Ms Christine McDonald
Secretary
Senate Standing Committee on Environment & Communications
Parliament House
CANBERRA ACT 2600
By email: ec.sen@aph.gov.au

Dear Ms McDonald

RE: All Australians must have access to all its programs and its role as "The Emergency Broadcaster".

Amendments to the ABC Act: ABC services must be available to All Australians

1. **Keeping up to date with Modern Broadcasting Technology**
    - **One board member must have Electronic Engineering Qualifications**
        - For the last 45 years the ABC board has never had any members with any Technical qualifications let alone one with Broadcast Engineering qualifications.
        - They have always subcontracted its transmission network to an external provider which means that the ABC Board and staff have little knowledge of transmission networks.
    - **The board and management should consult regularly with their Transmission subcontractor to provide the board and the Annual Report on the following;**
        - The percentage cost of transmitting each network (including overseas television and radio services), the amount of Carbon Dioxide being produced for each of the transmitter networks.
        - Accurate coverage areas maps for all their transmission networks using the digital map of Australia which includes altitude and RF propagation characteristic equations for the transmission frequency used. Eg for TV https://myswitch.digitalready.gov.au/
        - The capabilities of new broadcasting technologies and their feasibility to add to the networks such as DRM for radio and DVB-T2 for TV. A single DVB-T2 transmitter can transmit to TVs and mobile phones simultaneously without the costs imposed by the telco.
    - **The ABC determine the population serviced by each studio centre, transmitter or satellite transponder** using the latest Australian Bureau of Statistics data and include itinerant populations such as tourists, fly/drive-in out workers.
        - Optus should also be required to report on the number of VAST satellite encryption keys in operation to give a more accurate number of actual satellite users, even if they may be watching commercial TV.
    - **The ABC should determine the cost of streaming of radio & TV both currently as well as when all Australians simultaneously view/listen to the same program simultaneously.** The costing should include the cost to the ABC, including MediaHub and any telco charges. It should also include any Carbon Dioxide produced by the Electricity supply and include cooling. They should survey and publish the average cost to the listener/viewer charged by the telco using the data rate capable of

providing the same sound and image quality as broadcast with no buffering (gaps, frozen images or jerky motion). The results should be published on the ABC website and in the annual report.

- **Keep up to date** by joining the associations and using them conduct seminars on new broadcasting technologies the current associations are
    - Digital Radio Mondiale www.drm.org for digital radio covering large and small areas
    - WorldDAB www.worlddab.org for broadcasting to high population densities
    - Digital Video Broadcasting www.dvb.org Digital TV of the type we use.

  The board should address all new developments from these organisations at least annually.

- **The ABC should drastically reduce their transmission costs by;**

  Stopping the simulcast of NewsRadio, Radio National, ABC Classics, JJJ and Local Radio in the 5 mainland State capitals. This will enable them to switch of 34 high powered transmitters and make vacant a large area of very prime land which is currently used for AM transmitters. http://www.gfk.com/en-au/insights/report/radio-audience-measurement-survey-summary-reports/ shows the number of listeners including digital listeners there are currently. In June 2016 Commercial Radio Australia claims 3.5 million listeners which includes over half a million cars.

  This would easily pay for any extra DAB+ repeaters required in the 5 capital cities and re-instate HF transmissions to inland Australia and Radio Australia which should be improved by using DRM transmission. These transmissions use less electrical power than the old AM ones.

  The switchoff of NewsRadio on AM will affect less than 20,000 people sounds like the shortwave switchoff, except the city slickers can still listen to their program but leaving remote listeners with no radio at all.

