



GOVERNMENT REVIEW: AUSTRALIAN BROADCASTING SERVICES INTO THE ASIA-PACIFIC

Submission ABC Friends National Inc.

ABC Friends National Inc. represents State and Territory ABC Friends organisations around the country. ABC Friends National co-ordinates lobbying and national campaigns, particularly at election time or when the ABC is under threat. At the same time, ABC Friends continues to prod the ABC to do better in both the range and quality of the programs and services it provides.

State committees of ABC Friends keep in close contact with the many thousands of people who support the ABC as a politically independent organisation which must be properly funded if it is to fulfil its Charter and serve all Australians.

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Submission can be made public.

Background to Review. ABC South Pacific Shortwave (HF) Service

On January 31st 2017 the South Pacific shortwave (HF) service was closed down along with shortwave services to the Northern Territory. Radio Australia's South Pacific service was broadcast from three (100 kW) transmitters in Shepparton, Victoria, and it was a significant lifeline to Pacific nations. At the same time shortwave into the NT was closed down. Radio Australia had 50kW shortwave transmitters in Katherine, Tennant Creek and Alice Springs used to service people working, living and travelling in remote parts of the NT.¹

Appendix 1 shows the footprint of the "HF Shower" into the South Pacific and the countries covered by SW transmission and received on low cost shortwave receivers. People in the Solomon Islands, PNG, Vanuatu and Fiji, listened to Radio Australia to get their world information and emergency information. At the time of the closure, the Prime Minister of the Cook Islands, Henry Puna, the Prime Minister of Vanuatu, Hon Charlot Salwai, and Vanuatu's Trade Commissioner to Australia, Donald Pelam, all made calls for the shortwave service not to be cut. The Pacific Island nations have particular and additional needs that the ABC is in a unique position to satisfy. ABC services can be a matter of life and death during natural disasters in the Pacific as attested to by the Hon. Charlot Salwai, Prime Minister of the Republic of Vanuatu.² The ABC's shortwave service was valued in the Pacific for its independence and quality and for the role it played in maintaining media freedom. In a region in which it is all too common for governments to put pressure on their own media or national broadcasters or to resort to censorship, the ABC's dedication to the values of public service broadcasting was an important role model playing a vital role in contributing to debate in the region, supporting local media organizations and setting standards for media freedom.³

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¹ Alan Hughes, *What's Next for Australian Broadcast Radio?*, Sept 2017, siliconchip.com.au

² Hon. Charlot Salwai, Prime Minister of the Republic of Vanuatu submission to ABC Amendment Bill (Restoring Shortwave) Bill 2017 [file:///C:/Users/USER/Documents/Downloads/Sub15%20\(3\).pdf](file:///C:/Users/USER/Documents/Downloads/Sub15%20(3).pdf)

³ Pacific Freedom Forum submission to ABC Amendment Bill (Restoring Shortwave) Bill 2017 [file:///C:/Users/USER/Documents/Downloads/Sub45%20\(2\).pdf](file:///C:/Users/USER/Documents/Downloads/Sub45%20(2).pdf)

Radio Australia's English language programs broadcast via SW reached parts of the Pacific lacking FM radio or the internet, from the isolated Papua New Guinea Highlands (80% of PNG's population live in rural areas⁴) to remote atolls and was especially valued during natural disasters and political upheaval. SW (often called the HF shower as signals were bounced off the ionosphere) was valued for its clarity, reliability during weather events and its ability to cover large distances.

Major funding cutbacks on ABC operations and the mantra "SW is an outdated technology" were the reasons given by the ABC for its closure into the South Pacific at an estimated cost saving of \$2.8 million per annum.

The ABC announced that its Pacific strategy was to shift from Australia-based shortwave transmitters to FM transmitters in each country supported by mobile phone towers. The ABC said that more people now have access to mobile phones with FM receivers and that funds would be redirected towards extended content offering and a robust distribution network to better serve audiences into the future⁵. The reality is that since the ABC axed shortwave it has opened only two new FM stations (in PNG), with another on the way, and it has under-resourced programs to the point that broadcast hours have been cut again.⁶

Has the Pacific been well served by the ABC cutting its shortwave service in the light of other existing services and an FM/mobile phone strategy?

