Public Version



2018/19 STATEMENT OF CORPORATE INTENT

Introduction

The Commercial Environment

The 2018/19 Statement of Corporate Intent (SCI) from Territory Generation (TGen) has been developed in a complex commercial and policy environment and follows a financial year that is expected to produce a profit reduction against a budget of \$17 million and a requirement to request an input of cash from the Shareholder.

It follows publication of the Northern Territory Government's *Road to Renewables Report* and ultimately accepts that TGen won't have a major role in solar power generation. In this regard it is a break from previous SCIs.

It recognises that the introduction of solar power will reduce the overall cost of power to consumers but will lead to higher costs for TGen.

It also recognises that the system won't work without TGen's participation as the generator of last resort and provider of ancillary services to ensure reliability and stability of the system – at least in the short term.

The commercial environment is dominated by the expected increase in entry of solar power – both rooftop and large scale – and the parallel reduction in cost of production of solar power as well as (battery) storage technologies.

The policy environment supports and probably accelerates the expected increase in penetration of solar power through the government's target of 50 per cent solar power by 2030.

Territory Generation's role through this transition will be to play a key role in ensuring the reliability of the power systems while keeping the costs of transition as low as possible. It will also aim to be a trusted adviser to government on all matters within the industry. It will also look for business opportunities in thermal generation that spread our fixed costs over higher revenue thus increasing the return for government.

Through this transition, Territory Generation will be conscious of the impacts on the Territory economy, the government budget and costs to customers.

Currently, large scale solar power can be produced for \$80-\$100/MWh and this is further reduced by the application of an Australian Government subsidy through Renewable Energy Certificates (RECs) which are market-based. The spot price for a REC on 13 April 2018 was \$83.50 (LGC) meaning that electricity from a large scale solar farm could be sold for less than \$20/MWh. The application of costing for ancillary services which are currently under consideration might add up to another \$20/MWh.

This compares to a variable average price (based on gas input only) of \$90/MWh by TGen in the Darwin/Katherine system with fixed costs that must be recovered over expected reduced sales.



This comparison suggests that when sunshine is available, solar power will be used to supply electricity and this averages about six hours a day over the year. This period also takes in peak load periods and therefore means that about 35 per cent of electricity could be delivered by solar power without investment in storage.

Absent other considerations, this suggests a model for the power industry of solar being the primary supply when available and thermal power providing ancillary services to provide stability and reliability to the system and energy supply when solar power is not available. This is still a significant business but one in which continuing fixed costs must be spread over a reducing revenue base.

For costs to the consumer to reduce, the difference in electricity production costs between thermal and solar must be more than the extra costs to keep the system stable. Consumers and government will derive most benefit from this model when:

- 1. Ancillary services are correctly priced; and
- 2. Entry of solar generation is managed on a competitive basis with the value being captured in the final cost to customers rather than allow solar generators to price just below marginal thermal costs.

These matters are being addressed through a review of ancillary and support services charges and reliability standards along with the design of the electricity market. These issues are expected to be finalised by the end of 2018.

Pricing

TGen has in previous years set a price based on recovery of costs.

This approach keeps TGen whole financially but has the following downsides:

- Of itself it does nothing to promote efficiency
- It may have an unfair impact on unregulated businesses causing reduced economic activity and pushing businesses to make decisions to replace electricity from TGen largely with "behind the meter" solar arrays at present. This in turn reduces TGen sales and means that fixed costs need to be recovered over a smaller sales volume, leading in turn to a higher average price. It also means these customers capture all the benefits of being connected to the system for free.
- It does not account for market price.

The Board considers that the most appropriate model for all stakeholders – customers, competitors and government – is to recognise that we are going through a transition phase in the industry and we should minimise disruption to customers.

In the absence of a fully developed market design, the Board recommends that the government forgo its return on capital and recognise the decreased value of TGen's assets through impairment.

These wholesale electricity prices, whilst commercial-in-confidence, are provided in Appendix 1.

A consequence of this, if accepted, is a reduction in the return to government. However, the Board considers that it will have the optimum benefit for the Territory through support for industry and a smoother transition to a 50 per cent renewable model.

Competition

TGen has based this SCI on the assumption that it will not be involved with large scale, stand-alone solar generation at least until 2020. However, TGen currently manages a legacy contract for solar power in Alice Springs and are also working with Voyages to integrate their solar installation in the Yulara power system. It is also likely that future Nhulunbuy and Jabiru systems, currently under



discussion, will be a hybrid of diesel and solar. This will allow TGen to keep its options open for post 2020 when government may see a need for a changed role.

The rate of entry of solar competition will be determined by market rules which are not yet finalised.

TGen understands that a managed entry model is being considered where a government agency would advise the market on the rate of entry and manage that entry through competitive bidding. This model would align most closely with retirement of TGen assets and therefore would minimise over-investment in the system.

