International Commission for Non-Ionizing Radiation Protection (ICNIRP), which is the World Health Organisation's (WHO) delegated authority on matters related to electromagnetic field exposure.</p> <p>The current NHMRC exposure guidelines specify a limit of 1000 mG for continual magnetic field exposure for the general public.</p> <p>At the boundary of the substation the level of magnetic field is expected to be in the range of 5 – 10 mG, but may alter slightly depending on the substation layout and technical parameters at the time of measurement</p> <p>The Australian Radiation Protection and Nuclear Safety Agency are responsible for administering the electromagnetic field guidelines in Australia and Western Power will continue to monitor its recommendations through its membership of the Energy Networks Association</p>