nbn Technology Choice Policy

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1 Introduction

Under existing Government policy, nbn has the flexibility to choose which technology should be rolled out in an area, making optimum use of available infrastructure to keep costs down and deliver fast broadband to Australia as soon as possible. **nbn** is currently deploying a range of technologies to optimise the use of available 'fit-for purpose' network infrastructure to deliver the minimum data rates required by the Federal Government's broadband policy.

The multi-technology principles mean that most households and businesses:

- already served by the Optus or Telstra Hybrid Fibre Coaxial (HFC) cable networks, will receive faster broadband speeds over an upgraded HFC network;
- where the nbn™ fibre-to-the-premises (FTTP) network has been deployed or is in advanced stages of being built, will remain part of the FTTP rollout; and
- where the nbn™ fixed wireless or satellite networks are earmarked for deployment, will remain part of the
 Fixed Wireless or Satellite rollout.

All other communities are likely to receive fast broadband over fibre-to-the-node (FTTN) and, in the case of multi-dwelling units such as apartment blocks, fibre-to-the-basement (FTTB).

1.1 Technology Choice

Technology Choice provides a mechanism for interested parties to pay for a change to their **nbn™** access technology.

nbn has developed a planning process which identifies which technology should be rolled out in an area, with what it believes to be the most practical and economic rollout schedule. **nbn** is required to make download data rates (and proportionate upload rates) of at least **25Mbps** to all Australian premises and at least **50Mbps** to 90 per cent of fixed-line premises as quickly as possible. Further information on the type of technologies planned for particular areas, and their rollout dates, are available on **nbn**'s website: www.nbnco.com.au/rolloutplan.

It is expected that the current rollout will meet the bandwidth needs of the vast majority of broadband users.

nbn has explored ways to meet community demand for additional bandwidth beyond what is planned in the initial rollout.

Applications for Technology Choice cover the following two options:

- A whole area
- Individual premises

1.2 Technology Choice Policy Statement

nbn was established to deliver Australia's first national, wholesale-only, open access broadband network to all Australian homes, schools and businesses. **nbn** is deploying a range of different technologies to ensure a timely and efficient rollout.



nbn recognises that residential premises' owners, business groups and local governments may be interested in upgrading their **nbn** connection from what is originally being provided via the **nbn** rollout to an alternative access technology.

To cater to this interest, and subject to certain requirements, feasibility and availability limitations, **nbn** offers the following two Technology Choice options:

- Area Switch: being the option to switch an eligible group of premises to an alternative NBN technology
- Individual Premises Switch: being the option to switch eligible individual premises to an alternative nbn technology

('HFC Individual Switch', is currently undergoing further investigation through consultation.)

The cost to change technology infrastructure for Area Switch could range from tens of thousands of dollars to few millions of dollars and for Individual Premises Switch from few thousand dollars to tens of thousands of dollars where the cost is generally dependent upon size and complexity of the project. As various factors will impact on the final cost to move to the alternate technology, **nbn** will assess every application individually taking these various factors into account in order to provide applicants with a high level cost estimate. For Area Switch applications, an Application Fee is payable to procure a cost estimation. For Individual Premises Switch applications a Build Quote Fee is payable to procure a fixed quote. The pricing sections (refer to sections 2.5 and 3.5) provide further detail about how **nbn** will determine the cost of moving to an alternate technology.

The Technology Choice program replaces the previous Network Extension program launched in July 2012. The Network Extension program enabled premises in the Satellite and Fixed-Wireless footprints to switch to an alternate technology, such as Fibre to the Premises (FTTP), these alternate technology options can now be accessed via the Technology Choice Program. This program not only offers upgrade paths from satellite and fixed wireless but also options of changing from the originally offered FTTN, FTTB and HFC networks. The previous Network Extension program ceases on the date of this Policy and no new applications will be accepted under that program.