Other services into the Asia Pacific

The ABC's international television service, ABC Australia, operates across 40 countries in the Asia-Pacific region. It makes available to audiences: Australian news, current affairs, entertainment and cultural enrichment programs packaged as ABC Australia (formerly Australia Plus).⁷

The international television service's current incarnation was launched on 1 January 2002 as ABC Asia Pacific. It was partially funded by Australia's Department of Foreign Affairs and Trade, as well as by some advertising. The service was relaunched in 2006 as Australia Network. All funding to the Australia Network was cut in the 2014 Australian federal budget and its closure was announced⁸. The ABC lost its \$220 million ten-year contract. The Australia Network was officially replaced by Australia Plus from 29 September 2014. Since 2014, budget cuts by the Government and the ABC have impacted its international service.⁹ Rebranding from Australia Plus to ABC Australia in 2018 followed the lifting of the geo-block on the ABC NEWS live streaming video on the ABC website and YouTube channels, allowing audiences to watch more of the ABC's Australian content.

ABC Australia is an international satellite television and digital service. It is not free-to-air in most countries, being only available via paid cable and satellite services. The television and online service broadcasts 24 hours a day on 7 days a week.

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⁴ RN Saturday Extra <http://radio.abc.net.au/programitem/pg7amWmB7?play=true>

⁵ <https://radio.press.abc.net.au/abc-exits-shortwave-radio-transmission>

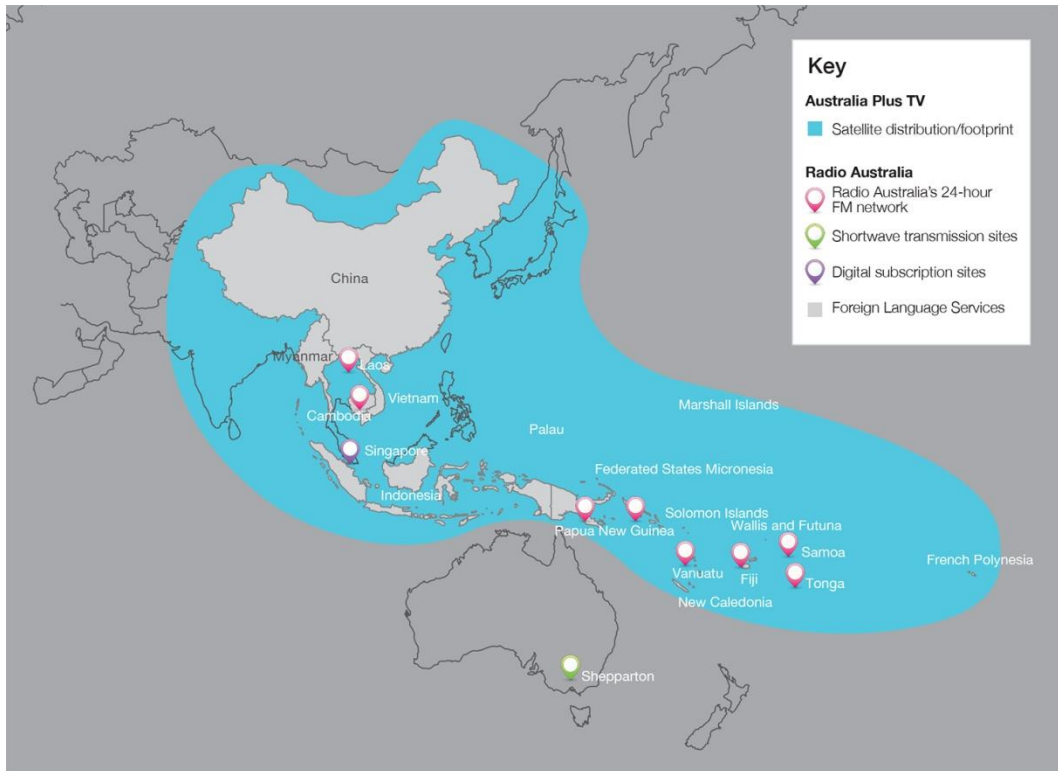
⁶ Jemima Garrett <http://www.devpolicy.org/the-time-is-right-for-a-step-up-in-abc-broadcasting-to-the-pacific-20180709/>

⁷ <http://about.abc.net.au/press-releases/abc-australia-delivers-for-international-viewers/>

⁸ [https://en.m.wikipedia.org/wiki/ABC_Australia_\(Asia-Pacific_Television\)](https://en.m.wikipedia.org/wiki/ABC_Australia_(Asia-Pacific_Television))

⁹ Pers Comm: Jemima Garrett, former ABC South Pacific Correspondent/ABC-Radio Australia Pacific Economic and Business reporter

See map below which shows footprint of TV and radio services as of 2016 when shortwave was still operating.



