



DEVELOPER'S GUIDE TO SA POWER NETWORKS CONNECTIONS

2019

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ADELAIDE
POWER DESIGN SERVICES

About Us

We are a local South Australian business specialising in SAPN and NBN projects exclusively. We have worked with the SA Power Networks for over a decade and have completed well over 500 designs in that time. We are trusted by developers, consultants, builders, LGAs and SA Power Networks with our designs and consultation services and will be around for many decades to come.

If you have any SAPN or NBN designs required, or need assistance with anything SAPN or NBN related, please get in touch.

Lindsay Marsden
lindsay.marsden@adelaidepds.com.au

CONTENTS

Process Overview.....4

Applications.....6

Contestability.....8


Power + Lighting Designs.....10

Offer Letter Explained.....12

Building Near Power Lines.....14

Clearance Bonds.....14

Community Title & Mixed Use Developments.....15



Congratulations on your recent development approval application! You've started an exciting business opportunity and I want to start by wishing you all the best with this endeavour.

My name is Lindsay Marsden and I have written this guide to provide assistance to you for the purposes of getting your electricity connections ready for your future customers.

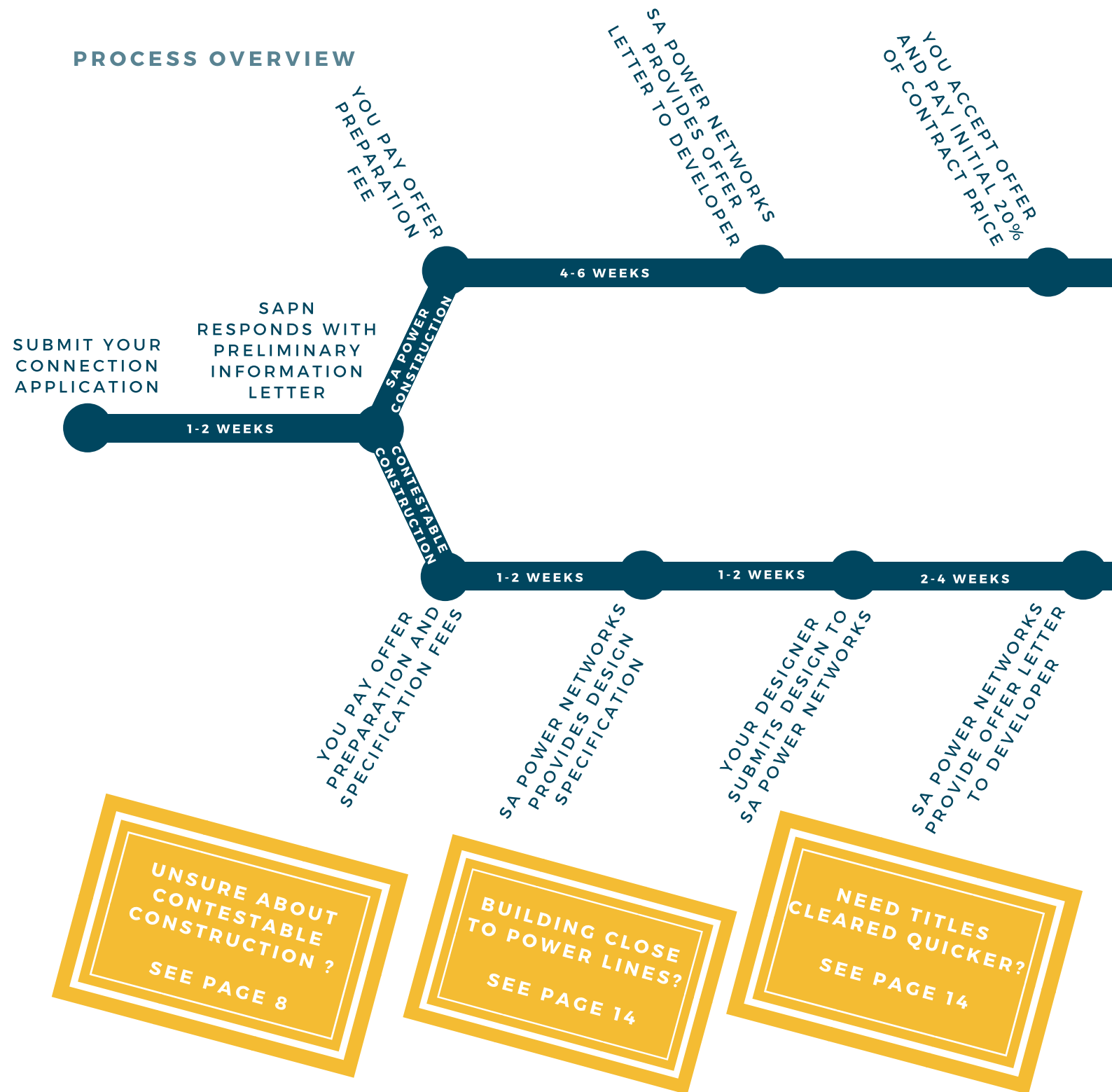
As you are well aware, one of your obligations as a land developers is to ensure that power connections are provided to each of your proposed allotments and street lighting for any new road that requires construction. Within South Australia the entire electricity distribution networks is owned and maintained by SA Power Networks (SAPN). Therefore, at some point, you will be coordinating with SAPN to provide the necessary infrastructure.