A more open market approach could lead to over investment and further impairment of TGen assets.

Fuel

TGen relies on fuel (gas and diesel) to produce the majority of the electricity supplied to retailers. Combined, this accounts for more than 50 per cent of the operating costs of the business. To ensure security of electricity generation, TGen requires not only certainty over the availability of gas but also the availability of transportation. Predicting TGen's demand for gas and transportation is becoming more of a challenge given the transition to renewable energy. TGen's gas is currently supplied under contract from Power and Water Corporation which has a long-term contract with sufficient available gas and transportation to meet TGen's needs.



Reporting against Legislative Requirements

Section 40 of the *Government Owned Corporations (GOC)* Act provides that the SCI must specify, in respect of the financial year to which it relates and each of the two following financial years, the following information:

1. the objectives of the Corporation;

The objectives of the Corporation are:

- To be a safe and efficient thermal generator providing system stability and generation of last resort through a period of transition to 50 per cent renewable energy
- To provide trusted advice to government in our areas of expertise

2. the nature and scope of the activities to be undertaken by the Corporation;

TGen provides five (5) distinct products and services:

1. Energy

The provision of energy in the form of Megawatt hours (MWh) required to meet Retailers' customer loads.

2. Frequency Control and Contingency Support services

Services that ensure that there is sufficient reserve capacity (Spinning Reserve), contingency frequency, voltage and inertia support services to minimise fluctuations in voltage and outages from system interruptions, E.g. generator trips and network disturbances or faults. The provision of these services allows supply to be maintained dynamically in the event of system or network disturbances and minimises associated load shedding.

These services are traditionally provided from the generation plant. Battery technology can provide elements of these services more cost effectively than traditional methods, which is why TGen is investing in a battery energy storage system in Alice Springs and exploring options for Darwin Katherine.

The requirement and demand for these services is managed by the System Controller and regulated through the System Control Technical Code and Secure System Guidelines.

3. Network support services

Provision of services to ensure voltage levels are maintained in the network.

This includes the provision of facilities and services to mitigate the impact of Network interruptions mainly on the Darwin-Katherine interconnector.

This also includes the provision of services to shift load to manage network capacity issues. e.g. Alice Springs Battery Energy Storage System (BESS).

4. System security services

TGen maintains dual fuel supply redundancy in the form of diesel storage and generation capacity in Darwin, Katherine, Tennant Creek and Alice Springs to ensure that generation can be maintained in the event the primary fuel supply (gas) is interrupted.

TGen also maintains additional generation capacity to ensure greater system security over the accepted N-1 (peak generation capacity-maintained accounting for the loss of the largest unit). This additional investment is an insurance against multiple unit outages.



5. Black start services

In the event all generation is lost (System Black), TGen maintains black start generation to ensure that the stations and network can be reenergised. This capability is maintained continuously to ensure high availability.

In the absence of an explicit market for these services, TGen has developed pricing that recovers the cost of capital deployed (where relevant recovering return on and of capital deployed) and fixed and variable operating cost.

3. the material risks faced by the Corporation and the strategies to minimise the material risks faced by the Corporation;

The introduction of solar power on residential and business rooftops as well as the large scale solar farms, provides a threat to the viability of TGen. This is because the cost of producing solar power is below the marginal cost of producing power from gas in the Northern Territory. This is the existential risk to the Corporation.

The loss of revenue means that the fixed overheads of the business must be recovered over smaller sales therefore pushing up the average price. This will lead to further losses in a competitive market or higher tariffs in a less free market. Meeting the market will mean significant cuts to overhead and/or impairment of the assets and reduction in return to Government as the owner.

This is mitigated to some degree by the fact that solar generators can only produce at this low cost for about six hours a day on average over the year and that regulators will insist on these generators proving a contribution to the stability and reliability of the system through the purchase of ancillary services which currently can only be purchased economically from TGen.

An associated risk is the pricing of ancillary services which provide reliability and stability for the system. TGen considers the current pricing is well the below cost of providing them which means TGen is cross-subsidising its competitors. Department of Treasury and Finance (DTAF) are working on this issue but the timing and outcome are critical issues for the Corporation.

TGen is also at risk from the entry of a thermal generator with more efficient equipment and/or access to cheaper gas. This has already occurred with EDL at Pine Creek Power Station.