Area Switch applications can be submitted for premises located, or planned to be located, in all footprint types within the announced footprint (except HFC). An Area Switch option for HFC is under consideration. Interested applicants should check the **nbn** website for updates.

Individual Premises Switch applications can be submitted now for premises that fall within **nbn**'s in service areas. Updates are posted on www.nbnco.com.au.



2 'Area Switch' Option

2.1 Overview

The 'Area Switch' option provides the opportunity for interested parties, such as local and state governments, to fund the deployment of an alternative technology type across groups of premises.

An Area Switch application typically is a request for FTTP connections, rather than FTTN, FTTB, Satelite or Fixed Wireless connections. However, an Area Switch application may also include new Fixed Wireless, FTTB or new FTTN infrastructure.

nbn recommends that the minimum size of an Area Switch is one of the following:

- A whole node (150-350 premises)
- A whole Multi-Dwelling Unit (MDU).

Smaller Area Switches covering a portion of the premises in a node area may also be possible, but are unlikely to be as cost-efficient with regard to network deployment.

nbn is not able to provide advice to applicants, and makes no representation, about the advisability of an Area Switch in relation to any specific premises. It is important that applicants determine whether an alternate technology is advisable in their particular circumstances.

nbn's quote for an Area Switch only covers the cost of design and installation of network infrastructure. Once the relevant network infrastructure has been built, tested and activated, end users may then order services from a Retail Service Provider (RSP).

Information about how to order a service from an RSP over the **nbn** can be found on: www.**nbn**co.com.au/getting-connected

2.2 Eligible Applicants

Applicants may be incorporated associations, bodies corporate of MDUs, local government authorities and state government bodies.

Applications for an Area Switch cannot be accepted from individuals who do not represent a whole area (for example, a town or an MDU).

2.3 nbn Considerations for Area Switches

On receipt of an Area Switch Application, nbn considers, at a minimum, the following:

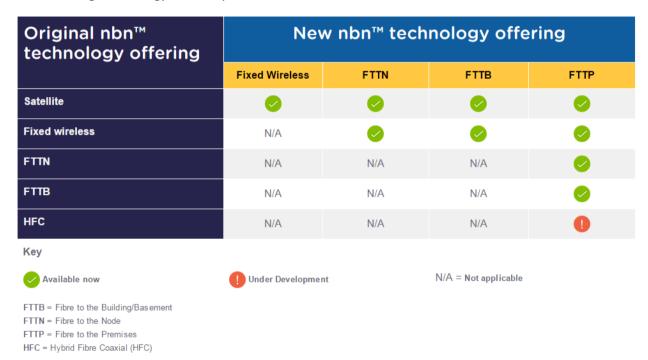
- 1. Network rollout schedule an Area Switch cannot be used:
 - To bring forward the proposed installation schedule for the premises
 - To change the rollout sequence
- Extent to which an Area Switch can be performed within nbn's existing design, network architecture and construction regime



- 3. **Ability to accommodate timeframes** regarding the availability of third party infrastructure which nbn may use, and its relative cost
- 4. **Timing of the application** nbn may accept applications for an Area Switch:
 - within the planning and design, construction or post-construction stages of the nbn in the relevant location
 - however, applications received after the planning process may incur a higher cost, as it is more efficient to receive applications at the Planning & Design stage
- 5. Proximity of the Applicant's proposed location to already constructed nbn infrastructure
- 6. **Size and coverage of the Area Switch** applications may be submitted for a smaller number of premises than a whole node, however:
 - All premises covered by an application need to be contiguous, i.e. if the application covers 3 streets, it
 must include all the houses in the streets
 - If an application is submitted for an MDU, all premises in an MDU must be covered

2.4 Technology Options with Area Switches

The following Technology Choice options are available under Area Switch:



As the **nbn** rollout continues, the offerings available for Area Switch may expand.

