

10 February 2012

The Manager  
NBN Policy and Program  
Department of Broadband, Communications and the Digital Economy  
GPO Box 2154  
Canberra ACT 2154  
[by email to [batteryback@dbcde.gov.au](mailto:batteryback@dbcde.gov.au)]



Dear Sir/Madam,

### **Battery Backup Capability on the National Broadband Network**

Please find attached the response from Communications Alliance to the recent invitation from the Department of Broadband, Communications and the Digital Economy (DBCDE) for views on the provision of battery backup capability on the National Broadband Network (NBN).

Thank you for the brief extension of time for submitting the response – it has permitted consultation with a wider group of Communications Alliance members via its Operations Council.

This latest input is consistent with previous Communications Alliance submissions on the topic to DBCDE which are in the public domain therefore Communications Alliance is happy for this submission to be treated as non-confidential information as well.

Of course please contact me should you have any queries in relation to this submission.

Yours sincerely,

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# Communications Alliance response to DBCDE on battery backup capability on the National Broadband Network

February 2012

## 1. Introduction

Thank you for the opportunity to comment on battery backup capability on the National Broadband Network (NBN).

This latest input is consistent with Communications Alliance submissions in 2011 that addressed the topic of NBN battery backup and are in the public domain (e.g. House of Representatives inquiry into the NBN<sup>1</sup>, Senate Select Committee inquiry into communications networks and emergency warning systems<sup>2</sup>). Therefore Communications Alliance is happy for this submission to be treated as non-confidential information as well.

## 2. Background

As mentioned in the attachment to the Department of Broadband, Communications and the Digital Economy (DBCDE) letter inviting input, the current 'mandatory deployment model' for the installation of NBN battery backup capability was an "interim solution" in response to the Statement of Expectations of December 2010.

While the 'mandatory deployment model' was a prudent choice at the time for the first release sites it is timely that DBCDE is calling for input on "the implementation model that should be applied to the broader rollout of the NBN".

The Communications Alliance submission to the House of Representatives inquiry into the NBN in February 2011 addressed the topic of NBN battery backup on page 16, stating:

*"Communications Alliance strongly supports the adoption of an opt-in approach to battery back-up; not least because of the potential damage to the Australian environment through improper disposal of the sealed-lead acid batteries expected to be used for this purpose.*

*A Communications Alliance background paper outlining our views on this topic in more detail is provided for information at Attachment 1."*

The points raised in the background paper remain relevant and the paper's contents are copied at the end of this submission for ease of reference.

In summary, the paper argued "that an opt-in approach to battery back-up for the Optical Network Termination (ONT) unit in householders' premises is a more logical, efficient, forward-looking and environmentally responsible approach than mandating such back-up".

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<sup>1</sup> [http://commsalliance.com.au/data/assets/pdf\\_file/0004/26635/Communications-Alliance-House-of-Reps--Inquiry-into-the-NBN.pdf](http://commsalliance.com.au/data/assets/pdf_file/0004/26635/Communications-Alliance-House-of-Reps--Inquiry-into-the-NBN.pdf)

<sup>2</sup> [http://commsalliance.com.au/data/assets/pdf\\_file/0006/28167/Submission-to-SSCEC-Inquiry-into-Emergency-communications-Communications-Alliance-AMTA-110531.pdf](http://commsalliance.com.au/data/assets/pdf_file/0006/28167/Submission-to-SSCEC-Inquiry-into-Emergency-communications-Communications-Alliance-AMTA-110531.pdf)

### **3. More recent developments**

More recent developments reinforce the argument made in the previous discussion paper that a more appropriate solution deployment of back-up batteries under the national rollout of the NBN is an “opt-in” model that allows customers to exercise choice and meet customer needs.

A number of use cases help to illustrate the recommended model.

#### ***Customers should be able to choose***

As previously submitted by Communications Alliance, not all subscribers to services being delivered over the NBN will choose or require a back-up battery to retain access to a telecommunications service during a power outage. This extends to other services that rely on access to telecommunications services as a basis for their continued operation e.g. a home medical alert system (using voiceband communications via the UNI-V port). There will be many reasons for this including the widespread access to mobiles and views it is something that customers do not need or consider necessary. These issues are explored in more detail later in this paper.

Subscribers should be able to make an informed choice as to whether they require such a back-up capability, based on an understanding of what those arrangements will provide as well as any associated limitations. Also important in this regard will be an understanding of the conditions of supply, what back-up will and will not provide in terms of continuing access to services, the type and size of equipment involved and associated audible and visual alarms that apply where a battery falls below certain levels or requires replacement.