This document has been provided to guide you through this SAPN process as well as highlight many of the options and opportunities that will be available to you to help streamline this process and minimise the costs for these electricity services.

And as always, this information is up-to-date at the time of publishing but content can change over time, especially in terms of contacts, processes and costs. If you are unsure about anything in this guide or if you need absolute assurance that the information is correct and current please contact me.

All the best
Lindsay Marsden

PROCESS OVERVIEW

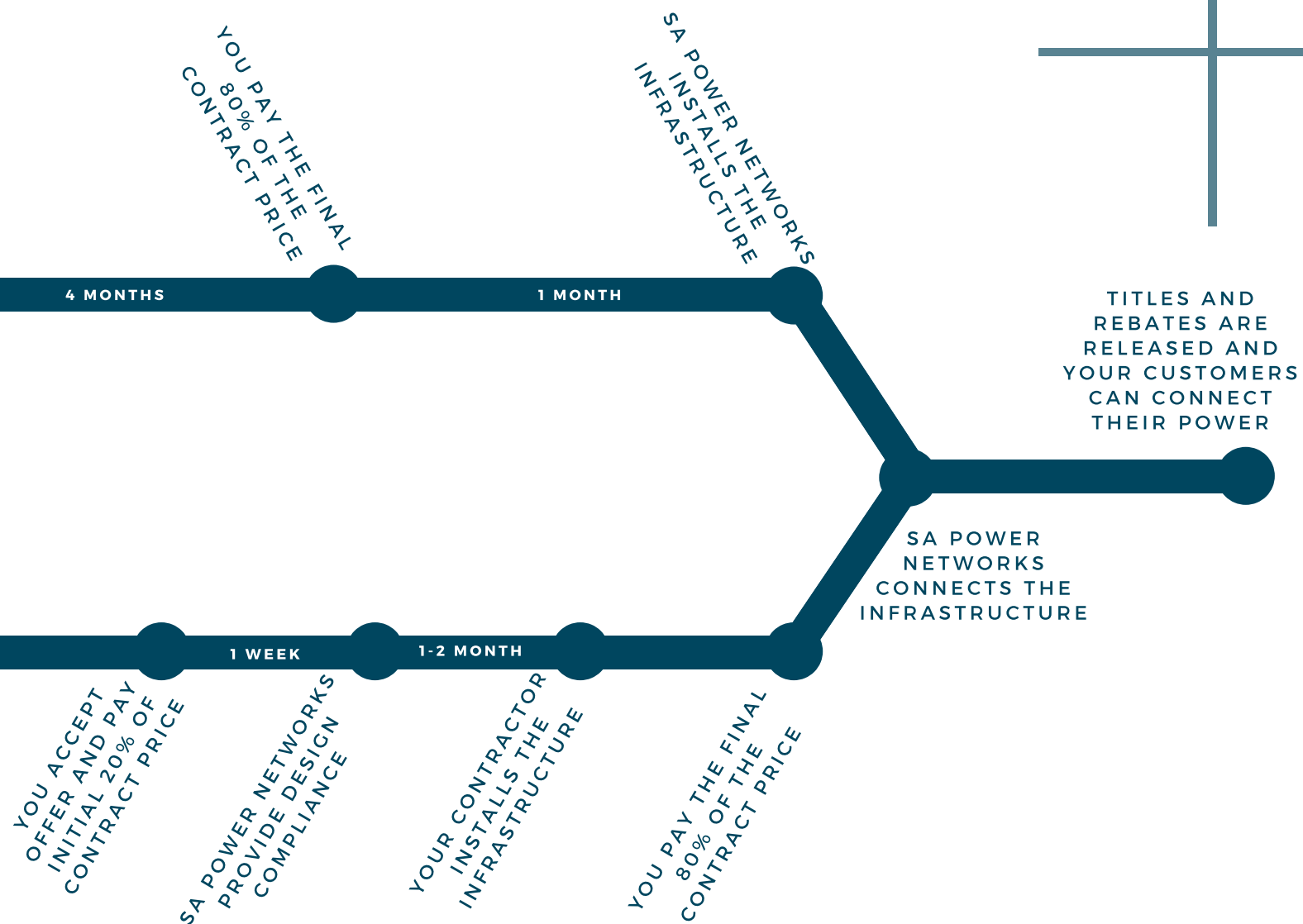


HOW WE CAN HELP

Adelaide Power Design Service Pty Ltd offer a range of services for your power connections. We can provide:

- power line clearance assessments
- budget estimates for total power costs for your development
- handle the SAPN application and negotiations
- designs for SAPN & NBN infrastructure reticulation
- obtain quotes and tenders from power line contractors
- project management of the SAPN infrastructure construction

Get in contact with us with details of your development and we will happily provide you with a fixed cost proposal for the required services.



SHORTEN THOSE TIMEFRAMES

Getting the power connected for your future customers can be a long and cumbersome process. In most cases the process will take 12-18 months.

This can be shortened by a few ways:

- 1) Understand the process and the expected timeframes.
- 2) Provide SAPN the information they need in the format that they use (see page 6). The less work for SAPN means quicker turn-arounds.
- 3) Always pay invoices immediately. SAPN uses payments as 'stop points' in their process. Immediate payments ensure your project continues to forge ahead.
- 4) Communicate regularly with the Network Project Officer handling the project. If issues are not being resolved, organise a meeting with them and their manager to understand and sort the issue.
- 5) Choosing contestable construction will give you better control over the process. Do your best to choose designers and contractors with prior experience and relationships with SAPN to ensure timely progress and quality work.
- 6) Make sure you have completed any preliminary works well before SAPN need to work onsite.