For Multi-Dwelling Units, from FTTB to FTTP

nbn may accept applications with respect to MDUs (which may consist of, but not be limited to, apartments, blocks of units, high rises, industrial parks and multi-tenant commercial buildings) for a change of technology from the original FTTB option to FTTP.



nbn only considers applications for MDUs which are in announced rollout areas. Applicants need to be the authorised representatives of all the premises within that MDU (e.g. bodies corporate or property owners).

Applicants are encouraged to submit applications relating to MDUs as early as possible after the rollout areas are announced by **nbn**, so that buildings can be evaluated prior to network design work starting. Where an application for an FTTB Area Switch is received on completion of construction in that area, there may be additional costs associated with a re-design and new construction.

Note: It is highly recommended that interested and eligible Area Switch Applicants engage **nbn** at the earliest opportunity. In order to reduce the Applicants' financial contribution and deployment resources, the most appropriate time to proceed with an FTTB to FTTP Area Switch application is *prior* to construction commencing.

Information on the timing of the **nbn** rollout can be found on: www.nbnco.com.au/check-your-address

2.5 Determining Financial Contributions

nbn determines an Applicant's financial contributions for an *Area Switch Build Quote* on factors mentioned below. Following receipt of an application and subject to certain requirements, feasibility and availability limitations, **nbn** then provides an *Area Switch Build Quote* that outlines the payment structure for financial contribution required by the Applicant.

An Applicant's financial contribution equals the difference between the cost of the originally planned technology and the new technology chosen for the Area Switch.

This contribution covers, but is not limited to, the following costs:

- Design and build of telecommunications infrastructure, including civil works required to remediate/build new pits/duct
- Acquiring access to third party infrastructure (if applicable)
- Construction of a 'lead-in' to the property (if required)
- Installation of the equipment in the premises

nbn determines the Area Switch Build Quote, based on the following:

- Location of each property, taking into account geography and distance from existing **nbn** infrastructure
- Cheapest route option within **nbn**'s network architectural constraints
- Time and cost to build the switch
- Costs of using third party infrastructure
- Environmental and planning approvals
- Deduction of savings that would be incurred if the original planned technology is not constructed
- Any other matters that **nbn** considers to be relevant

nbn may take into account some other factors including the circumstances of the applicant when considering options other than charging the full incremental costs when developing quotes.

Examples of costs associated with an Area Switch for different technology types are provided below.



Financial Contribution: Area Switch from FW/Satellite to a Fixed Line Technology

Where an Area Switch is requested for a town that is planned to be serviced with satellite or fixed wireless technologies, the cost involved in deploying new fixed line infrastructure is **likely to be very high**. A new fixed line access node must be deployed in an appropriate location (such as the telephone exchange), along with the deployment of distribution fibre, and in the case of FTTP, local fibre. If transit fibre is not planned to traverse the town as part of the **nbn** rollout, new transit infrastructure would also be required as part of the Area Switch.

As a guide, a number of previous applications for whole town Area Switches have resulted in estimated construction costs exceeding \$1 million. The final cost will depend on the length of transit build and other factors.

Financial Contribution: Area Switch from FTTN to FTTP

The costs for an FTTN to FTTP Area Switch cover the design, purchasing, hauling and deployment of local fibre infrastructure throughout the FTTN 'Distribution Area'. The node distribution area most likely covers the same location as the existing Telstra copper distribution area. Individual premises' lead in and connection devices would also need to be deployed.

In the event that the existing copper infrastructure is direct buried or the existing Telstra pit and pipe requires remediation, the cost of either new or remediated civil works would be included in the Area Switch cost. This scenario could significantly increase the cost of the Area Switch.

The cost of Area Switches varies according to how much civil work is also required.

Financial Contribution: MDU Area Switch from FTTB to FTTP

The costs for an MDU Area Switch cover the design, purchasing, hauling and deployment of internal fibre infrastructure within the MDU. In some circumstances, fibre purchasing and hauling costs from the distribution network may also be required.

In general, the cost of MDU Area Switches varies according to the size of the MDU, the complexity and variability of the MDU floor layout and the available telecommunications cavity space between the floors and within the risers.