Key Risk	Inherent Risk rating	Mitigation strategy	Residual (post- mitigation) Risk rating
Loss of market share due to government policy and competitors entering the market with newer technologies or direct access to cheaper fuel and with economies of scale.	Extreme	 Re-organise business with a reduced cost base Consider impairment of assets Agree with shareholder on required return on assets Negotiate gas price to reflect market Encourage the right pricing of ancillary services Investigation of alternative revenue streams Encourage a capacity charge model Encourage time of use wholesale tariffs 	Very High



Market rules design put TGen at a commercial disadvantage via increased responsibility and inability to recover costs/investment.	Extreme	Work with Department of Treasury and Finance to ensure market rules are fair to all parties.	Very High
Significant incident resulting in Injury or death of a worker / visitor	Very High	 Safety Management Plan Environment Management Plan Integrated Change Management Process Electrical tagging & testing, Test equipment Restricted access to high risk areas Safety signage PPE provided and training as appropriate Security / Monitoring SSOW implementation Safety Governance & Consultation 	High
Inadequate IT security which enables unauthorised access to TGen's SCADA / System Control network.	Very High	 Network access controls System access controls Firewall protection (NTG) Virus protection Audit logs Secure network system & NTG Security Guidelines Review of cyber risks and systems & Audit of current systems and security measures ICT strategy 	High
Uncertainty / loss of gas supply from PWC for an extended period resulting in the need to run diesel.	Very High	 Fuel Emergency Advisory Committee - emergency planning Diesel storage Engagement with PWC gas unit on planned works and back-up arrangements Enter into new gas supply agreement with other gas suppliers & emergency fuel cover Exploring more efficient plants and alternate energy sources such as the Dingo pipeline in Alice Springs Having emergency procedures Exploring additional back-up gas storage facilities Emergency supply of fuel via trucks Confirmation and reliance on PWC having agreements with Inpex, Conoco and Central Petroleum for emergency gas supply. 	High



Old, unreliable, poorly	Very High	Maintenance reviews against maintenance	High
configured and		plan	
inefficient generation		 Plant and equipment condition monitoring 	
equipment resulting in		Refurbish or upgrade generation equipment	
inability to meet load demand efficiently.		Stock takes & ELT reporting	
demand emclently.		Use of specialist services	
		Capacity and capability management and	
		monitoring	
		Use of expert advice and long term service	
		agreements	
		Review post Maintenance activities	
		Work orders to replace temperature	
		indicators	
		Asset Management System & Plan	

4. the strategies to improve the financial performance of the Corporation;

The Corporation has addressed efficiencies in the operational part of the business, principally through its Transformation Project, in particular the development of the Remote Operations Centre and the upgrade of machinery in Tennant Creek and Alice Springs. The benefits of these changes are still to come through, as there is a lag due to projects running over time, ongoing negotiations with unions and standard public service employment protections.

Repairs and maintenance has been reduced from a period when there was a backlog, but further savings are unlikely while TGen continues to underpin the system by being able to cope with peak load.

Management is now addressing the size of organisation required to fill the role of generator of last resort and guarantor of stability and reliability in the system as well as providing thermal generation for towns currently outside our remit, e.g. Jabiru and Nhulunbuy, as well as other opportunities that may arise.

5. the capital investment plans of the Corporation that have been approved by the Government Owned Corporation's shareholding Minister;

The table below summarises approved major capital expenditure (capex) that has been approved by the shareholding Minister:

Item (\$ Million)	17-18	18-19	19-20	20-21	21-22
Owen Springs & Tennant Creek	20.2	0.0	0.0	0.0	0.0
Remote Operations Centre	3.5	0.0	0.0	0.0	0.0
Total approved	23.7	0.0	0.0	0.0	0.0



Other capital expenditure:

The table below summarises other capital expenditure by value:

Item (\$ Million)	17-18	18-19	19-20	20-21	21-22
Projects greater than \$1 million	17.9	14.6	17.4	19.6	24.9
Projects less than \$1 million	10.6	7.0	3.1	1.1	1.2
Total other capex	28.5	21.6	20.5	20.7	26.1

Total Capital Expenditure:

The total forecast for capital expenditure is:

Item(\$ Million)	17-18	18-19	19-20	20-21	21-22
Total all items	52.2	21.6	20.5	20.7	26.1

6. the financial targets and other measures by which the performance of the Corporation may be judged;

The Board has undertaken a review of TGen's strategic direction and has established a range of new Key Performance Indicator (KPI) measures to monitor performance toward achievement of the Corporation's objectives. Further, a number of strategic actions have been identified for each Key Result Area (KRA) that will be implemented over the course of the SCI period.

The table below is an overview of some of those key actions, however the Strategic Plan Objectives have detailed action plans which provide the baseline for regular measurement of progress and continuous improvement toward key milestones.

The Strategic Plan Progress Update report is tabled and discussed at ELT meetings monthly and a Quarterly Strategy Review is conducted by the ELT and Senior Management Group to confirm action plans and consider the impacts of changes in the operating environment, including emerging risks and market developments.

Further detail has provided at the Attachment section and is available in the Annual Report.



