

# National Broadband Network (nbn) Project

South Australia and Northern Territory



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## Project details

### Client

nbn

### Commencement of Project

June 2013

### Project Duration

Ongoing

### Enerven locations

#### supporting the project

- Station Place / Hindmarsh
- Enerven NBN Project Depot (Wingfield)
- Rolling Depots located near the multiple work fronts

### Enerven personnel servicing the project

140

### Skills demonstrated

- Project Management
- Scheduling
- Design
- Construction
- Contractor Management
- Stakeholder and Customer management
- Logistics & warehousing
- Working in remote locations (Tennant Creek, Roxby Downs, Coober Pedy)
- Completions
- Commercial

## Background

Enerven has been a long standing nbn Tier 1 Delivery Partner. In 2015, Enerven were awarded a 5-year construct contract covering the introduction of nbn's new Multi-technology Mix (referred to as the MIMA Contract).

At the peak of FTTP delivery there were 13 concurrent FSAMs in construction, with 600 field personnel engaged on the project with nil lost time injuries, or any environmental breaches. We proactively closed out all stakeholder issues and had a very low rate of major defects.

Enerven are measured quarterly against a range of nbn's key performance indicators. As the nbn Project is national and engages multiple Tier 1 Delivery Partners across Australia, we are also rated against the performance of the other Delivery Partners. In early 2017 we ranked as the number one nbn Delivery Partner in Australia and have managed to maintain this position since.

Enerven are recognised by nbn as having delivered some of the best quality services in the nation and very high safety standards. Enerven has also completed some of the fastest builds in Australia and some of the most remote builds in Alice Springs and Tennant Creek.

## Scope of Activities

The initial scope of works included the Design and Construction of the nbn Fibre to the Premise (FTTP) network. This expanded to include additional nbn Multi-technologies, including Fibre to the Node (FTTN), Fibre to the Basement (FTTB) and the new Fibre to the Curb (FTTC) technology.

The scope of works included the following key activities:

- Trenching and Excavations
- Directional Drilling
- Copper & Fibre Hauling
- Fibre Splicing
- Copper Jointing
- Aerial works
- Customer Connections
- FTTN / FTTC
- Electrical connections
- Asbestos Containing Material (ACM) removal works
- Multi Dwelling Unit works
- Design
- Supply & Delivery of materials
- Installation and commissioning
- Testing.

## Other Contracts

In addition to the main nbn contract, Enerven have also been awarded various other nbn contracts covering:

- Customer Connections (Design & Construct) – involving “on property” works connecting over 15,000 homes to the nbn distribution network
- Multi-Dwelling Unit (MDU) connections (Design & Construct) – connection of groups of premises and commercial properties
- Specialised Telecommunications Testing services – utilised by nbn to identify poor performing nbn customer connections
- Move Add Changes (MAC) – changes to the nbn network due to customer requests (e.g. moving nbn assets due to road works, providing additional nbn connections to newly subdivided properties)
- Special Services – designing and constructing complex nbn services for specialised customers such as banks.

## The customer

nbn was established in 2009 to design, build and operate Australia’s new fast, wholesale local access broadband network. Underpinned by a purpose to connect Australia and bridge the digital divide, nbn’s key objective is to ensure all Australians have access to fast broadband as soon as possible, at affordable prices, and at least cost.

To achieve this objective, the nbn has been structured as a wholesale-only, open-access broadband network and provides services on its local access network on equivalent terms to all retail phone and internet providers, to provision for end-user needs. This is intended to level the playing field in Australian telecommunications, creating real and vibrant competition within the industry and providing choice for consumers.

nbn is wholly owned by the Commonwealth of Australia as a Government Business Enterprise.

## The relationship

A collaborative approach between two committed teams of highly skilled, experienced and innovative telecommunications and construction management professionals, has been the cornerstone to the successful delivery of this technically challenging project.

Enerven and nbn have collaborated extensively on complex issues, and together developed a number of industry leading innovations and technical ‘firsts’.

Enerven has provided nbn with confidence due to our rich experience, our record of delivery, and our depth of operational and financial resources. Enerven is a strong link in the supply chain and values collaboration and early engagement. Enerven has continuously demonstrated that it has the resourcing flexibility to meet fluctuating work volumes and to step up in emergency situations.