To this same end, adoption of a deployment model based on a customer opt-in approach rather than as a standard element of NBN Co's network means there is a strengthened argument as to why it is appropriate for an end user to pay for the battery and be responsible for battery maintenance and replacement costs. This is analogous with smoke detection unit legislation and householder responsibility for managing such arrangements. This matter is explored in more detail under the later section in this response titled 'Other matters to consider'.

Communications Alliance members believe the importance of these factors warrant that Government and NBN Co sponsored information campaigns about deployment of the NBN network should include material to raise awareness levels about these matters.

#### ***Why customers will not want battery back-up***

There are a range of reasons why most end users are unlikely to find utility in a mandatory NBN battery back-up functionality. In addition to having alternative forms of communication through mobile services these additional factors include the following:

- (i) A number of Retail Service Providers will not utilise the UNI-V port for their supply of a telephony service, choosing instead to use an adapter via the UNI-D port. As noted in the DBCDE paper, this means the telephony service would not operate in a mains power outage even if there was separate backup power for the handset.
- (ii) Even if the UNI-V port is used for telephony services the popularity of telephones requiring their own power reduces the utility of providing

backup power on the UNI-V port. A simple check with some major retailers of the current choice of telephones suggested that all available models require mains power. Similar to (i) above, this means the NBN battery backup unit would be of no use in a mains power outage.

- (iii) The large size of the battery backup unit relative to the current phone socket or wall jack is likely to be unattractive to many end users. Very few residences have dedicated equipment cabinets or racks, particularly in multi dwelling units, so the backup unit would have to be in a highly visible location inside the residence.

Of course there will be end users who do have a telephony service delivered via the UNI-V port, connect a telephone that does not require mains power and are not concerned about the bulk of the battery backup unit. These users should have the option to make an informed choice about its installation – hence the importance of relevant material being included in Government and NBN Co educational campaigns.

### ***Ensuring Consumers are Fully Informed***

The blanket provision of backup batteries model risks giving customers and the general public unwarranted confidence in the ability of services to operate in the rare case of a power failure. The implication of having a battery backup to all consumers is that they will construe it will provide full redundancy. As discussed in the previous section this will only be the case for consumers who have telephony supplied through the Uni-V port and use a telephone that does not require separate batteries to operate. It is thought that this configuration will be a minority of services.

The blanket approach will also necessitate significant and costly campaigns to be periodically undertaken by the industry to inform customers that the battery backup will provide a limited redundancy and for only a sub set of customers. A recent example of the misinformation is a recent interview on ABC 702 (NightLife 8<sup>th</sup> Feb 2012) where a well known industry commentator advised the audience that the battery backup will provide two to three hours service for the telephone. This will only be the case for a sub set of customers for the reasons previously described.

### ***Alternative Technology for Emergency Calls***

Prior to the popularity of mobile telephones the fixed phone services was the only method for making emergency calls. This has now changed, with the ubiquity of mobile telephones in the Australian market providing an alternate method for these calls.

By law mobile phones must be able to access the emergency services numbers even if they do not have an active (or any) SIM card or account with a mobile service provider. All that is required is a functioning handset in a mobile network area.

Please refer to the Communication Alliance's original submission for more detail.

### ***Some people have special needs***

There will also be situations where subscribers' personal circumstances will warrant that arrangements be established that ensure they are able to access a backup battery where that might otherwise be cost prohibitive. By way of example there will

be subscribers who meet priority assistance eligibility and who under an opt-in user pays construct would want to but are hindered by low income. Quoting from the ACMA website<sup>3</sup>, "*Priority Assistance is a service designed to help people with diagnosed life-threatening medical conditions who depend on a reliable, fixed-line home telephone service to be able to call for assistance when needed.*"

Given the number of low income Priority Assistance customers as a percentage of the total population is relatively small and acknowledging the likely higher costs associated with accessing battery backup when compared to a basic voice offering available over NBN Co network, there is a public interest role for Government to ensure PA customers have access to services that offer battery back-up capability and that low income subscribers are financially supported through subsidies to cover such costs.

#### **4. Other matters to consider**

The invitation to comment on NBN battery backup included "*other matters (DBCDE) should consider in setting the long term approach to battery backup deployment*".

##### **Ongoing Maintenance**

At present, the NBN Co Wholesale Broadband Agreement (WBA) Product Catalogue<sup>4</sup> states that "*NBN Co will supply and install the First Battery that will support the operation of battery back-up functionality*" and "*NBN Co is not responsible for: i maintaining the First Battery; or ii supplying, installing or maintaining any replacement batteries*".