KRAs	KPI Measure	Target	2018/19 Actions
Safety	 Total Injury Frequency Rate TIFR target to be established based on data now being collected from the MyHub system (data not previously available, this is for TGEN employees only. Establish Near miss and Hazard target-based on data now being collected from the MyHub system (data not previously available) NB - this is for TGEN employees only 	Decreasing trend Increasing trend	 Implement Behavioural Based Safety strategy and performance measures Implement fit for purpose safety systems and processes Finalise the review of all safety procedures and processes
Finance	 Achievement of budgeted outcomes EBITDA \$M Current Ratio Return on Assets (ROA) Return on Equity (ROE) Debt to Equity Ratio Return on Capital Employed (ROCE) EBIT \$M 	Improving trend	 Finalise long term gas supply agreement Reduce fixed costs Develop capability and processes in order to participate in Wholesale Market. Enhance budget definition and reporting processes to ensure budget outcomes are met.
Customers and Stakeholders	Customer and stakeholder satisfaction	Improving trend	 Finalise and implement renegotiated and restructure bilateral retail contracts Develop new power supply opportunities for ex-mining towns. Develop other power supply opportunities which align with the business and shareholder requirements. Establish a series of regular communication and consultation forums with key stakeholders at Board, CEO and Executive level.



Sustainabilit y	• tCO ₂ equivalent emissions per MWh	Decreasing trend	Preparation of plan for transition to renewables future.
	Asset availability	Achieving target (90%+) across all sites	 Review and adapt the Asset Management Plan to emerging technologies and the transition to renewables in line with declining market share Continually scan the technological environment and integrate where appropriate with the Asset Management Plan
Internal Processes	 Operating expenditure as a percentage of total revenue. Operating expenditure per Sent out MWh generated. Outage plan delivery (DK, ASP,TC) Operational Efficiency (gas) 	Targets finalised as part of SCI process Delivery of outage plan on time, in budget, by region Achieving target (32%+) across all sites	 Leveraging value out of investments in ROC and enabling ICT. Develop automated analysis and reports to facilitate operational/ commercial decision making Development of outage and resource planning capability including supply chain improvement project Investigate and implement new technologies to enhance operational efficiency
People and Culture	 Performance Reviews Completed on time Mandatory training delivered on time 	Achieving target (100%) Achieving target (100%)	 Finalise Enterprise Agreement negotiation Develop employee value proposition

7. the accounting policies to be applied in the accounts of the Corporation; and

Power Generation Corporation (the Corporation) trading as Territory Generation was established on 29 May 2014 under the *Power Generation Corporation Act 2014 (PGC Act)*.

The Corporation is declared to be a Government Owned Corporation for the purposes of the *Government Owned Corporations Act (GOC Act)*.

The Board of Directors is responsible to the shareholding Minister for the financial performance of the Corporation.



The principal accounting policies adopted in the preparation of the financial statements are set out on pages 78-84 of the Annual Report and are provided as an attachment. These policies have been consistently applied to all years presented, unless otherwise stated.

8. any other matter that may be agreed on by the shareholding Minister and Territory Generation's Board of Directors.

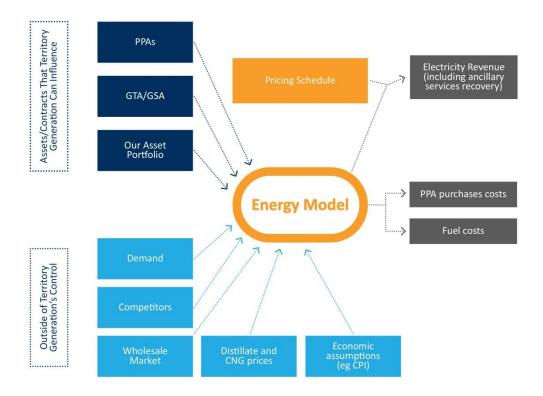
No other matters are applicable at this time.

1 Appendix 1 - Financial Projections

1.1 Methodology

An integrated model has been developed to forecast the financial outcomes for the business over the stated five-year Strategic Planning period.

The diagram below summarises the key energy revenue and cost components of the forecast and the related inputs and outputs.



It should be noted that due to industry disruption and the NT Government's implementation of the actions in line with the Roadmap to Renewables, the financial forecast for the 2018/19 year has a higher degree of certainty than that of subsequent years.

The methodology for the development of the forecast is outlined below.