Enerven has demonstrated its ability to continuously meet nbn’s project requirements by:

- Being able to efficiently and effectively scale both in personnel and technology to align with nbn’s changing requirements (such as FTTC), as demonstrated with the transition from NSMA to MIMA;
- Working collaboratively with nbn to optimise the delivery of FSAMs and adapting our delivery program in order to assist nbn meet their quarterly Ready For Service (RFS) targets by delivering additional premises due to the delivery shortfalls of other Delivery Partners;
- Being the Delivery Partner of choice to assist nbn to resolve project “challenges” such as:
  - Being allocated the challenging remote MIMA works in Alice Springs, Tennant Creek and remote South Australia;
  - Being engaged to perform the SA nbn works under NSMA, following the transition from the previous Delivery Partner (Syntheo);
  - Being selected as the sole Delivery Partner for solving technical issues with the original nbn network in SA & NT (such as network gaps

and poor performance issues), by leveraging our recognised nbn specialised Design, Engineering and Construction resources;

- Resolving technical issues associated with the new MIMA copper works, such as Design MCIs, Long Copper Tails and Shared Sheaths, by leveraging our in-house Design resources;
- Undertaking MDU works which have been classified as being “too difficult” by other nbn Delivery Partners.
- Being a South Australian based utility company with a significant pool of experienced resources, Enerven has been well placed to continue to provide Design, Engineering, Telecommunications, Construction, Maintenance and Operational Support services to nbn on an ongoing basis.

## Delivery

The project leveraged a cross section of Enerven skillsets including civil, hauling (aerial, underground, fibre, copper and power), engineering services (active & passive electronic equipment installation, fibre splicing, copper jointing & testing).

The volume of works has enabled us to leverage and efficiently establish an effective and flexible permanent workforce. We have also invested heavily in the embedding of new processes, interfaces and relationships, the establishment of satellite depots and ongoing workforce training.

We have leveraged our comprehensive resources, including people, plant, equipment and real estate, the majority of which are located within South Australia.

We have strong existing relationships with a broad cross section of relevant South Australian based subcontractors, with tested and embedded procedures that facilitate efficient on-boarding, mobilisation and ongoing effective service delivery.

We have the proven ability to grow a workforce in accordance with project requirements. Since commencing construction activities, Enerven has

continually made positive changes to our construction methodology, subcontracting where practicable, but also bringing work in-house where it is prudent to do so.

When delivering the nbn services, as an asset owner ourselves, we have leveraged our proven capability in delivering operation and maintenance services to other utilities, including other telecommunications network service providers. This includes a material depth of experience in rapid response to network outages and mass service disruptions for our existing customers, including ElectraNet, Nextgen Networks, BHP Billiton, SA Power Networks (electricity and telecommunications infrastructure), Telstra, Optus, Victoria Power Networks, the State Government of South Australia, and Oz Minerals.

#### Program management

The nbn works were issued to an agreed schedule with stringent completion dates which were directly linked to dates committed to Internet Service Providers (ISPs) and nbn customers.

Fundamental to the successful delivery of the contract has been the detailed scheduling of works across multiple sites and multiple States (SA & NT), utilising teams with varying skill sets and extensive coordination of concurrent teams. At the peak of the project, there were 25 different work fronts open concurrently.

Enerven has a teamwork-based approach to program management. We include the operational teams in our planning and scheduling stages in a collaborative environment, which allows for the proactive integration of individuals' personal requirements into work plans. This allows us to be more effective with our planning and to be more flexible with resourcing, while enhancing the individual and team commitment to shared goals. Our field teams often work for long periods away from home, and this approach has enhanced effectiveness and service delivery to nbn.

Enerven utilised the Primavera Program Management System for scheduling, resource planning and reporting as per NBN's stringent requirements.

#### Logistics

Enerven has an extensive supply chain in place, leveraging warehousing and distribution systems serving the SA Power Networks Group's 28 depots across the state as well as our depots at Olympic Dam and in the Northern Territory.

Enerven has an established logistics capability which is flexible and only requires a small depot footprint at work fronts.