- 7) Understand your rights and channels for complaints. SAPN is a regulated business which has legislated communications and timeframe requirements.

Following the above suggestions will help reduce the process down to about 6-8 months

STEP 1 - SUBMIT YOUR APPLICATION

The SA Power Networks application will generally start at one of two times:

- 1) During due diligence to obtain budget estimates; or
- 2) Once the development application has been lodged and approval has been granted (or is likely to be granted).

At either point you will approach SAPN either via their website:

https://www.sapowernetworks.com.au/centric/customers/necfconnections/commercial_industrial_developer_connections.jsp

Or preferably, via an email to the Customer Solution Manager of the appropriate area (see list right). This application is to initialise the process and, at this stage, SAPN only require the site location, your contact details and a general understanding of the project (development plans would generally suffice).

STEP 2 - RESPOND TO THE PRELIMINARY INFORMATION LETTER

From this point SAPN will assign a Network Project Officer (NPO) who, within a couple of weeks, will send you a letter called the 'Preliminary Information Letter'. This letter specifies the information that SAPN require to progress further. They will also ask whether you want them to:

- 1) Provide a formal offer to complete all the works for the project;
- 2) Provide a formal offer to complete only the 'non-contestable' works;
- 3) Provide an indicative estimate with the likely costs for the project.

Choosing between Option 1 and 2 is basically choosing whether you want SAPN to complete everything or whether you will engage a designer and contractors to install the SAPN infrastructure on your behalf. Contestability, as it is known, has significant financial implications and is further explained on page 8.

Option 3 for an indicative estimate will give you the information you need for your budgets and feasibility studies and, once you've determine that you will proceed with the development you'll proceed to the 'formal offer' stage by choosing option 1 or 2.

If you choose for SAPN to complete only the 'non-contestable' works (option 2) this is the stage where you will engage a designer who will work alongside you to complete the SAPN plan which will subsequently be signed-off by SAPN and your local council.

