This submission aims to highlight the necessity for increased radio coverage in remote Australia. The intention of the bill (**Australian Broadcasting Corporation Amendment (Rural and Regional Advocacy) Bill 2015**) is to improve the ABC's regional content output, but it must be noted that this is largely pointless unless the people in those regional areas can receive a relevant, high quality signal.

As a frequent traveller throughout outback Australia, particularly in South Australia, I have noted on many occasions the complete absence of any intelligible radio signals on the FM and AM broadcast bands. The ABC presently maintains a reasonably good broadcast network in quality and coverage, but announcements regarding massive gutting of its radio services in remote areas have caused me to make this submission.

While I support the content of the bill in general, I believe that Amendment 5 could be expanded upon so as to make it clear that internet-based and direct-from-satellite services are **not** adequate by themselves for *"maintaining regular transmissions of local content across a variety of platforms"*. My justification follows:

Mobile phone and data coverage across outback Australia is essentially non-existent. It is fair to say that with a few minor exceptions, anywhere that any of the three mobile networks cover are also well and truly covered by ABC radio. Satellite television and radio is wildly impractical when you're away from home or on the road.

ABC Radio coverage throughout outback Australia, particularly in New South Wales, South Australia and Western Australia is extremely poor as a percentage of landmass. Approximately a third of South Australia's landmass is covered by ABC Radio. Despite becoming increasingly popular, tourist sites like the Flinders Ranges suffer from having no ABC Radio coverage across huge swathes. The Simpson Desert, a very popular destination today despite being very quiet just 20 years ago, has no ABC Radio coverage. In some regions of the outback in all relevant states and territories no radio signals can be received at all during the day, and in other regions the only signals receivable regardless of the time of day is from stations in other states or territories.

Obviously there are considerable safety and mental health issues stemming from this lack of radio coverage. There's only so much of your own company you can stand at a time, and satellite phone costs aren't exactly conducive to having an extended chat. Mental health problems are already a considerable problem in remote areas – sitting in silence while the rest of the country has a radio dial chock full of stations, internet-capable phones in their pockets and newspapers doesn't help any of that. It loses it's magic very quickly for me, and I voluntarily put myself in this position and can leave at any time. That is not the case for people living and working in remote areas. The ABC already does a marvellous job with emergency information and regular news – but it's a shame that you can't always receive them.

If you can't get ABC Radio, then it's all but guaranteed that you won't have mobile phone reception either. When you are out of range of AM/FM broadcast band radio and mobile phone coverage, you have two main communications options. One is satellite phones and satellite TV/radio. The ABC maintains ABC Radio and Television services on three Satellites, Optus C1/D3 via the Viewer Access Satellite Television programme and Optus D1. These three satellites are geosynchronous, meaning that they are 35,000km away and require a precisely-aligned satellite dish to pick up - in the same way as a Foxtel/Austar dish on a house roof. Satellite phones cannot receive radio signals and what data they can get is appallingly expensive and too slow for internet radio streaming. Thanks to VAST, listeners in homes in remote areas are well served with the entire suite of ABC services, but that's little good to them when those people have to leave their home and drive hundreds of kilometres a day in radio silence. You can't keep locked on to a satellite when moving.

The other communications option, which predates satellites, is HF (high frequency) radio, also known as shortwave when used for broadcasting radio programmes. This works in a similar way to an AM/FM radio where the listener tunes in a frequency, extends the aerial and listens to the programme with no fuss. The primary difference is HF radio waves, unlike AM or FM, bounce off the ionosphere in the atmosphere and as a result can cover huge distances.

From the end of WW2 to the late 1980s and early 1990s, the ABC maintained shortwave radio transmitters in Perth, Lyndhurst and Brisbane for remote listeners. While I was not able to listen to these services when they were broadcast, I understand that they provided blanket ABC SW Radio coverage across most of the Australian landmass. These used the traditional shortwave propagation method which emphasises long-range propagation instead of local high-quality signals.