<http://www.abc.net.au/corp/annual-report/2016/images/img-researchDev.jpg>

Undersea cable to the Solomon Islands.

The Government recently announced the funding of an undersea, high speed internet link from Australia to the Solomon Islands and Papua New Guinea. DFAT is now funding about two thirds of the cost of the cable. It is believed that this project could cost the aid budget more than \$100 million.¹⁰

Certainly improved internet connectivity to the islands has the potential to help with live streaming and podcast download. It might also be possible to rebroadcast on local FM or perhaps TV from a live stream. However, it will take quite a while for either FM or internet connectivity to reach the remote audiences of the Pacific.¹¹ Ten member nations (half) of the Pacific Island Forum currently don't have access to ABC radio by FM and of course SW.¹²

This new infrastructure does not replace the penetration of shortwave services lost into remote areas of the Asia-Pacific for the same reason that NBN and VAST services have no or limited practical utility in regional and remote areas in Australia itself.¹³ In Appendix 2 the options suggested by the ABC to

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¹⁰ <http://www.abc.net.au/news/2018-06-13/solomon-islands-undersea-cable-internet-china/9861592>

¹¹ Pers Comm: Peter Marks: software developer, commentator and holder of BOCQ qualification to run broadcast transmitters.

¹² RN Saturday Extra <http://radio.abc.net.au/programitem/pgr7amWmB7?play=true>

¹³ Pers Comm: Peter Marks: software developer, commentator and holder of BOCQ qualification to run broadcast transmitters.

replace SW into the NT are critiqued. There are no viable alternatives for remote users of SW in the NT and the same arguments apply to remote SW users in the South Pacific.

Until there is good internet everywhere shortwave transmission using digital radio mondiale (DRM) remains a good option. ¹⁴

What is DRM?

Shortwave isn't an outdated technology in the South Pacific. The 21st century future of shortwave is the move from analogue to digital i.e. to digital radio mondiale (DRM). DRM is a maturing technology which allows FM-quality broadcasts over enormous areas, using much the same broadcasting infrastructure (transmitters) as the old AM shortwave used. A DRM exciter would be needed to upgrade the transmitter. Transmitters converted to DRM experience a 40-50% reduction in electricity consumption. DRM30 is the designation used for DRM broadcast below 30MHz, commonly known as the shortwave band. It offers the advantages of digital radio, while still being able to be transmit over vast distances. It provides FM comparable sound quality, has less fading and interference issues and is resilient during weather events. ¹⁵

The ABC has toyed with the use of DRM. Radio Australia did transmit English on a very low power DRM30 service on shortwave (owned by BA) to Papua New Guinea from a secondary station at Brandon (Qld) but that ended in March 2015. The last HF (shortwave) broadcasting facility in Australia capable of delivering a strong service into the Pacific region is that owned and operated by Broadcast Australia (BA) at Shepparton in Victoria. BA bought a new 100 kW transmitter for the site in 2009 for ~AUD\$1 million. It is the only high power transmitter in the former RA HF network able to send DRM. An operational schedule was prepared to commence high power DRM trials into PNG and the SW and Central Pacific regions carrying RA's Tok Pisin and English services. Radio New Zealand International offered its pan-Pacific network of DRM receivers to assess the proposed RA services. However the ABC unexpectedly directed BA to not mount any scheduled DRM transmissions from the new transmitter at Shepparton. So, DRM has never been broadcast from Shepparton beyond commissioning tests. It could be sold at any moment. ¹⁶

Use of DRM by other countries

DRM is now well established in the UK, many of the European countries, Canada, India and Russia, plus in New Zealand. Major broadcasters are investing in a shortwave future by moving to digital shortwave. Radio New Zealand International, the BBC World Service and All India Radio among others have moved on to digital shortwave using DRM. Radio New Zealand International broadcasts DRM 30 on shortwave for about 20 hours per day mainly to the Pacific Islands. ¹⁷

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¹⁴ Pers Comm: Peter Marks: software developer, commentator and holder of BOCF qualification to run broadcast transmitters.