Background to part 1

a. They have never provided accurate coverage area maps for radio, such as those on https://myswitch.digitalready.gov.au/ . In fact with the recent closure of the High Frequency (Short Wave) services the ABC has no maps of coverage for either the NT transmitters or those for Radio Australia. The AM coverage area maps do not include the reduction in coverage area caused by a huge increase in electronic interference and the shrinkage of the length of car radio antennas.

b. In the 1990s the ABC rejected an offer to go FM in the state capital cities, when commercial licences were being sold for millions each. As a result they are now trying to convince listeners to pay to listen to their radio because many mobile phones contain FM radios but none have AM reception.

c. The ABC has been extensively promoting listening from mobile phone, but has never overlayed an accurate map of their coverage areas with that of the mobile phone companies, to show where they cannot be heard, on the phone, and/or on the radio.

d. ABC DAB+ digital radio started in Aug 2009 so it is not unreasonable to start the switch off of low use AM stations

e. The Commonwealth Government is subsidising mobile phone towers which have a coverage radius of around 10 km which is about the coverage area of an economically justifiable low power FM transmitter. What about the huge areas in between? Even in regional areas, the terrain blocks signals.
f. Where is the cost comparison between providing the ability to broadcast to all Australians in our country no matter where they live and the cost of providing simultaneous internet streaming to all those people. The cost of providing streaming rises exponentially as the number of simultaneous users' increases.

1. The ABC is the poorest innovator
    1. They were the last major TV network to transmit in High Definition TV and even now only a few programs.
    2. The Broadcast Australia for the ABC has 6 high powered radio transmitters which are Digital Radio Mondiale (DRM) capable transmitters, why have the not even trialled this method of superior transmission which is capable of covering all of Australia using one transmitter? SBS has had a low powered trial of DRM.
    3. Broadcast Australia has 68 backup transmitters which are idle incase of a fault. Why doesn't the ABC get Broadcast Australia to upgrade them to DRM. This would allow them to transmit Radio National and Newsradio which are essentially voice programming on a single transmitter. When enough DRM receivers have been sold, then they could convert the local radio transmitter on each site.

2. ABC Act Amendment: Emergency Broadcaster

The ABC must provide to all Australians anywhere on land or within Australian territorial waters (370 km from land) geographically appropriate emergency warnings, which contain audible messages, text messages and maps provided using either DRM or DAB+ radio within minutes of them being issued.

The ABC promotes itself as the emergency broadcaster

- **How can it do this in most of inland and particularly Northern Australia which has no radio reception at all now that the HF transmitters in Katherine, Tennant Creek and Alice Springs have been closed?**
- **The ABC must accept that the both mobile and satellite phone systems are an inefficient method of contacting large numbers of people, and such actions prevent emergency calls from victims to the authorities. They also need to accept that a mobile phone battery discharges much more quickly than a radio because it must transmit that it is on to the tower every 15 minutes, so the telco knows which tower to use to ring it.**
- **The ABC must accept that during heavy rain, VAST, Skymaster satellite internet and Satellite phones don't work when you need them most because the rain drops absorb the signal. HF signals are unaffected by rain.**
- **Transmitters in cyclone areas are likely to be blown down, loose power, be struck by lightning and in some cases flooded. This is unlikely from Alice Springs, Tennant Creek and Katherine's HF transmitters.**
- **Grant Broadcasters in Darwin has tested automated (from the Emergency Services) http://www.acma.gov.au/~/media/Broadcast%20Carriage%20Policy/Report/pdf/**

ACMA%20report%20on%20Darwin%20July%202012%20v10%20%20publishable%20pdf.pdf **emergency messaging and the display of maps during their DAB+ digital radio trial.** https://youtu.be/hFCD7TAxKec

- **The ABC's Tennant Creek HF transmitter is DRM capable and could also transmit emergency messaging including maps, why hasn't the ABC trialled it?**
- **Why isn't the ABC using the Emergency Warning System on their existing DAB+ digital radio transmitters in the 5 mainland state capital cities?** The ability to transmit text and slideshow can be used to show the announcer, album covers, news stories along with the text of news bulletins whilst they are being read for those with poor hearing.
- **Why doesn't the ABC have a van with a low powered DAB+, DRM+ or FM transmitter**, powered from a trailer available at most studio centres? It could provide local coverage in floods and areas of fires as demonstrated in Victoria, where all areas East of Mt Tassie to the NSW boarder lost program? The rest of the time these vans could be equipped to do live newsgathering for radio/TV.
  Most mobile phone towers are on the tops of hills and are supplied by electricity. Hot air from fires spreads the fire to the tops of hills causing all mobile phones using that tower to stop working. The van could be put in the centre of a local population.

Yours sincerely
Alan Hughes