- Firstly, the annual forecast energy demand is determined by region.
- The expected network and system support services are determined, together with known operational constraints likely to be imposed by the system controller. These are overlaid as operating parameters in the dispatch model in order to estimate the required system security.
- The generation output of each unit at each station is then determined to meet demand requirements based on the most cost-effective method of producing supply, which includes TGen's units, electricity purchased under PPAs, and potential competitors. The key inputs of this "dispatch model" are the short run marginal cost of all units in the market, the availability of units and forecast demand by hour.
- The volume of fuel (both gas and diesel) used by each of TGen's power stations is then
 determined based on amount of electricity produced and assumed thermal efficiency of
 plant. The cost of fuel includes both the fuel commodity and associated transportation
 charges.
- Electricity that is sold (including production and purchases) is then priced according to the business' current and planned Pricing Schedule.
- Personnel numbers have been based on the planned organisational structure as it evolves over time which has been aligned with the strategic direction.
- Personnel costs have been aggregated from a bottom-up forecast by individual and role across the planned evolving organisational structure, inclusive of all allowances and oncosts.
- The repairs and maintenance and capital expenditure projects have been identified, prioritised and reviewed in the context of the strategic direction and projected operational outcomes of the business, and incorporate the expected reallocation of internal labour costs in line with accounting standards.
- The remaining forecasted operating expenditures are based on a bottom-up review of requirements taking account of historical spend and the future strategic direction of the business.
- As a consequence of all revenue, cost and capital input assumptions, a theoretical test of the
 carrying value of the Corporation's assets is undertaken (Impairment Test). As a result of this
 Impairment Test, any Cash Generating Units which have been unable to demonstrate their
 fair value have been subject to the application of a forecast impairment. This reduces the
 carrying value of the assets, as well as the future depreciation stream.
- Finally, the application of taxation regulations and accounting standards is applied to forecast profits and losses on a rudimentary basis to ensure regulatory compliance.

1.2 Key Assumptions

The financial forecast has been based on the following key assumptions:

Item	Assumption						
	For each of the regulated regions, Territory Generation has used the annual grorates provided in the latest available System Review undertaken by the Utilities Commission (2015/16 review). The expected growth rates for energy supplied figrid have been applied to the internal data of sent out energy.						
	For the Darwin-Katherine region, after taking into account factors such as population growth, weather and particularly the move towards solar rooftop installations, the Australian Energy Market Operator (AEMO) forecast provided for the Power System Review show very small increases (< 0.6%) in energy supplied from the grid over the coming years. The maximum demand shows almost no growth over the SCI period and the minimum demand in each year shows a significant decrease (-3%) every year of the SCI period.						
	The impact of solar is even more marked in Alice Springs. The AEMO forecast only 0.36% growth in energy supplied from the grid with no increase in maximum demand over the period. The minimum demand reduces by about half over the period of the SCI.						
Electricity consumption	Load growth is slightly stronger in the Tennant Creek region with the AEMO forecast having around half a percent growth each year. There is no growth in the peak demand while the minimum demand is also fairly stable. Maximum demand forecasts for each of the regulated regions from the System Review document have been utilised to manage towards meeting the expected Peak Demand						
	for each region. The below to				20/24	24 (22	
	Peak Demand (MW)	Existing	18/19	19/20	20/21	21/22	
	Darwin-Katherine	289	289.5	289.9	292.6	294	
	Alice Springs	54.6	54.9	55.1	55.3	55.4	
	Tennant Creek 7.2 7.2 7.2 7.2 7.2						

Incoming competition to the NT power generation market has been flagged for some time, and is expected to continue to adversely impact market share.

Based on publicly available information, Territory Generation has assumed the following generation installations will be competitors for market share in each region.

Darwin-Katherine	Installed Capacity (MW)	Average Capacity (MW)	Annual Energy (MWh)	Introduction Date
Gas fired Thermal				
Pine Creek	27	27	200,886	Existing
Rimfire	12	12	89,283	1 Jan 2020
<u>Solar</u>				
Katherine	25	6.25	53,500	1 Jan 2019
Batchelor	10	2.5	21,400	1 Jul 2019
Defence Department	12	3	26,000	1 Jan 2019
Airport Corporation	47	11.75	100,600	1 Jul 2019

Competition

Alice Springs	Installed Capacity (MW)	Average Capacity (MW)	Annual Energy (MWh)	Introduction Date
<u>Solar</u>				
Airport Corporation	10	2.5	21,654	1 Jan 2019
Community Solar project	5	1.25	10,296	1 Jul 2021

Tennant Creek	Installed Capacity (MW)	Average Capacity (MW)	Annual Energy (MWh)	Introduction Date
<u>Solar</u>				
Airport Corporation	2	0.5	4,344	1 Jan 2019

The following table highlights the summary of the expected introduction of competition, in terms of installed capacity by year of installation, for each of the markets in which TGen operates. This includes both solar and thermal generation capacity.