¹⁵ Benjamin Quilliam submission to ABC Amendment Bill (Restoring Shortwave) Bill 2017
<file:///C:/Users/USER/Documents/Downloads/Sub53.pdf>

¹⁶ Pers Comm: Nigel Holmes, formerly Transmission Manager, Radio Australia

¹⁷ Jim Rowe, "The Future of DRM Radio Broadcasting" Sept 2017, siliconchip.com.au

Contrasting FM with DRM

The ABC's Pacific strategy of shifting from Australia-based shortwave transmitters to FM transmitters in each country supported by mobile phone towers has problems. While both FM and DRM have good sound quality, the range of FM is much more limited than DRM. FM is a city service, shortwave has national and international reach. The footprint of FM reception pretty much relies on line of sight and has a maximum reach of around 70 km. As reception can be blocked by hills, FM is not ideal for the volcanic islands, mountainous areas or highlands in the Pacific. Phone towers and FM transmitters are also vulnerable when a cyclone hits. DRM30 transmitters located in Australia (outside cyclone areas) mean they can reliably transmit emergency information without risk of being weather affected. FM can be turned off due to budget cuts or regimes opposed to the free media. DRM broadcast from Australia, can't be.¹⁸ Unlike a broadcast radio receiver, when streaming using a mobile phone, the phone network must track the movement of the mobile through the network which drains the phone battery. Streaming using a mobile phone has data costs, problematic for developing countries.¹⁹

DRM receivers

While DRM has a bright future, the problem at the moment is the lack of receivers in the field and the fact that the available receivers tend to be expensive, heavy and power hungry. This is problematic for use in developing countries.

The technology (chipsets, etc) is available and ready to use. If more broadcasters used DRM, more manufacturers would make receivers. These receivers would vary in quality and price as all consumer electronics do. The main differences between a good receiver and a cheap one are in two areas: the radio frequency (RF) receiver circuitry and the overall radio quality. A cheap RF circuit would result in a receiver which would receive only strong radio signals. Weak signals and sources of interference would cause the received radio station to drop out in much the same way digital TV now does, except with audio instead of video.

The overall experience of using the radio is of significance as well. This could include things like how easy it is to select a channel, how loud the volume can go and how much the sound is distorted by the amplifier and speakers. The ability to plug in an external aerial is another factor. It also matters how long batteries last, how robust it is and what other functions it has. As more receivers come on the market each niche will be filled more easily.²⁰

An Interim Strategy.

In an ideal world, DRM would be broadcast from Australia far and wide from existing SW transmission sites upgraded to DRM and the signals received on DRM receivers. Good DRM receivers have been rare and expensive to acquire (and to run, if powered by batteries) so an interim strategy is to use DRM as a relay feed. This mode works well the way RNZI uses DRM.

The program would be transmitted over shortwave transmitters in the DRM format from Australia's shortwave transmitter sites.

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¹⁸ Graeme Dobell, *ABC shortwave in the South Pacific: From Exit to Engagement, from Retreat to Renewal* [file:///C:/Users/USER/Documents/Downloads/Sub35%20\(4\).pdf](file:///C:/Users/USER/Documents/Downloads/Sub35%20(4).pdf), April 2017

¹⁹ Alan Hughes, *What's Next for Australian Broadcast Radio?*, Sept 2017, siliconchip.com.au

²⁰ Pers Comm: Peter Marks: software developer, commentator and holder of BOCP qualification to run broadcast transmitters.

When DRM is used as a relay feed, on the ground a shortwave antenna and a DRM receiver are used. The received audio is fed in to a local FM transmitter which covers the nearby 50km radius. Listeners tune in using normal FM radios. This would mean no untoward DRM receiver costs for users at this point of time.

Using DRM over shortwave is a way to get signals in without a satellite downlink or perhaps streaming over the internet.