Our Planning team has been very effective with optimising the allocation of resources between metropolitan and regional work sites. Depots are decommissioned and remobilised promptly once works have been completed in any area.

Enerven has an effective supply management capability which was fundamental to the successful delivery of the Project. Enerven provided a total logistics and supply management service for and consistently exceeded expectations by leveraging our purchasing power to procure materials at very competitive rates and pass on the savings to nbn.

#### Dedicated Project Warehouse

The Enerven Project Warehouse of 2,200 sq. metres has been fitted out with racking and material handling equipment with a lifting capacity of 4 tonne, and is resourced with trained logistics personnel.

Inventory is managed through Enerven's SAP ERP system. Inventory managed is both Enerven procured and nbn free issued materials.

At the peak of the project, the Inventory value held was approximately \$9,000,000.

#### Quality

Enerven has a proactive approach to Quality control on the project, with quality checks performed on all works to identify and rectify defects before works are submitted for Practical Completion. Where trends emerge, additional employee and sub-contractor training sessions are conducted, and Quality Bulletins are provided to all sub-contractors to ensure they are aware of issues and Enerven's expectations.

#### Completions

The Completions team progressively gathered all nbn specified Practical Completion (PC) artefacts required, including:

- As-built CAD drawings
- Land Access, Heritage, Council Development/Planning approvals
- Photos
- Test results.

#### Innovation

It has been an ongoing objective for Enerven and nbn to identify, report on and introduce continuous improvements to the way in which works were performed. The improvement objectives have included identifying:

- cost savings;
- design and construction innovation or methods;
- value adding in the procurement chain; and
- overall project management and delivery.

#### Canvas Data Management Tool

The Delivery team were faced with increasing challenges to continually deliver in shorter agreed timeframes, at the best possible value and the highest quality. To achieve these goals and increase the market share in South Australia, new and improved methods of working needed to be explored using approaches and methodologies such as LEAN.

Field data capture was a manual process involving field crews filling out paperwork which was then entered by office staff. This lead to incorrect/insufficient data capture (defects & delays), typos (defects), lost paperwork (rework) resulting in lost revenue and lower nbn KPI scores.

The Canvas tool was selected and implemented as an easy to use system which could capture field data accurately and timely (as the job activity is completed).

### LiDAR

To produce the nbn aerial designs and associated construction drawings, surveys needed to be undertaken of the street environment of a whole suburb. The initial use of non-design resources proved to be costly with insufficient and inaccurate data being captured. LiDAR was identified as a more efficient data collection solution.

LiDAR, an innovative modern technology used for mapping, asset capture and engineering surveys was used extensively during the design survey stage. 3D data scans were undertaken for each nbn area which produced 3D models of the urban environments. The 3D LiDAR models would then be used by our designers to produce accurate and detailed aerial nbn designs.

### Commercial

A collaborative approach between Enerven and nbn's procurement and commercial teams has resulted in Enerven being able to achieve nbn's commercial goals of delivering the network through:

- Simplifying activities, specifications, processes and rates;
- Creating a predictable and consistent approach to volume allocation, forecasting and payments;
- Incentivising high performance through equitable volume allocation and by rewarding cost-effective performance with margin incentives;
- Ensuring flexibility of scope and pricing mechanisms over time.
- Rates subject to an annual review with the purpose of reducing rates over time reflecting joint productivity improvements expected from the program.

The above key themes have been incorporated into the final nbn MIMA Contract.

The key objective of this commercial framework was to achieve a greater

alignment of goals between nbn and Enerven and thus reward high performance in delivering the program with nbn on budget, on time and on scope.

The MIMA places a strong emphasis on positive incentives, rather than negative responses to poor performance, in addition the inclusion of simplified KPIs factored into nbn's decision to allocate additional volumes of work to Enerven.

### Our commitment

Due to the continued performance and the quality of work being delivered by the entire Enerven team, Enerven is well placed to continue to deliver project outcomes and new services to nbn well into the future.

Enerven provides nbn with unparalleled certainty in the telecommunications and construction industries. We are safe, reliable, local, committed and ethical. We have the experience, the established processes, and the organisational and financial resources, to deliver on our commitments and to scale up as required to meet nbn's requirements.