2.6 Application Process for an Area Switch

Interested parties submit an application for an Area Switch by Completing an *Area Switch online Application Form* on the Technology Choice section of **nbn™** website at www.nbnco.com.au/technologychoice.

Once an Application is submitted via the Technology Choice online forms available on **nbn™** website, **nbn** will perform an eligibility check and then if an application is accepted by **nbn**, the applicant is contacted to discuss the viability of the Area Switch and explain the process. The applicant then must pay an Application Fee in order for the application to progress to the next step. (Refer to Appendix <u>A.2 Summary of Fees</u>).

Following payment of the Application Fee, **nbn** conducts a Feasibility Assessment, which includes preparation of a cost estimation that provides a range to design and build the infrastructure required for the Area Switch.



If the applicant wishes to proceed, **nbn** issues a *Design and Quote Fee* that must be paid in full in order for **nbn** to develop a *Build Quote for an Area Switch*. The *Design and Quote Fee* will vary depending on the size of the Area Switch and the amount of work required to develop a *Build Quote*. (Refer to Appendix A.2 Summary of Fees).

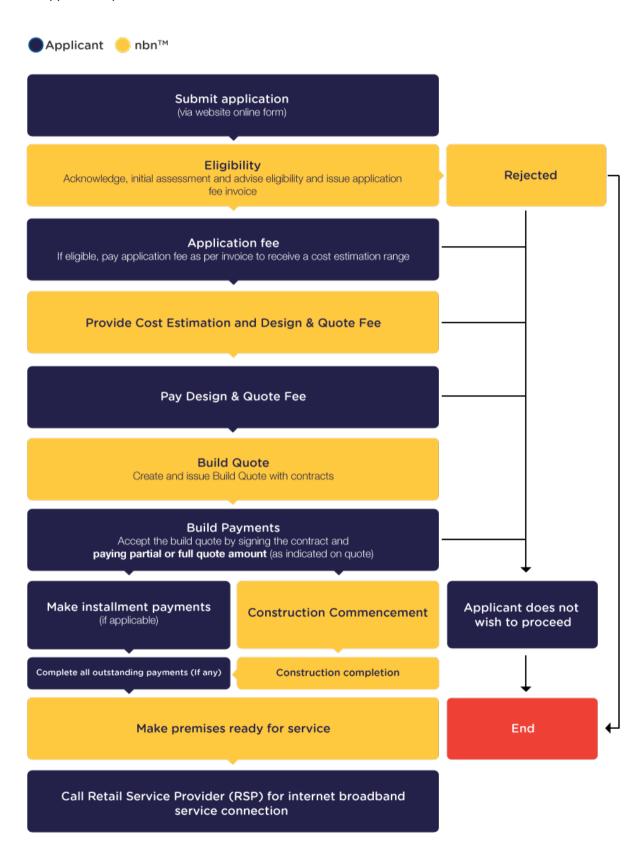
Following payment of the *Design and Quote fee*, **nbn** engages contractors to develop a detailed design, conduct a site walkout, confirm availability of third party infrastructure and provide the *Build Quote*. As the size of an Area Switch can vary significantly, so can the amount of work required at this stage.

The Build Quote contains the costs associated with construction of the Area Switch, as well as:

- A Payment Schedule
- An indicative timeframe
- Contract with terms and conditions



The application process for an Area Switch is illustrated below.





2.7 Fees Structure

The fee structure is designed so that applicants are informed about the likely costs of installing an Area Switch without having to commit upfront to a large Design and Quote fee.

Applicants are able to withdraw their application prior to acceptance of the *Build Quote*, and only have to pay fees for work already completed.

As these activities are in addition to **nbn**'s planned rollout schedule, and the applicant is not obligated to accept the quote, **nbn** must recover the costs associated with developing the quote.

2.8 Credit Assessment

Applicants are able to pay the financial contribution set out in the Build Quote in instalments or in full.