This is, of course, providing the Shepparton transmitters can be secured. They have been offered for sale, but are not sold yet. Alternatively, time could be leased on other SW transmitter sites around the region; that is what the BBC does for example.

As a possible side benefit, over time, as DRM receivers get better and cheaper, keen listeners could listen directly, via a DRM receiver, without an FM relay.²¹ This time is not too far away. There have been rapid advances in consumer level DRM receiver technology in the last 12 months. Such technology is becoming less and less of a rarity.²²

ABC Charter and Content

The ABC Charter requires the ABC to provide a wide variety of content for the international audience as well as cater to the diversity of Asia Pacific diaspora communities living in Australia. From the Charter of the Australian Broadcasting Corporation Act 1983 Section 6 Charter of the Corporation: the functions of the Corporation are (1) b to transmit to countries outside Australia broadcasting programs of news, current affairs, entertainment and cultural enrichment that will: (i) encourage awareness of Australia and an international understanding of Australian attitudes on world affairs; and (ii) enable Australian citizens living or travelling outside Australia to obtain information about Australian affairs and Australian attitudes on world affairs.

Technology is only as good as the content it carries.

Funding cuts have brought the ABC's international service to the lowest point in its history. The cancellation by the Federal LNP government of the AUD \$220 million 10 year contract to provide Australia Network (TV) in 2014 and subsequent decisions by the ABC to end shortwave broadcasts to the Pacific and axe language services have left ABC International a shadow of its former self.²³

The ABC's budget, in particular its budget for international broadcasting, has suffered disproportionate cuts which have led to a serious reduction in staff and reporting capabilities on the ABC's Pacific programs.²⁴

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²¹ Pers Comm: Peter Marks: software developer, commentator and holder of BOCF qualification to run broadcast transmitters.

²² <http://www.drm.org/news/>

²³ Pers Comm: Jemima Garrett, former ABC South Pacific Correspondent/ABC-Radio Australia Pacific Economic and Business reporter

²⁴ Pacific Freedom Forum submission to ABC Amendment Bill (Restoring Shortwave) Bill 2017
[file:///C:/Users/USER/Documents/Downloads/Sub45%20\(2\).pdf](file:///C:/Users/USER/Documents/Downloads/Sub45%20(2).pdf)

Cuts to the ABC have reduced content made specifically for different audiences across the Asia Pacific to almost nothing. There is proven demand across Asia and the Pacific for the ABC's broad ranging independent news and current affairs programs, arts programming, children's programming, documentaries, entertainment, sport science, business and community-based programs as well as English language-learning programs (which currently have 4.4 million likes on Facebook). Content must be made specifically for audiences in the region and respond to their diverse interests and needs. Pacific and Asian expertise within ABC management and the international service needs to be rebuilt along with ABC language services. Revamped ABC international broadcasting could include content from the region and diaspora communities in Australia and an increased number of ABC staff and stringers working in the region.²⁵

ABC International broadcasting must remain fiercely independent and funding needs to be consistent. (Lowy Institute)

In a landmark study of international broadcasting in 2010 the Lowy Institute concluded: *"independence is crucial to the credibility of the broadcaster and its ability to attract audiences"* and *"Governments of both sides have failed to grasp the importance of either public diplomacy or international broadcasting. International broadcasting...is effective in enhancing a nation's international image, standing and perceptions amongst foreign publics. However,...longevity, consistency, stable funding...are important factors in success."*²⁶

Other international broadcasters are expanding their activities and most are targeting the Asia Pacific region (BBC, NHK Japan, Al Jazeera and more). As a result the ABC is no longer the leading specialist Asia Pacific broadcaster or the leading international broadcaster in the Pacific. As a point of comparison, the BBC World Service recently began its biggest expansion since the 1940s, receiving an additional AUD\$156 million per year. If the ABC were to receive a funding increase of the same scale (proportionally, on a per-capita basis) it would amount to an increase of more than AUD \$50 million per year.²⁷

The Growing influence of China in the Pacific

Australia's concern about China's growing influence in the Asia Pacific has been well documented in the media over the last year. This has been reinforced with the news that China Radio International, the country's state-owned overseas broadcaster, has taken up some of Australia's SW HF spectrum that the ABC ceased operating in January 2017. As many as 10 frequencies that ABC's Radio Australia used to use, now broadcast China Radio International programs.²⁸

In the light of this, if Australia were to reintroduce broadcasting of ABC content into the Asia Pacific using SW HF, a draft shortwave broadcasting schedule would have to be submitted to the HFCC.