Installations Capacity (MW)	Existing	18-19	19-20	20-21	21-22
Darwin-Katherine	27	37	69	-	-
Alice Springs	-	-	10	-	5
Tennant Creek	-	-	2	-	-

Territory Generation estimates that the impact on the gas consumption of the Corporation through the introduction of competition will be profiled as follows:

Gas Displaced (PJ)	Existing	18-19	19-20	20-21	21-22
Darwin-Katherine	2.04	2.45	4.52	5.02	4.99
Alice Springs	-	-	0.21	0.21	0.30
Tennant Creek	-	-	0.04	0.04	0.04

The result from the assumptions of expected electricity consumption and of the expected impact of competition on Territory Generation's market share is demonstrated by the forecast sent out electricity from Territory Generation.

Electricity Demand

Region (MWh)	17-18	18-19	19-20	20-21	21-22
Darwin-Katherine	1,423,517	1,365,270	1,167,122	1,128,904	1,142,210
Alice Springs	205,667	208,090	187,195	187,952	178,414
Tennant Creek	28,214	28,404	24,221	24,352	24,465
Yulara	18,435	18,435	18,435	-	-
Kings Canyon	772	772	772	772	772

Electricity supply – TGen's asset portfolio

Existing Power Station Assets:

With the exception of the enhancements noted below, TGen's existing plant is assumed to be maintained and operated to optimise its outputs and costs in accordance with the approved asset management plan throughout the SCI period.

Enhancements:

Despite experiencing delays in the latter part of 2017/early 2018, strong safety performance and construction progress has been recorded on major southern region power generation capacity upgrade projects. It is expected that both projects will be complete and commissioned during 2017/18.

This includes the \$75 million capacity expansion project at Owen Springs Power Station, which involves the installation of 10 new reciprocating gas engines, which will effectively double the power station capacity to 77 megawatts (MW).

In addition, the \$26 million upgrade project at the Tennant Creek Power Station involves the installation of 3 new reciprocating gas engines, and the commissioning of 1 new and 1 existing diesel engine, with obsolete plant to enter the decommissioning phase in 2018/19.

The commissioning of these projects will see a reduction of CO2 emissions in these markets by approximately 20 per cent.

When the Owen Springs project is complete, it will signal the shut-down and decommissioning of the aged Ron Goodin Power Station in Alice Springs, with the land to be rehabilitated and provided back to PWC to be repurposed.

Wholesale

The wholesale electricity prices, previously bundled to include ancillary services and network and system support services, have been split to energy and ancillary services to more accurately reflect Territory Generation's service provision.

The Board has, after consultation with Treasury and the shareholding Minister, recommended wholesale electricity prices in light of the transition towards renewable energy sources, and in the interests of minimising disruption to end customers through the transition process.

electricity pricing

Retailer contracts for 2018-19 onwards are in the process of being negotiated and have potential to impact the forward pricing.

Ancillary services	Whilst the market rules for procurement of ancillary services have not yet been established, it is assumed that Territory Generation will be remunerated under the System Control Technical Code for the provision of specified Ancillary Services at the prevailing rate. This has been deducted from the overarching recoveries noted above to ensure there is no double recovery.
Renewable Energy Certificates (RECs)	It is assumed that REC revenue and costs will continue to be recognised over the period based on a forecast of future spot prices for Large-scale Generation Certificates (LGCs).
Fuel purchases	By far, the largest single cost item is the cost of energy, including gas and diesel input costs, together with Power Purchase Agreements. The amount of fuel required to generate from TGen's power stations is based on the forecast volume output from each unit and the efficiency of each unit based on an assumed heat rate curve. Diesel usage is based on the historical proportion of usage for the level of output. An allowance has been made for the use of emergency gas. The significant changes for the 2018/19 forecast period include: • The execution of the node split project at Channel Island proceeds, and further changes to the inertia or FCAS requirements are not implemented, resulting in reduced operational fuel costs as a result of the project; • The incorporation of competition into the Darwin-Katherine region; • Alice Springs region is served by the enhanced Owen Springs Power Station, with Ron Goodin housing only the 5MW battery unit since its decommissioning; • Tennant Creek is served by the enhanced Tennant Creek Power Station; and • Yulara operations continue as a Diesel-only operation for a two-year period after which operations cease.

The short term gas supply agreement is assumed to continue beyond its current expiry of 30 June 2018, extending for the entirety of the SCI forecast period.

With the exception of the node swap at Channel Island, all other network and system support services and constraints are expected to continue in their current state, that is no increases or decreases, for the entirety of the SCI forecast period.

Emergency Gas - Darwin Liquefied Natural Gas (DLNG)

Consistent with last year's assumptions, the below incremental costs have been included associated with planned and unplanned ENI Blacktip outages.

This includes an assumption of two minor unplanned events per annum (15 hours outage each). There is also planned statutory major maintenance of 8 days in 2018/19 and minor annual planned maintenance of 1 outage at 32 hours per year.