If an applicant wishes to pay its financial contribution under the *Build Quote* in instalments, **nbn** may require a credit assessment, with the applicant's consent. **nbn** first requests the Applicant's written consent to obtain a credit assessment, as required by law. **nbn** reserves the right (in its absolute discretion) to refuse an application or require full payment for an Area Switch before commencing work based on the results of a credit assessment.

If an Applicant does not wish to participate in a credit assessment, Applicant must make full payment for the Area Switch *before* work commences.

Government bodies are excluded from the credit assessment process.



3 'Individual Premises Switch' Option

3.1 Overview

Individual Premises Switch refers to the option to switch eligible individual premises to an alternative **nbn** technology. An application will be a request for FTTP from an individual that falls within **nbn**'s in service areas, e.g. a single residential property in a street, a business park, a school, a farm, a government building etc.

Applicants must have an active service on the existing network before submitting an application. Applications are only processed once the original technology for your area has been deployed.. Check your address to find out if the nbn™ network is available at your home or business. Applications for an Individual Premises Switch from nbn's in service areas covered by Satellite, Fixed Wireless, FTTN or FTTB to FTTP may be submitted by individuals.

nbn quote for an Individual Premises Switch only covers the cost of design and installation of network infrastructure. Once the individual premises connection has been built, tested and activated to support services, end users may then order services from a Retail Service Provider (RSP). Information about how to order a service from a RSP over the **nbn** can be found at: www.nbnco.com.au/getting-connected.

Further investigation and consultation is also required in relation to the potential option of HFC to FTTP individual premises switch or other upgrade paths.

nbn is not able to provide advice to applicants, and makes no representation, about the advisability of an Individual Premises Switch in relation to any specific premises. It is important that applicants determine whether an alternate technology is advisable in their particular circumstances.

3.2 Eligible Applicants

Applicants can be individuals, businesses, incorporated associations, local government authorities and state or territory government organisations.

Applications for an Individual Premises Switch from satellite or fixed wireless to FTTP may be submitted by individuals or groups only where the fixed line network adjacent to the individual premises has been deployed.

Applications for a single premises covered by the FTTN or FTTB rollout may only be processed once the originally planned network has been deployed to the premises.

3.3 Applications by Retail Service Providers on behalf of eligible applicants

nbn offers the ability for Retail Service Providers (RSPs) to apply on behalf of their end user customers to facilitate an Individual Premises Switch. Such applications will proceed between nbn and the relevant RSP (and not directly with the applicant).

All other policy principles apply, the difference being that **nbn** will work with the RSP to assess eligibility and will contract with the RSP to provide the service. The commercial agreement between the RSP and the end-user is a matter between those parties. End-users will need to speak to their RSP about the progress of their application.



3.4 nbn Considerations with Individual Premises Switches

On receipt of an Individual Premises Switch Application, nbn considers, at a minimum, the following:

- 1. Network rollout Individual Premises Switches:
 - Are only provided for locations whose applicants are purchasing an alternative technology than they have received as part of nbn's network rollout
 - Cannot be used to bring forward the proposed installation schedule
- 2. **Deployment of original network** applications are only processed:
 - Once the originally planned network has been deployed to the premises and a service has been activated on that network
 - If premises planned to receive Fixed Wireless or Satellite network and is adjacent to an already built FTTN or FTTP area.
- 3. **Extent to which Individual Premises Switch can be performed** within **nbn** existing design and construction regime
- 4. **Ability to accommodate timeframes** regarding the availability of third party infrastructure which **nbn** may use, and its relative cost
- 5. Timing of the application
- 6. Proximity to already constructed nbn infrastructure

For reference, **nbn**'s rollout plan is available at: <u>www.nbnco.com.au/check-your-address.</u>

nbn reserves the right to accept applications that may not meet all the above criteria, for example for public interest premises.