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²⁵ Pers Comm: Jemima Garrett, former ABC South Pacific Correspondent/ABC-Radio Australia Pacific Economic and Business reporter

²⁶ <https://www.lowyinstitute.org/publications/international-broadcasting-and-its-contribution-public-diplomacy>

²⁷ Jemima Garrett, former ABC South Pacific Correspondent/ABC-Radio Australia Pacific Economic and Business reporter
<http://www.devpolicy.org/the-time-is-right-for-a-step-up-in-abc-broadcasting-to-the-pacific-20180709/>

²⁸ <http://www.abc.net.au/news/2018-06-22/china-takes-over-radio-australias-old-shortwave-frequencies/9898754>

The HFCC is a non-governmental, non-profit association, and a sector member of the International Telecommunication Union (ITU) in Geneva in the category of international and regional organisations. It manages, and coordinates global databases of international shortwave broadcasting in keeping with International Radio Regulations of the ITU. ²⁹

Frequencies are not "owned" (or bought) by any broadcaster, but vacant channels may be scheduled and coordinated as required and for as long as required by an accredited HF broadcaster.

If SW HF is resurrected it would have to be checked that plans don't interfere with existing broadcasters. As some of the ABC's old SW HF frequencies are being used by China, Australian broadcasting might need to move but it shouldn't be a problem finding new frequencies. The challenge is communicating to listeners the change i.e. receivers. ³⁰ Before considering re-starting any international SW HF service into the Asia Pacific quality programming (ABC) would have to be reestablished, the future of the Shepparton facility would have to be secured followed by drafting a schedule for review by HFCC. ³¹

A Strategy :-Funding

The decision taken by the ABC to end its shortwave service has contributed to limiting the ABC's influence in the Asia Pacific when it has a clear international obligation according to its Charter. Australia is also aware of China's growing influence in the Asia Pacific at the expense of Australia's "soft diplomacy".

The decision by the ABC to cut its SW service was driven by funding cuts. ³² For 2016- 2017, the ABC's annual funding from Government was \$1.043.7 billion. Costs of transmission and distribution services to deliver the benefits of public broadcasting to Australians are fixed and expensive. In 2016-2017 , they amounted to \$178.2 million per annum. The ABC's funding is already stretched thin. ³³

It is in this area of international transmission that DFAT could take a role. Just as DFAT has helped finance, in the past, the Australia Network, and now, the undersea, high speed internet link to the Solomon Islands and Papua New Guinea, funding by DFAT for DRM transmission infrastructure (from Shepparton) with the ABC providing appropriate content to the Asia Pacific region would provide a way forward, to once again enhance Australia's "presence" in the Asia Pacific.

A minimum international HF broadcast capability would need to be maintained at Shepparton's International High Frequency Transmitting Station in the interests of national security and to offer choice to Pacific listeners in the face of rising Chinese HF broadcasting presence in the region.

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²⁹ <http://www.hfcc.org>

³⁰ Pers Comm: Peter Marks: software developer, commentator and holder of BOCF qualification to run broadcast transmitters.

³¹ Pers Comm: Nigel Holmes, formerly Transmission Manager, Radio Australia

³² <https://www.sbs.com.au/news/bishop-presses-abc-on-pacific-concerns-over-shortwave-radio-cut>