In 1985 three new shortwave transmitters were installed in the Northern Territory at Katherine, Tennant Creek and Alice Springs which continue to operate as of January 2017. For the remainder of this document these services will be referred to as the "NT Showers". They're known as the shower service as the signal is sent straight up into the ionosphere to essentially "shower" down a very strong and high quality signal out to a radius of approximately 500 kilometres at the expense of long range coverage.

On December 6, 2016 the ABC released a press release stating their intention to close the NT Showers, plus the Radio Australia Shepparton site, with the justification that shortwave was "nearly a century old and serves a very limited audience",[1] yet a spokesman said on December 20, 2016 that a survey of listeners had not been undertaken[2]. The NT Showers cover the entirity of the Northern Territory, plus parts of northern South Australia – over a million square kilometres.

Arguments that the Bureau of Meteorology provides adequate weather updates on HF is nonsense, given that the service is intended for mariners, fully automated and requires a specialised single-ideband receiver. Suggestions that radio networks such as VKS-737 will fill the void left by the ABC's departure from shortwave is also nonsense, given that you need to invest in a transceiver worth thousands of dollars, apply for an Authority to Transmit and learn radio procedures. You also need a single-sideband radio to even just listen in to VKS-737 activities. In contrast, the ABC's HF Showers can be received around the clock on a $20 radio that fits in the palm of a hand and can be operated by any untrained individual. Car radios that can receive the shortwave bands are readily available, and HF land-mobile transceivers can be programmed to receive shortwave while driving or in the back paddock.

Your CD collection rapidly gets worn out when it's all you get to listen to while working out of range of ABC Radio or the NT Showers – and once you're out of range of them you're out of range of any radio in most cases. But those other stations have commercial sponsors to answer to and community stations can't get the funding. The ABC is a national network paid for by everyone, so everyone should be entitled to at least a bit of its services no matter where they are. Naturally it is impractical to offer the full suite of ABC services terrestrially to every location on the continent, but it isn't much to ask for a single radio service.

It is profoundly arrogant on the part of the ABC to defund the NT Showers, the only up to date media accessible on the ground across a million square kilometres of Australia, out of desire to increase services to capital cities which are already well served by ABC television and radio, newspapers, internet and commercial networks.

1 http://about.abc.net.au/press-releases/shortwave-radio/
2 http://www.abc.net.au/news/2016-12-20/abc-defends-shortwave-axe-radio-nt-emergency/8134690

The ABC may well be in a tight spot financially, but those who rely on services in remote areas are not impressed with the current approach. A legislative requirement for the provision of terrestrial radio services to the entire landmass of Australia, with programme feeds taken from the most relevant station would guarantee safety, entertainment and news for those on the land and travelling through it. I have previously chosen not to put a case forward regarding ABC radio coverage given that the NT Showers adequately cover most of outback Australia at night, but of course that still didn't have local programming unless you were in the NT. It is still better than nothing when in the bush.

To my main point: if the *Australian Broadcasting Corporation Act 1983* required that the ABC maintain services to the entirety of outback Australia through terrestrial means (i.e. non-satellite, non-internet) then the rest of the amendments proposed by the *Australian Broadcasting Corporation Amendment (Rural and Regional Advocacy) Bill 2015* would transform the ABC's focus from becoming a copycat commercial network first and foremost to a network providing important services where the free market has failed.
For instance, (iiib) of Amendment 5 could be changed to: *"the responsibility of the Corporation to maintain regular transmissions of local content across a variety of platforms* ***including but not limited to mediumwave and shortwave radio broadcasts"***. This would guarantee that the ABC does not pull out of normal radio transmission on a whim.

Another subparagraph could be added requiring that the entire landmass of every state/mainland territory should be able to receive a signal strength (of a local programme transmitted on a carrier frequency of between 531-1711kHz or 88.1-107.9MHz or 2300-2495kHz or 3200-3400kHz or 4750-4995kHz or 5005-5060kHz) of at least 0.15mV/metre. This, or something with a similar effect, would guarantee the provision of adequate ABC Radio services to the entire country (on a state-by-state basis) be it via AM, FM or SW.