In addition, there is a table of further information required where you'll need to provide details of such things as your works programme, easement responsibilities, clearance bonds (see page 14), development and civil engineering plans. SAPN also uses this information to calculate your IRR Rebate - See page right to learn how to maximise your rebate.

NEED A
COMPETENT
DESIGNER?
CONTACT US
FOR A QUOTE!

Customer Solutions Manager	Area	Contact Number	Email Address
James Case	Adelaide	0403 582 220	James.Case@sapowernetworks.com.au
Darren Milligan	Metro South & Fleurieu	0400 661 805	Darren.Milligan@sapowernetworks.com.au
Frank Greco	Metro North	0427 297 535	Frank.Greco@sapowernetworks.com.au
Mark McKell	Country North	0400 582 844	Mark.McKell@sapowernetworks.com.au
Quyen Hoang	Hills & Murraylands	0428 232 490	Quyen.Hogan@sapowernetworks.com.au
John Riedel	South East	0403 582 274	John.Riedel@sapowernetworks.com.au

Please note: the area managers change often so it may be wise to call to confirm first prior to emailing the application.

STEP 3 - RECEIVED YOUR OFFER LETTER

Once the preliminary information letter has been completed, offer type chosen and associated offer fees paid, SAPN will calculate the costs involved and provide you with a formal offer. The following pages will help explain this document as well as give you a better understanding of the costs and how they are derived.

Please note that if you have chosen to complete the contestable works, the offer letter may be delayed until you designer has completed the design and obtained compliance. Therefore it is important to choose a designer who can complete a quality design in a timely manner.

RATHER
DELEGATE?
WE CAN HANDLE
YOUR CONNECTION
APPLICATION

MAXIMISE YOUR REBATES

As part of your connection offer SA Power Networks will provide a rebate as you are facilitating additional customers and revenue to SAPN through releasing additional properties. SA Power Networks makes an estimate of the revenue that it will likely receive based on the information that you provide in your response to the 'Preliminary Information Letter'.

Things you should make known to SAPN:

- 1) Your estimated take-up rate (or sales rate) of the proposed titles. Sales from previous stages or similar developments will also help;
- 2) Whether gas will be installed in the development. A development without gas requires customers to cook and heat water with electricity, which increases SAPN revenue and therefore your rebate.

If you are building as part of your development you should also include:

- 1) The square metres of the individual houses/apartments. Larger houses consumer more electricity;
- 2) Whether or not solar or batteries are being installed. Counter-intuitively installing solar and batteries will decrease your rebate due to the future property owners having less consuming less from the grid.
- 3) Finally, details of any major electrical equipment such as hot water services, air-conditioning and cooking appliances.

CONTESTABILITY

In most developments you will be given a choice fairly early after first contacting SA Power Networks. The choice is whether or not you want SAPN to construct everything required to service your development, or whether you want to organise the construction yourself. It may seem simpler to just have SAPN handle it but you'll be paying a premium of approximately 20-30% (literally \$10s of thousands). So, if you are going to handle it, here are the steps and what to expect.

CHOOSING
CONTESTABLE
CONSTRUCTION IS A
SAVING OF 20-30%

STEP 1

In the 'Preliminary Information Letter' you'll choose for SAPN to complete the 'Non-Contestable works only' (generally option 2). SAPN will invoice you the offer and specification fees then send you the 'Design Specification'.

STEP 2

Engage a designer, like ourselves, to complete the SA Power Network design. Once you and SAPN are satisfied with the design, SAPN will provide 'Design Compliance'.

STEP 3

Engage an electrical contractor. This contractor will work alongside your civil contractor to install the SAPN infrastructure (ie. transformers, lights, service points and cables etc.)

STEP 4

Once installed, SAPN will compliance and connect the development. At that point, the rebate is released, lights turned on, and your customers now have access to power.

FINALLY

Remember we are here to help so get in contact for any questions!

NEED MORE INFO?
HEAD TO OUR
WEBSITE!

WARRANTY

When installing SA Power Networks infrastructure a 2 year warranty is required before SAPN will take ownership and responsibility for the infrastructure. The warranty covers all breakdowns that occur on the infrastructure for the first 2 years.

There are a couple of ways to provide this warranty:

- 1) Engage an electrical contractor who has a works bond or restricted works bond with SAPN.
There are a handful of electrical contractors that specialise in SAPN construction and have agreements in place to cover all breakdowns during the warranty period. Many of these companies are shown at the bottom of this page.
- 2) Establish a bank guarantee with SAPN for \$7,700 or 10% of the contestable construction (whichever is greater). The guarantee (or bond) will be in effect for 2 years and if any breakdowns occur SAPN will take the portion of the bond to rectify the breakdown.