R&M expenses include the cost of materials and internal and external labour. The expenses have been estimated by power station unit over the planning period and comprise planned maintenance and an allowance for unplanned maintenance. The estimated spend over the period is as follows:

Power Station (\$Million)	17-18	18-19	19-20	20-21	21-22
Channel Island	9.6	9.7	9.9	10.1	10.3
Weddell	2.7	2.9	3.0	3.1	3.1
Katherine	0.9	1.7	1.7	1.7	1.8
Tennant Creek	1.4	1.4	1.4	1.5	1.5
Ron Goodin	2.5	0.0*	0.0*	0.0*	0.0*
Owen Springs	4.4	3.6	3.7	3.8	3.9
Kings Canyon	0.1	0.3	0.3	0.3	0.3
Yulara	1.1	1.1	1.1	0.0	0.0
Other	0.0	0.0	0.0	0.0	0.0
Total	22.7	20.7	21.1	20.5	21.0

Repairs and Maintenance (R&M)

These forecasts represent a significant reduction in costs from the 2016/17 financial year, and from the 2017/18 Q1 reforecast. Compared with subsequent years, the forecast spend is higher for the 2017/18 reforecast as a result of the additional spend required following the delays to commissioning of the Owen Springs enhancement project, and a subsequent need to continue to operate Ron Goodin Power Station.

Personnel Numbers

Staff roles have been based on an assumed organisational structure of the business to align with the overall strategic direction. As identified in previous SCIs and forecasts, there is expected to be a reduction in personnel as a result of improved systems and processes implemented through 2017/18 and the decommissioning of the Ron Goodin Power Station.

Operational projects are non-capital projects intended to improve safety, reliability, efficiencies or reduce the costs of doing business.

The projects associated with sites are associated with operational safety, reliability or cost improvements.

The projects associated with ICT systems are reflected in reduced future costs for ICT, but also provide improved decision making performance and allow for reduced headcount.

Operational Projects

Description (\$'000)	18-19	19-20	20-21	21-22
Site based operational improvement projects	2,142	1,824	1,867	1,914
Pronto system improvement projects	220	50	51	52
System De-couple project	1,220	ı	ı	I
OT integration project	250	-	-	-
SOE Equipment	500	-	-	-
UCS Civil works project	200	-	-	-
Internal labour – IT project allocations	628	ı	1	1
Other	222	12	13	14
Total operational projects	5,352	1,886	1,931	1,980

Efficiency savings of \$3.0 million per annum have been assumed for the full period of the SCI, as communicated by Treasury.

Efficiency savings

Item (\$ Million)	18-19	19-20	20-21	21-22
Efficiency savings	3.0	3.0	3.0	3.0

A formal work plan will be developed to create and test initiatives to achieve the delivery of the efficiency savings.

Major Capital Expenditure:

The table below summarises approved major capex:

Item (\$ Million)	17-18	18-19	19-20	20-21	21-22
Owen Springs & Tennant Creek	20.2	0.0	0.0	0.0	0.0
Remote Operations Centre	3.5	0.0	0.0	0.0	0.0
Total approved	23.7	0.0	0.0	0.0	0.0

Capex over \$1 million:

The table below summarises capex projects over \$1 million:

Capex

Item (\$ Million)	17-18	18-19	19-20	20-21	21-22
CIPS C6 rotor refurbishment	3.2	5.4	1.6	0.0	0.0
Alice Springs energy storage	8.3	0.0	0.0	0.0	0.0
CIPS C9 hot section	5.9	0.0	0.0	0.0	0.0
Sub-station gift to PWC - adjust	(1.0)	0.0	0.0	0.0	0.0
CIPS investigation & reporting for second gas pipeline	0.8	0.0	0.0	10.0	10.8
Supply & Install CCTV – all sites	0.3	1.4	0.0	0.0	0.0
Auto black start of north stations	0.1	1.4	0.0	0.0	0.0
Southern region Type B gas compliance review	0.3	1.3	0.0	0.0	0.0
KPS fire system upgrade	0.0	0.0	0.0	1.5	0.0
CIPS unit 8 & 9 control system upgrade	0.0	0.0	0.0	1.9	2.0
CIPS 132 kV node swap over	0.0	2.7	0.0	0.0	0.0
CIPS C1 – C6 132kV cable replace	0.0	0.4	1.5	0.0	0.0

CIPS C8& C9 132kV cable replace	0.0	0.0	3.9	0.4	0.0
CIPS C6 cooling tower refurb	0.0	0.0	2.0	0.0	0.0
CIPS C8 B service	0.0	0.0	0.0	0.0	6.5
LV/MV switchboard upgrade	0.0	1.0	1.0	1.0	1.0
CIPS - demineralised water treatment plant	0.0	0.0	0.0	0.0	3.0
WPS W1 major overhaul	0.0	0.0	4.8	0.0	0.0
WPS W2 major overhaul	0.0	0.0	0.0	4.8	0.0
WPS S7 upgrade and hardware standardisation	0.0	1.0	0.0	0.0	0.0
Emergent works allowance	0.0	0.0	1.6	0.0	0.0
Relocation Set 15 - TCPS to OSPS	0.0	0.0	1.0	0.0	0.0
Spare Rotor for Frame 6B	0.0	0.0	0.0	0.0	1.6
Total Capex >\$1M	17.9	14.6	17.4	19.6	24.9