3.5 Technology Options with Individual Premises Switches

The following Technology Choice options are available for the Individual Premises Switch option:

Original nbn™ technology offering	New nbn™ technology offering			
	Fixed Wireless	FTTN	FTTB	FTTP
Satellite	N/A	N/A	N/A	
Fixed wireless	N/A	N/A	N/A	
FTTN	N/A	N/A	N/A	
FTTB	N/A	N/A	N/A	
HFC	N/A	N/A	N/A	0
Key				
Available now	Under Development		N/A = Not applicable	
FTTB = Fibre to the Building/Basement FTTN = Fibre to the Node FTTP = Fibre to the Premises HFC = Hybrid Fibre Coaxial (HFC)				

As the **nbn** rollout continues, further offerings may become available.

3.6 Determining Financial Contributions

nbn determines what financial contributions are required to pay for an Individual Premises Switch. Following the receipt of the application and subject to certain requirements, feasibility and availability limitations **nbn** provides an *Individual Premises Switch Build Quote* that outlines the payment structure for financial contribution required by the Applicant.

Applicants are required to make financial contributions for the design and construction of an Individual Premises Switch. **nbn** determines the financial contributions based on the relevant project management, design and construction costs. These costs include the building of telecommunications infrastructure and may include acquiring access to third party infrastructure, among other matters.

nbn determines the *Individual Premises Switch Build Quote*, based on the following:

- Location of each property, taking into account geography and distance from existing **nbn** infrastructure
- Cheapest route option within nbn's architectural constraints
- Time and cost to build the infrastructure required for the switch
- · Costs of using third party infrastructure



- Environmental and planning approvals
- Any other matters that **nbn** considers to be relevant
- Deduction of savings that would be incurred if the original planned technology is not constructed

Applicants will generally be required to make full payment before the commencement of work, however nbn may consider payment by instalments upon request from the Applicant. Generally, the payment structure will include a single price. The quoted price will cover the design and construction from a connection point inside the fixed line serving area module to the premises connection device on the property.

Applicants will be responsible for the financial contribution as per their contract with **nbn** once they accept the Build Quote even if they no longer own or reside at the relevant property. It is expected that the applicant and the new property owner will make their own financial contribution arrangements.

nbn must be able to extend the fibre network from a Serving Area (SA) without building any new active equipment for individual or multiple premises that are located on the edge of the fibre network.

The adjacent SA must already be active or have construction started for **nbn** to be able to extend the network.

Receiving a Build Quote from **nbn** for an Individual Premises Switch does not commit an applicant to proceed with the project. Generally, the applicant will have two weeks from the time they receive this quote to decide whether or not to proceed.

Individual premises costs may be reduced if there are multiple premises within the street that wish to switch their technology at the same time. This will be discussed with the applicant at time the application is reviewed (Eligibility Stage).

3.7 Application Process for an Individual Premises Switch

Interested parties submit an application for an Individual Premises Switch by completing an Individual *Premises Switch online Application Form* on the Technology Choice section of **nbn** website at www.nbnco.com.au/technologychoice

If an application is accepted as eligible by **nbn**, the applicant is contacted by **nbn** to discuss the viability of the Individual Premises Switch and explain the process. The applicant must pay the Build Quote fee and accept the terms and conditions in order for the application to progress. (Refer to Appendix A.2 Summary of Fees).