ELECTRICAL CONTRACTORS

For your convenience, here are the electrical contractors that have works bonds with SAPN are here. Contact us if you need introductions or contacts within these companies.



NEED EVEN MORE INFO?
HEAD TO THE SAPN
WEBSITE AND SEARCH
NICC401

Disclaimer: This list may not be exhaustive. The developer will need to check that the contractor continues to hold the works bond with SAPN. This does not constitute any advice or recommendation (professional or otherwise). We do not vouch for the quality of their workmanship. Other contractors can be found on the SAPN website by searching 'External Contractor List'.

POWER & LIGHTING DESIGNS

Power & Lighting Designs should focus on 3 elements:

- 1) Functionality;
- 2) Aesthetics; &
- 3) Minimising overall costs.

CONTACT US FOR
A DESIGN QUOTE!

FUNCTIONALITY

Functionality focuses of the design calculations and the technical standards. The SAPN design revolves around three main calculations: Transformer capacity, volt drop and public lighting spacing. Other considerations include trench depths, clearances and high voltage network.

Transformer capacity and volt-drop are interdependent and revolve around allotment size (particularly frontage size) and around transformer placement. Transformers make up a sizeable cost on any development and will set you back around \$50,000 for just the unit. Therefore utilising the full usable capacity of the transformer is very important.

All cables suffer from voltage drop losses where the longer the cable the lower the voltage is at the end of the cables. This can be partially offset by installing larger or parallel cables but generally a low voltage cable will only be able to run a couple hundred metres before dropping below the level required by Australian Standards.

Finally, public lighting spacings are dependant on lighting category set by council, road reserve and carriage widths as well as luminaire types, heights and angles.

All these calculations need to be made as per SAPN technical standards and Australian Standards.

AESTHETICS

Although most of the electricity infrastructure is underground and therefore has no impact on appearances, care must still be taken on position of the above ground infrastructure. Transformer positions should not be placed within front yards or other obvious positions. Street lighting types and colours can also set the tone, style and quality of your development.

MINIMISING OVERALL COSTS

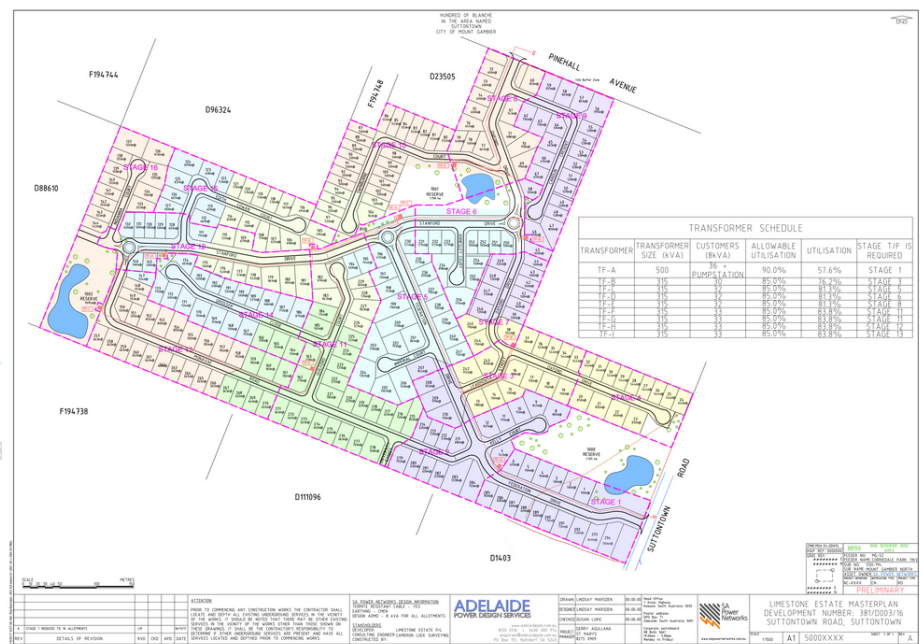
Minimising the design's cost to construct is usually a matter of minimising all the necessary components of the design. But a further step is make sure the design also minimises other costs to your development such as:

- 1) The SAPN costs for the Non-Contestable works;
- 2) Your civil contractors costs;
- 3) Design and construction costs for future stages.