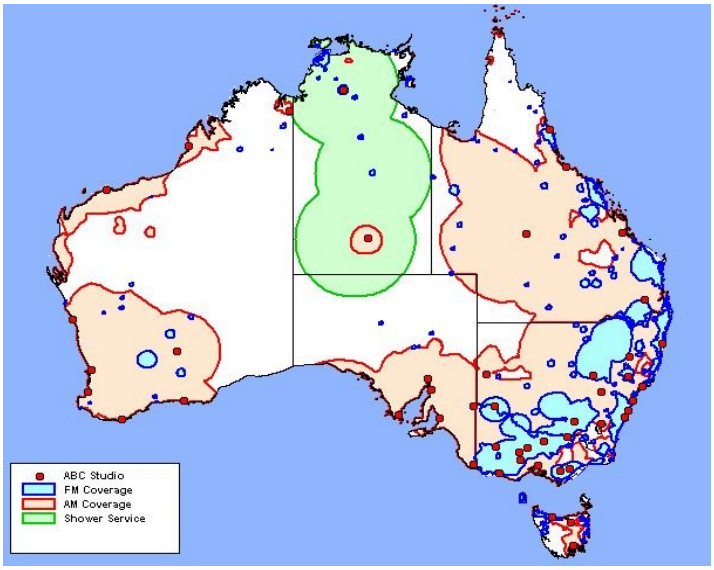

Figure 1

Figure 1 is a map published in a document online which was produced by the ABC[3]. As can be plainly seen, the ABC themselves acknowledge that huge areas of Australia do not enjoy any ABC Local Radio coverage. If a Radio National map exists then it would be even more lacking. Based on my personal experience, the red (AM) coverage is somewhat overstated and the green (NT Shower) coverage is somewhat understated. Regardless, all evidence suggests that without a legislative framework to prevent it, these terrestrial broadcast transmitters will slowly be closed down in favour of satellite, internet and digital transmission which is useless, and will continue to be useless for many years yet, for people in the bush.

If you're in a valley which is blocking access to the north-east you will not be able to receive VAST or Optus D1 under any circumstances. Given the unpredictable weather in central Australia which can go from drought to flooding rains in a matter of days, is it acceptable that the ABC, largely accepted as *the* national emergency broadcaster (a fact it proudly advertises), pares back radio transmissions? AM, and particularly SW, will always get through provided the transmitter is still

3 *Sourced from MS PowerPoint document at http://www.hfcc.org/doc/HFCC_REP_2015-003-B15-Radio_Australia_presentation.pptx*

standing. In a real emergency – a repeat of Cyclone Tracy or similar – digital radio will be blown away while the old shortwave transmitter in Katherine would keep everyone on the ground up to date. New technology does not mean better technology, and more often than not the old stuff just gets the job done well with no fanfare.

In short, the ABC should increase investment in regional area radio broadcasting by conventional methods first so that any increased investment in regional area radio content doesn't go unnoticed. FM repeaters, AM stations and Shortwave relays should be introduced and extended so that the entire country has quality access to at least one ABC programme. Given that the ABC presently appears unwilling to provide such things by themselves, the parliament should legislate to require a minimum signal strength for all areas of each state and territory to effectively force the ABC to provide for regional radio transmissions even in areas where the beneficiaries may not be immediately obvious due to the dispersed nature (and consequently the uncontactable and unsurveyable nature) of listeners to high power AM and SW transmissions. It looks good in the media and in the figures at head office to have fantastic services to capital cities and densely populated regions, but when all this is at the expense of all services in regional areas then a higher authority must step in.

Given the lack of investment in radio services for remote areas by the ABC of its own accord, a legislative requirement by the parliament is the only way to ensure that these listeners are not left in silence.