The NBN Co WBA Product Catalogue transfers the responsibility and cost for the supply, installation and maintenance of replacement batteries to the 'designated' wholesale Customer.

Feedback received from Retail Service Providers is that these arrangements are problematic in so far as NBN Co transferring such costs to RSPs. In addition the designated RSP concept will introduce unnecessary complexity and administrative burden for industry and confusion for end users as customers change their service provider and may have services from several service providers. For these reasons such arrangements must be treated as interim in nature pending the outcomes of Government's consultation on this matter.

As already described above the adoption of an opt-in deployment model opens up the question of how that choice is given effect including whether it is reasonable that end users wanting back-up be asked to meet the cost of such arrangements. This approach recognises that the network elements being provided to such customers extend beyond a standard network deployment and there are additional costs in doing so. This approach also recognises that other network subscribers should not be asked to subsidise those who make such choices and who have a capacity to pay for such services. The qualification here is that arrangements would need to be put in place to ensure access is available to those who require it and where there is an inability to pay e.g. that this is recognised through a government subsidy scheme.

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<sup>3</sup> [http://www.acma.gov.au/WEB/STANDARD/141717/pc=PC\\_2038](http://www.acma.gov.au/WEB/STANDARD/141717/pc=PC_2038)

<sup>4</sup> <http://www.nbnco.com.au/assets/documents/wba-product-catalogue-sfaa-v1-30-nov-11.pdf>

Similarly where a customer chooses to have a battery back-up, that customer would be responsible for maintenance and replacement costs associated with the battery. There are precedents for such arrangements in relation to smoke detection equipment that is mandated and where customers are responsible for maintenance and replacement of batteries. As is the case with smoke detectors a subscriber can opt to engage contractors to undertake such tasks at competitive prices.

Adoption of these arrangements also has the effect of ensuring the objectives underpinning an opt-in model are more likely to be achieved. These include subscribers having to exercise a conscious choice based on the perceived benefits and balanced against a willingness to pay. The flow on effects will include lower number of battery deployments and subsequent disposals at end of battery life that will occur every three years. There are also strong environmental reasons for achieving these same outcomes.

In summary, any finally agreed deployment model must provide for a range of factors including customer preference and appropriate arrangements for maintenance, fault management, replacement, recovery and recycling of the batteries. These arrangements are a necessary part of a well managed NBN rollout. Adoption of an opt-in model provides a sound basis for creating a model that is able to provide for these competing elements.

### ***Environment Impact and Increased Carbon Emissions***

The estimated life of the batteries is three years resulting in approximately 3.3 million change-outs per year if the compulsory model is introduced. Most of these (a very small minority will be able to be done as part of another service call) will require a truck roll and technician to visit the premises to change out the battery. This will result in a massive increase in fuel consumption, carbon emissions, traffic congestion and inconvenience to the customer.

These costs will ultimately be borne by the customer.

In addition 3.3 million lead acid batteries will be added to Australia's waste management challenges for no benefit for majority large proportion of consumers.

## **5. Conclusions**

Communications Alliance continues to recommend the adoption of an 'opt-in model' for battery backup capability on the National Broadband Network, supported by government policy that ensures customers with a demonstrated need or others with a personal preference can access such arrangements. Communications Alliance sees a role for the government in informing end users about the choices, and their possible implications, in relation to NBN battery backup.

Communications Alliance thanks DBCDE for the opportunity to contribute to this important part of the NBN rollout and looks forward to continuing work with DBCDE on the NBN.

# Discussion Paper in Support of an Opt-In Approach to Battery Back-up for ONT's in the Australian National Broadband Network

Prepared by Communications Alliance CEO, John Stanton, November 2010

This paper argues that an opt-in approach to battery back-up for the Optical Network Termination (ONT) unit in householders' premises is a more logical, efficient, forward-looking and environmentally responsible approach than mandating such back-up.

## Background

- (i) Recommendation 27 of the NBN Implementation Study called for NBN Co to be required to provide an ONT power supply unit to all FTTP customers with the potential for a back-up battery to be installed. It further recommended that Government establish a program to subsidise the provision of back-up batteries for customers identified as requiring lifeline services when connected to the NBN. The study suggested that Access Seekers distribute batteries to the lifeline users and be responsible for their maintenance, and that all other users be given a choice on whether to take battery back-up, and accept responsibility for maintaining the battery.