³³ <http://www.abc.net.au/corp/annual-report/2017/contents.html>

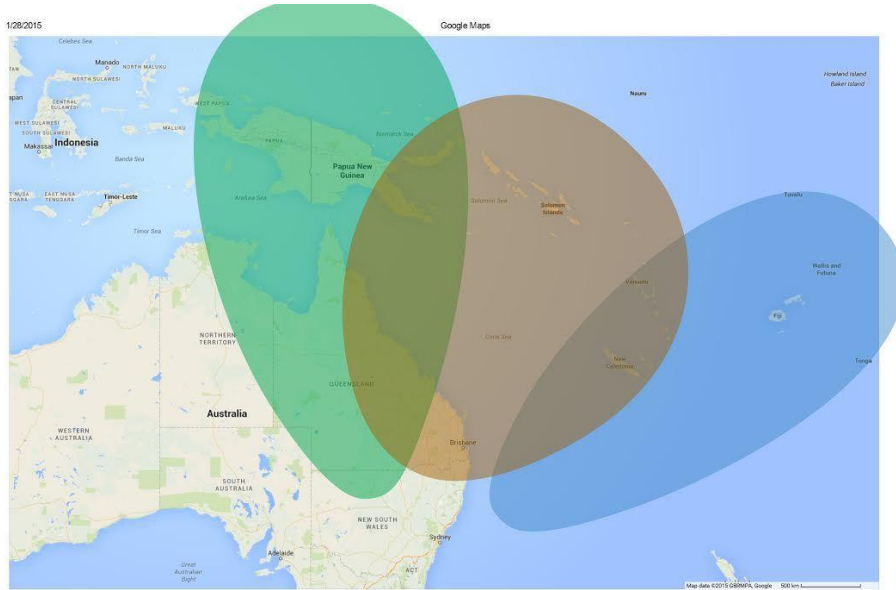
The HF capacity would also provide an immediate response capability in the event of natural disaster event or political interruptions to the access to free media in the Pacific region. Multiple transmitters should be retained with appropriate aerial plant and frequency management for this purpose.³⁴

In addition, electricity costs are a substantial part of the operating costs of a transmitter plant. If the Shepparton transmitters were once again commissioned, costs could be off-set by an appropriately scaled solar photovoltaic facility in the southern half of the Shepparton site. This would be a project that could receive funding assistance from the Federal and State governments, as a facility with > 220, 000 PV modules would provide excess power into the regional grid and provide continuing revenue to the site's operator.³⁵

³⁴ Nigel Holmes submission to ABC Amendment Bill (Restoring Shortwave) Bill 2017
[file:///C:/Users/USER/Documents/Downloads/Sub40%20\(3\).pdf](file:///C:/Users/USER/Documents/Downloads/Sub40%20(3).pdf)

³⁵ Nigel Holmes submission to ABC Amendment Bill (Restoring Shortwave) Bill 2017
[file:///C:/Users/USER/Documents/Downloads/Sub40%20\(3\).pdf](file:///C:/Users/USER/Documents/Downloads/Sub40%20(3).pdf)

Appendix 1.



<https://www.google.com.au/maps/@-17.583823,159.2451044,5z>

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Diagram A: footprint of SW transmitting from three 100kW transmitters at Shepparton, Vic, into the islands of the South Pacific (from West Papua east to Tonga).