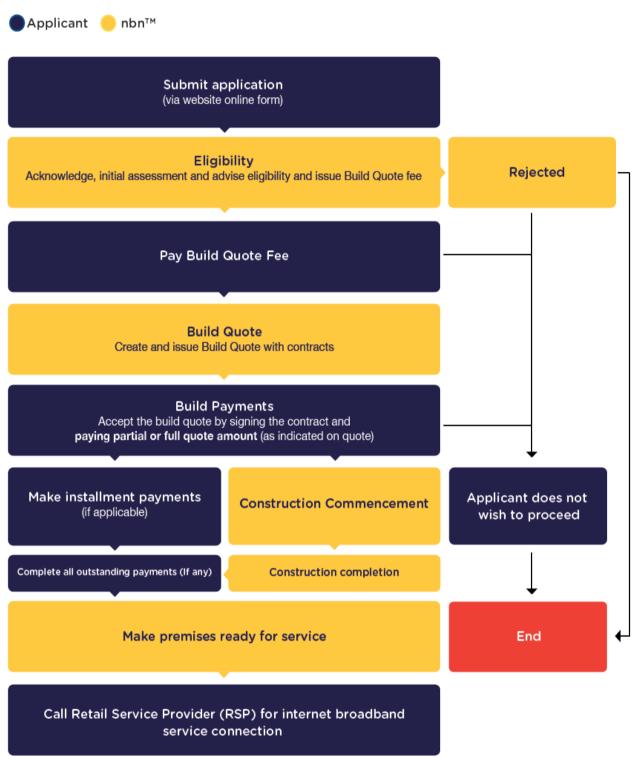
Following payment of the Build Quote fee, **nbn** conducts an assessment of the network requirements. Once assessed, **nbn** will provide a fixed quote to design and build the infrastructure required for the Individual Premises Switch.

The *Build Quote* contains the costs associated with the design and construction of the Individual Premises Switch, as well as:

- A Payment Schedule
- An indicative timeframe
- Individual Premises Switch contract



The application process for an Individual Premises Switch is illustrated below.





3.8 Fees Structure

The fee structure is designed so that applicants are able to understand the likely costs of completing an Individual Premises Switch before committing to the build of infrastructure.

Applicants are able to withdraw their application at any stage of the process, up to acceptance of the Build Quote, and are only liable for fees paid up to that stage.

Once the Applicant accepts the Build Quote by either signing the contract and paying the Build Quote, they are responsible for paying the financial contribution as per the *contract which is issued along with Build Quote*, even if they no longer own or reside at the relevant property (e.g. Applicant sells the property to the new owner). It is expected that the Applicant and property owner make their own financial contribution arrangements towards the outstanding payments.

3.9 Credit Assessment

nbn will determine at its discretion if the full amount must be paid upfront or if the Build Quote can be paid in instalments. For applications where **nbn** has agreed to payment by instalments, **nbn** may require a credit assessment. **nbn** will first request the Applicant's written consent to obtain a credit assessment, as required by law. Based on the results of the credit assessment, **nbn** reserves the right (in its absolute discretion) to refuse an application or require full payment of an Individual Premises Switch before commencing work.

If an Applicant does not wish to participate in a credit assessment, they must make full payment for an Individual Premises Switch *before* work commences.



Appendices

A.1 Glossary

Acronym	Full Name of Technology	Acronym	Full Name of Technology
Fibre	Fibre to the Premises	FW	Fixed Wireless
FTTB	Fibre to the Building	HFC	Hybrid Fibre Coaxial
FTTN	Fibre to the Node	RSP	Retail Service Provider
FTTP	Fibre to the Premises	MDU	Multi-Dwelling Unit
FDA	Fibre Distribution Area		

A.2 Summary of Fees

Once an application is submitted it will be assessed under Technology Choice for eligibility based on information provided on the application forms, the rollout plan and against the eligibility criteria mentioned in the policy and this website. Once eligible, applicants pay an application fee in order to proceed to the next steps involving a detailed feasibility study determine an estimated range for the cost of the build. In certain circumstances **nbn** reserves the right to waive the application and design fees at its discretion.

Application Type	Area Switch	Individual Premises Switch	What does this provide?
Application Fee (if eligible)	\$1100 (Incl GST) per FDA*		Cost Estimation – This consists of the cost estimation range of the build
Build Quote	Upon application	\$660 (Incl GST)	Build Quote – This consists of the incremental cost to build (such as design, construction and project management), as well as the contract
Build Payments	As per Build Quote	As per Build Quote	Construction of the network as per Build Quote