- (ii) The Technical Working Group of the Communications Alliance NBN Project examined the battery back-up question in some detail and noted:

*An important consideration is that the use of battery backup on a large-scale (e.g. mandating battery backup on all ONTs) would create considerable extra costs for end-users and operators, and very likely lead to serious environmental problems as end-users carelessly discard batteries into land-fill. The use of batteries also leads to increased energy emissions, as constant trickle-charging is necessary to compensate for their self-discharge. Thus for environmental reasons the use of batteries for backup should be minimised*

- (iii) Minister Stephen Conroy, speaking on the ABC Insiders Program on 24 October 2010, said that "the Government has instructed the national broadband network that battery back-up will be mandatory".

## Arguments in Favour of an Opt-In approach

### 1. No need for mandated back-up

Mandatory battery back-up does not necessarily solve any problems that could not be otherwise dealt with by a "lifeline & opt-in" process as recommended by the Implementation Study.

The desire to ensure back-up for lifeline customers can be readily accomplished by a selective deployment, and any other customer who believes he or she does require battery back-up can avail themselves of that facility.

## **2. ONT Back-Up Not Necessarily a Solution**

In FTTP networks the fibre network cannot power the ONT – hence the suggestion for battery back-up to power the ONT during periods of mains power outage. For this back-up to be effective, however, it is necessary for the end-user equipment to also have battery back-up.

In the case of telephony this means that the telephone, ATA (telephony adapter) and ONT all need back-up. While battery back-up devices can be offered by operators as an option, the batteries themselves are relatively short-lived, and the actual lifespan will be determined by the environment and usage pattern of the batteries

Whatever the outcome of the battery back-up debate, it will be necessary for those consumers using a back-up battery to understand how many components of their service also require back-up (these may also include some other devices such as health monitors).

## **3. Cost & Inefficiency**

The 12 Volt Sealed Lead-Acid (SLA) batteries that are most likely to be used in a large-scale deployment of ONT back up are relatively large and heavy (around 1kg), and typically cost approximately \$15 at the wholesale level. Mandatory installation of these units in around 10 million Australian homes could add around \$150 million to the rollout costs of the NBN.

Maintenance and/or replacement of the battery units over time by NBN Co will be difficult and costly as NBN Co will have no relationship with the end-user. Maintenance/replacement by Access Seekers will add to their underlying operating expenses (a cost ultimately borne by consumers), and might at times divert Access Seekers from dealing with other operational issues or solving customer problems.

The use of other, smaller battery types such as Lithium-Ion or “Gell” batteries is unlikely in a large-scale deployment because of the additional costs involved.

One other issue is that if battery back-up is used, then the back-up unit arguably needs to be installed inside the premises so that the customer can see the “low battery” alarm. This may limit flexibility in circumstances where it is operationally better to install the back-up unit on the outside of the premises.

## **4. Pervasiveness of Mobile Phones**

Mobile telephone penetration in Australia is approximately 112%. The costs of basic handsets and mobile air-time have reduced significantly in recent years. Mobile services prices fell by approximately 45% in the decade to 2007-08, according to the ACCC.

Due to the pervasiveness of mobile phones and the likely use of these devices for emergency calls during a local power failure, the application of ONT battery back-up is better suited to more specialised use cases on a user by user basis. Such applications include specific health monitoring services, medi-alert services and security services. Users wanting to subscribe to such services would request or be provided with an appropriate level of battery backup by their service provider in conjunction with NBN Co on an as needs basis.

There is a strong trend towards consumers and business abandoning fixed lines in favour of mobile devices. By the time NBN rollout is complete only a small and

declining minority of Australian premises will be using fixed phone lines and most of these will be with cordless phones that need grid power to work.

Further, many of the remaining PSTN fixed services will have migrated over time to VoIP services – meaning that battery-backup of the VoIP device or PC/lap-top will also be required if connectivity is to be preserved during a power outage.

Also, by the time the NBN is completed, communications for security, health monitoring, etc., will have mostly migrated from fixed phone lines to the mobile phone networks. The aging security/monitors devices used today will be obsolete and discarded.

### **5. Environmental Concerns**

Sealed Lead Acid batteries are recyclable, but the reality is that many batteries are disposed of in household waste before ending up in land-fill, where they pose the threat of significant environmental damage over time.

Other types of batteries are not necessarily recyclable and contain dangerous heavy metals such as cadmium.

The roll-out of the NBN should be achieved in a way that minimises its impact on the Australian environment.

The prospect of some proportion of 10 million SLA batteries leaching acid into the Australian environment and potentially contaminating ground water (and being added to by successive waves of discarded batteries) is an issue the Government should consider carefully before deciding to mandate battery back-up.

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