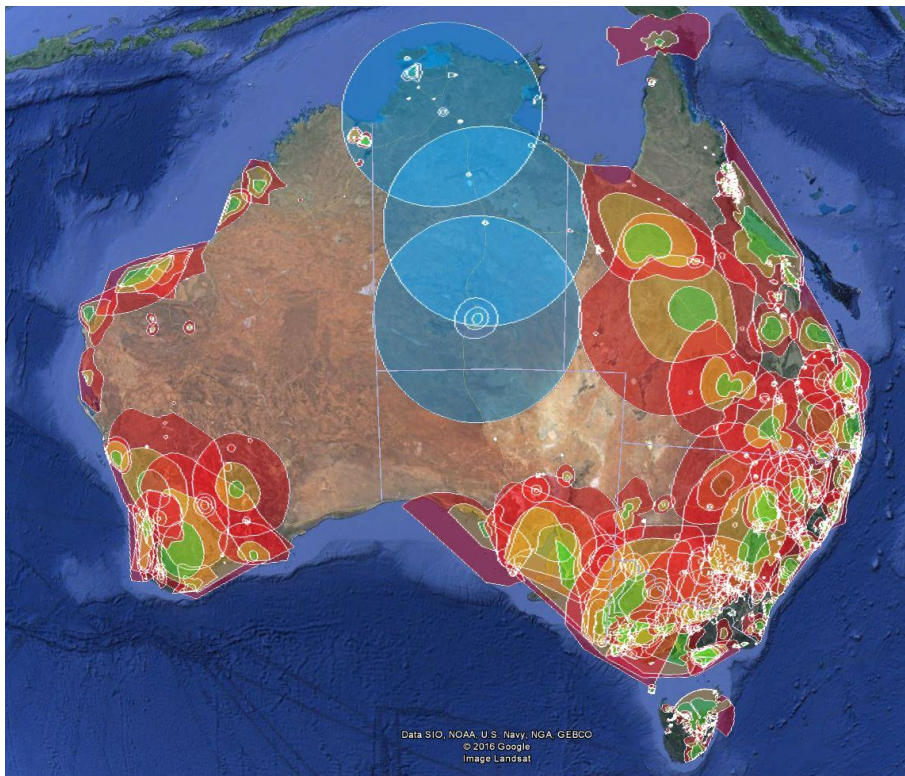


Diagram B: footprint of SW transmitting from three 50 kW transmitters at Tennant Creek, Alice Springs and Katherine.



APPENDIX 2: The table below summarises the feedback ABC Friends National had in relation to the ABC’s Transitional Arrangements for the NT upon ABC shortwave closure.

Philip Brennan (resident Darwin) has lived and worked in the NT for over 20 years and is a shortwave enthusiast. He has travelled widely and seen firsthand the benefits of shortwave radio as a cost effective means of communication for rural and remote people.

David Hewitt (lived and worked remotely in the SA, NT and WA since 1964. Now a resident in Alice Springs and working remotely as a volunteer)

Please note that the shortwave (SW) transmissions from Alice Springs, Tennant Creek and Katherine were received throughout the Kimberley and north of South Australia as well as the Northern Territory.

From ABC Transitional Arrangements	Philip Brennan	David Hewitt
Maps showing ABC AM/FM radio stations NT	At an estimate, somewhere between 85-90% of the NT landmass cannot receive an FM or AM broadcast.	FM reception is only available within about 20km of the transmitter and AM, 80 to 90km. As Phil Brennan says, 85% to 90% of the NT landmass cannot receive FM or AM broadcast. When driving west of Uluru as we often do, we would lose the FM station at Yulara 15km out, then we would change over to SW in our vehicle.
Viewer Access Satellite Television (VAST) and NBN SkyMuster Satellite Service	VAST technology is confined to a base station, i.e. house, and equipment cost starts at \$500. NBN SkyMuster is seemingly fraught with difficulties and is also base station limited. The following article gives an indication of the difficulties customers are experiencing with this system: http://spacenews.com/australias-nbn-satellite-consumer-broadband-service-suffering-outages-and-customer-response-issues/ .	Viewer Access Satellite Television or VAST is only suitable for a fixed location where power is available and where a satellite dish can be secured permanently. This is completely unsuitable for the majority of SW listeners. <i>“NBN Skymuster satellite service provides broadband connectivity to regional and remote areas” - this is only available with the NBN, and this has a very limited coverage in NT. It is no substitute for ABC radio.</i> RN Breakfast 13 March 2017: Suffers from “rain fade”. Not reliable in remote situations. P11/12

From ABC Transitional Arrangements	Philip Brennan	David Hewitt
Podcasts and On Demand Radio: download before you travel		To suggest that podcasts and on demand radio, downloaded for later replay are a suitable replacement for radio reception, is ridiculous. Listeners want instant news, weather reports and emergency information.
Streaming: listen to ABC radio live where ever mobile phone reception is available	The two other options are landline broadband and mobile data. Landline broadband is extremely limited geographically in the NT. The following page from Telstra shows that the service is restricted to larger urban centres: http://broadbandguide.com.au/northern-territory . Mobile data is similarly restricted. See the following map showing Telstra coverage in the NT https://www.telstra.com.au/coverage-networks/our-coverage . The other providers cover less than Telstra.	This assumes that mobile phone reception or a satellite service is available throughout the Northern Territory and for people on the move, which of course is not true.
Weather and Emergency Information. The NT Govt operates a website providing up to date alerts and information about cyclones and emergencies.		The NT government website for weather and emergency information is only available where there is internet coverage. This is of no help to travellers, people on cattle stations, Aboriginal rangers, road construction workers or others who need news, weather information or warnings. <p style="text-align: right;">P12/12</p>