Engaging a designer who has experience with SAPN pricing structures and has worked closely with many developments in the past will make a big difference.

- ELECTRICAL CONTRACTOR TO:
- SUPPLY AND INSTALL NE INFRASTRUCTURE AS DET
 - DRAWING.
 - ELECTRICAL CONTRACTOR BURY SUFFICIENT HIGH V ENCLASURE ADJACENT PR (APPROX 2m A (AY) FOR POLE TOP & COMPLETE A CONNECTIONS.
 - CAP, SEAL AND SECURE 4x150mm² LV UBC CABLE PER TS-087 SECTION 9(a) GUARD READY FOR SAPN TERMINATION & CONNECTIONS.
 - SUPPLY 'AS CONSTRUCTED ADELAIDE PDS.
 - CONTACT SA POWER NET TEL: 8404 4119 TO ARR PERMITS.

NAP1



SAPN Masterplan for 300 allotment land division

STAGED DEVELOPMENTS AND MASTERPLANS

If the development is to be built over multiple stages, it is important to have a suitable SAPN masterplan created showing the proposed staging as well as the high voltage route and infrastructure placement. Having SA Power Networks approve a masterplan allows some technical requirements to be delayed until future stages are constructed (such as high voltage looping arrangement and transformer capacity requirements). This will save you money in the long and short term as well as reduce the risk of any unexpected surprises.

CONDUIT BEND DETAIL

(not to scale)

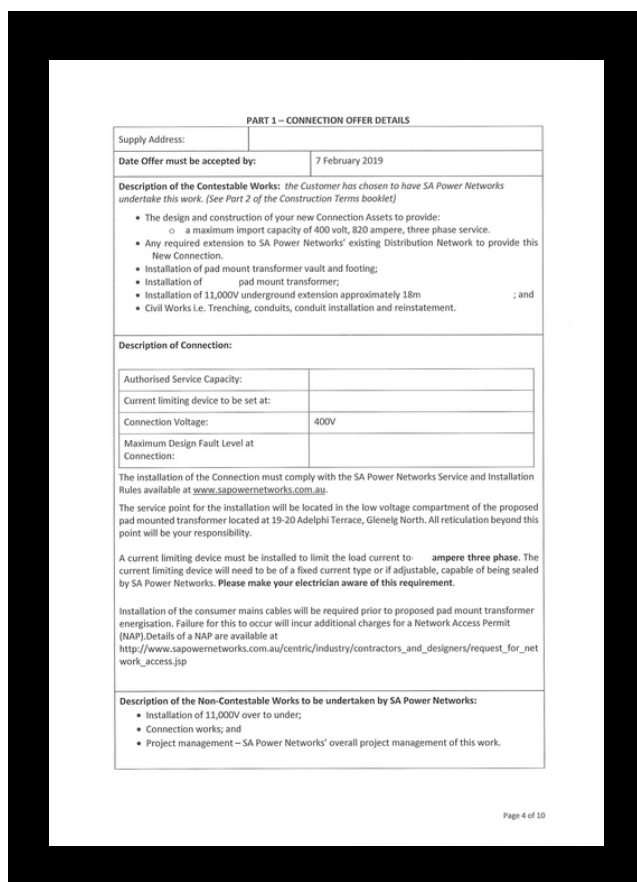
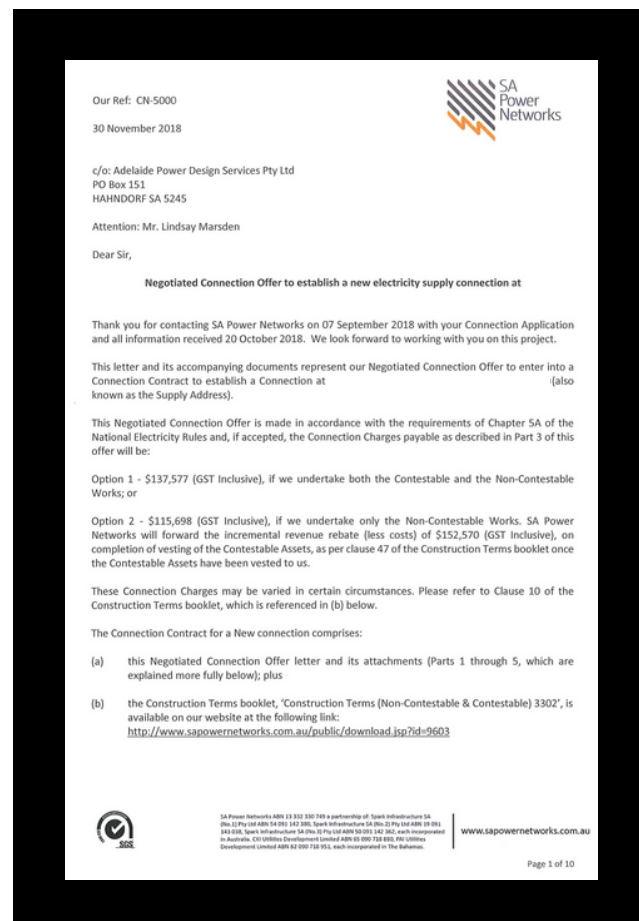
PAGE 11