Other Capex:

The table below summarises other capex (less than \$1 million):

Item (\$ Million)	17-18	18-19	19-20	20-21	21-22
BAU Other	10.6	7.0	3.1	1.1	1.2
Total other capex	10.6	7.0	3.1	1.1	1.2

Total Capex:

The total forecast for capex is:

Item(\$ Million)	17-18	18-19	19-20	20-21	21-22
Total all items	52.2	21.6	20.5	20.7	26.1

The cost and book value of fixed assets is based on the fair value recorded in the Corporation's accounts.

Fixed assets and depreciation expense

Depreciation rates are forecast on a mix of depreciating on the basis of equivalent operating hours for the Prime Movers, and all other depreciable assets on the straight line method over their useful lives. An approximate apportionment of depreciation expense by method is provided below:

Straight line 81%

Equiv. operating hours 19%

A capitalisation threshold of \$10,000 has been adopted, with new assets capitalised and depreciated from the time they are available and ready for use.

	Revenue and cost escalation assumptions are based on contractual or employment obligations where applicable.								
	Where no mandated escalati		he followin	g CPI rates h	nave been a	ssumed:			
СРІ	• 2018/19 – 1.3%								
	2019/20 – 1.9%								
	• 2020/21 – 2.4%								
	• 2021/22 – 2.5%								
Debt and	Debt is interest only and is assumed to be extended upon maturity through the SCI period. Debt is funded by multiple instruments.								
Interest		17-18	18-19	19-20	20-21	21-22			
	Average Interest Rate	4.4%	4.4%	4.6%	5.2%	5.4%			
Тах	Tax expense is assumed at the accounting on taxable incom	•		nd includes	the impact	of tax effect			
Dividend	The Territory is considered to have the right to receive a dividend from applicable entities calculated at 50% of the 30 June post tax surplus, subject to Board approval.								
	This SCI assumes the declaration of \$Nil dividends through the SCI period in order to build a sustainable cash balance, given the SCI assumptions.								
Impairment of Assets	Where the carrying value of a group of assets is higher than the fair value, that is the present value of the expected future cash flows, then the assets are impaired.								
	Based on the Boards view of wholesale electricity prices in the regions we operate, the following impairments have been forecast to be triggered during the 2017/18 financial year.								
	Region		\$ million						
	Darwin-Katherine		109.5						
	Alice Springs		20.0						
	Tennant Creek		19.0						
	Yulara		1.5						
	Kings Canyon		-						
	Total		150.0						

1.3 Financial Analysis and Key Indicators

	FY2019	FY2020	FY2021	FY2022
Profitability				
ЕВІТ	8,539,481	13,775,763	23,501,065	29,588,179
Divided by Revenue	268,178,328	248,567,468	246,625,535	259,443,852
Profitability	3.2%	5.5%	9.5%	11.4%
Return on Total Assets				
EBIT	8,539,481	13,775,763	23,501,065	29,588,179
Divided by Average Total Assets	371,837,828	365,639,149	368,061,817	378,169,325
Return on Total Assets	2.3%	3.8%	6.4%	7.8%
Return on Equity				
NPAT	(189,433)	3,148,392	9,218,251	13,181,602
Divided by Average Equity	89,433,515	90,912,994	97,096,315	108,296,242
Return on Equity	(0.2%)	3.5%	9.5%	12.2%
Interest Cover				
EBIT	8,539,481	13,775,763	23,501,065	29,588,179
Divided by Interest Expense	8,810,100	9,278,060	10,332,136	10,757,319
Interest Cover	0.97	1.48	2.27	2.75
Current Ratio				
Current Assets	61,270,777	62,555,112	69,409,169	75,519,586
Current Liabilities	27,535,169	29,186,714	31,482,853	33,668,544
Current Ratio	223%	214%	220%	224%
Return on Capital Employed				
EBIT	8,539,481	13,775,763	23,501,065	29,588,179
Capital Employed	339,771,839	334,784,575	340,669,492	350,517,761
ROCE	2.5%	4.1%	6.9%	8.4%
Return to Government				
Tax Paid plus Dividends Paid	(53,009)	(801,877)	3,037,115	5,383,857
Divided by Average Equity	89,433,515	90,912,994	97,096,315	108,296,242
Return to Government	(0.1%)	(0.9%)	3.1%	5.0%

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