ALL CONDUIT BENDS TO CONTAIN 45° ANGLES, USING HIGH DENSITY CONDUIT AND LUBRICATION POINTS.

OFFER LETTERS EXPLAINED

Once the design has been completed, SAPN will provide an offer letter. This page is to help you understand your responsibilities and where the costs are derived.

The front pages will provide the SAPN cost for your project. Although mostly self explanatory it should be noted that if you're constructing the contestable portion then the costs are split between your upfront payment to SAPN followed by the rebate you'll receive after the project is completed. This is in contrast to if SAPN was constructing everything where the rebate reduces the upfront costs automatically.



Fast forward a few pages to 'Part 1 Connection Offer Details'

Here you'll see the expiry date of the offer letter, scope of works including responsibilities, and overall connection details such as service capacities etc.

The following pages will also highlight any preliminary works that you'll need to complete prior to SAPN doing their portion as well as the expected connection dates - often about 4-5 months into the future.

PART 2 - ACCEPTANCE FORM

SA Power Networks Ref: CN-5000
 Date: 30 November 2018
 SAPN Project Manager:
 Contact details: SA Power Networks

Telephone
 Email @sapowernetworks.com.au

Please indicate your decision regarding this project by ticking one of the following boxes.

I/We hereby agree that:
 By signing and returning the Acceptance Form I/we are confirming that I/we have read the Connection Contract (i.e. this letter, its attachments and all relevant Parts of the Construction Terms booklet) and agree to all Contract terms.

1.	I/We wish to engage SA Power Networks to undertake and complete the Non-Contestable and Contestable Works and I/we request an invoice to enable payment of the initial fee.	<input type="checkbox"/>
Or		
2.	I/We wish to engage SA Power Networks to undertake and complete the Non-Contestable Works only and I/we request an invoice to enable payment of the initial fee.	<input type="checkbox"/>

By ticking either box 1 or 2, signing this Acceptance Form and returning it to the SA Power Networks Project Manager nominated above, you are entering into a binding legal contract and undertaking a commitment to pay the amounts referred to in the Connection Contract.

If the signatory is not the Customer, then the signatory warrants that they are authorised to accept the Offer for and on behalf of the Customer.

Name of customer: (print).....

Signed by, or for and on behalf of, the Customer:

Signature: Date:

Name of signatory: (print).....

Relationship to Customer: (print).....

Customer's ABN: (print).....

Address for forwarding Invoices: (print).....

Contact Phone: (Mobile)..... (Office).....
 Please note: If unable to provide an ABN, the Customer must provide a "Reason for not quoting an ABN" statement on the appropriate Australian Taxation Office form obtainable at <https://www.ato.gov.au/Forms/Statement-by-a-supplier-not-quoting-an-ABN/>

Page 6 of 10

Next comes the acceptance pages.

If you're satisfied with the costs, timeframes and responsibilities then this is where you sign on the bottom line.

Connection Charges are then broken down of the following pages.

- Connection Assets - refer to the connection of the contestable constructed infrastructure (i.e. the costs for the final connection by SA Power Networks).

- Network Extension - are the contestable constructed infrastructure costs and should be nil if you're doing them yourself.

- Offer and Specification Fees - are paid in order to receive the offer and specification letters. These are usually nil as they have been already paid by this point.

- Augmentation - is a set charge per additional allotment, which SAPN uses to upgrade their upstream networks when required.

- Incremental Revenue Rebate - is the money SAPN will give to you due to you allowing them to increase their customer base.

PART 3 - CONNECTION CHARGES

LOCATION OF WORK -

Customer Payments, Customer Rebates and Deductions (Connection Policy, clause 2.2.2(8))

EXTENSION ASSETS (Connection Policy, clause 3.3)	Option 1	Option 2
Connection Assets (Connection Policy, clause 2.2.2(4)(a))	\$17,575	\$17,575
Network Extension - Contestable Component (Connection Policy, clause 2.2.2(4)(b)) (Option 1 only)	\$107,389	Customers Responsibility
OTHER COSTS (Connection Policy, clause 3.3)		
Offer Fee	\$1,910	\$1,910
Specification Fee (Option 2 only)	N/A	\$3,200
Project Management	\$2,003	\$2,003
Civil Works	\$54,401	Customers Responsibility
Easements	\$2,050	\$2,050
Incremental Cost Shared Network (Connection Policy, clause 3.3)		
Augmentation - (Connection Policy, clause 2.2.2(5)).	\$80,352	\$80,352
Total Customer Contribution (GST Exclusive)	\$265,680	\$107,090
Offer Fee Previously Paid	-\$1,910	-\$1,910
Total of amounts due from Customer (GST Exclusive)	\$263,770	\$105,180
GST (10%)	\$26,377	\$10,518
Total Customer Payment before Incremental Revenue Rebates (GST Inclusive)	\$290,147	\$115,698
Customer Rebates Connection Policy, clauses 3.3 and Section 6.		
Incremental Revenue Rebate - (Connection Policy clause 2.2.2(8))	\$138,700	\$138,700
Total of Rebates Due to Customer (GST Exclusive)	\$138,700	\$138,700
GST (10%)	\$13,870	\$13,870
TOTAL Customer Rebate (GST Inclusive)	\$152,570	\$152,570
NET Customer Payment	\$137,577	

Page 8 of 10

OFFER LETTER DOESN'T SEEM RIGHT? LET US HAVE A GOOD LOOK!

The last pages speak about payment terms, warranty and security details and other terms and conditions.

BUILDING NEAR POWER LINES

Another concern for many developers are building near power lines. The SA Government provides information about clearances and relevant processes at their website:

<https://www.sa.gov.au/topics/energy-and-environment/using-electricity-and-gas-safely/powerline-safety/building-safely-near-powerlines>

Or just type 'Building near power lines' into google.

If you're not sure about the voltage level and reasonable amount of swing that can be expected by the wires please contact us; we are happy to provide a full assessment of the power lines and certify compliance for the power line clearances.

If the building, or construction of the building, will breach a few options are generally available such as installing offset arms or 'undergrounding' of the power lines which can be costly. Again, we are happy to provide rough costs for such options.

**NEED A POWER LINE
CLEARANCE ASSESSMENT
DONE?
CONTACT US!**



CLEARANCE BONDS

As part of the development process SA Power Networks need to confirm that their requirements have been met and that the allotments each have access for electricity connections. SAPN will only confirm this once all the work has been finished and energised and once all your contractors have confirmed payment. Ultimately, this means you cannot sell the title until everything has been completed. If time is 'of the essence' it may be worth considering setting up a clearance bond with SAPN. This will allow SAPN to release the title before finalisation of the works but it does come at a price. A substantial amount of your money (worth the entire SAPN contract + 20%) will need to be held by a bank for the period until all works and completed and all payments are made.

If this sounds of benefit, please contact your Networks Project Officer within SA Power Networks to arrange.

COMMUNITY TITLE & MIXED USE DEVELOPMENTS

The servicing of community title developments may differ from torrens title developments. Generally, if the development is a block of apartments or if the allotments do not face the public road reserves, then a single SAPN service will be required with AS3000 wiring from this point.

Contestable construction may not always reduce costs. In this case, it may be best to ask us to look into it. That being said, if your development requires a new padmount transformer station, there will be savings.

Either way, we are here to help, so get in touch if you have any questions.





\$40M

POWER INFRASTRUCTURE

currently commissioned and active on the SAPN network that has been designed by APDS employees (during their employment at either SAPN or APDS).



20-30%

APPROXIMATE SAVINGS

of the total costs for your developments electricity connections and street lighting if you choose the SAPN contestable option