PUBLIC VERSION

POWER GENERATION CORPORATION

(Trading as Territory Generation)

2020/21 STATEMENT OF CORPORATE INTENT

The recent outbreak of novel coronavirus (COVID-19) has introduced new challenges to the business environment worldwide and the financial implications are not known at this time.

Consequently the following 2020/21 Statement of Corporate Intent (SCI) and assumptions do not include the financial impact of this pandemic. It therefore does not take into account any delays in current and future projects or the estimated changes to the future financial position resulting from COVID-19.

These will be assessed once the pandemic is over and the SCI may be modified at that time.

Introduction

The challenging commercial environment due to increasing solar penetration continues; despite this we have been able to deliver a small dividend for 2018/19.

Rooftop solar continues to grow at about one megawatt per month according to the Utilities Commission's figures and it is expected that at least three large scale solar farms will commence operation in 2020 leading to about 45 MW of solar in the Darwin-Katherine system.

The commercial impact of this penetration has been mitigated to some extent by moderate underlying growth and the Pine Gap contract.

The efforts by the Northern Territory Government (NTG) to attract energy intensive industries to Middle Arm in Darwin offer significant medium-term potential for TGen.

The increased penetration of solar power into our systems also brings with it increasing stability challenges which must be met largely by Territory Generation.

The Northern Territory Government has approved the procurement of a large scale battery for the Darwin-Katherine grid at a project cost of $30M. The battery will be around 35MW and is subject to a market procurement process. The financial impact of the battery has been incorporated into this SCI.

It will still be important for Territory Generation (TGen) to ensure its plant and equipment is kept reliable to enable the transition to 50% renewables by 2030 to occur with minimal disruption. This means an increased emphasis on asset management as the introduction of solar puts increasing physical stress on machines that now need to stop and start more often than designed for. One lesson that is becoming obvious is that while solar power displaces significant thermal energy, the need for capacity to meet peak load remains with TGen when cloud comes over at peak load times. This will impact on TGen's ability to retire plant, resulting in higher repairs and maintenance expenditure, and increased capital expenditure with the need for existing plant to potentially be replaced with new smaller and fast acting plant.

Territory Generation has been playing its part by facilitating workshops with industry participants to try and reach some consensus on what the future holds. So far this has mainly identified questions but we will continue with this work to find appropriate solutions. We will work with other industry participants to identify areas of policy and regulation that, enacted now, will prepare the system for

efficient transition. An example is ensuring the specifications for smart meters, residential batteries and inverters allow integration into micro grids. This is a low cost decision now but will avoid high retrofitting costs in the future.

A significant change will be the upgrade of the Yulara Power Station for which tenders have recently closed (January 2020). The upgraded power station will be a combination of solar (35%), a battery and gas and/or diesel and will be a model for small standalone power stations.

On 13 October 2019, Alice Springs suffered a system black which took 10 hours to restore power to the last customer.

There have been several reports, including one by the Utilities Commission commissioned by the Treasurer.

We have been working diligently through the recommendations with Power and Water Corporation to ensure the problems that caused the outage and the procedures or lack thereof that inhibited an earlier recovery, are addressed.

There has been a renewed focus on operations and a transfer of the lessons learned in Alice Springs to our other power stations.

Reporting against Legislative Requirements

Section 40 of the *Government Owned Corporations Act 2001 (GOC Act)* provides that the Statement of Corporate Intent (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

In accordance with the GOC Act, Territory Generation objectives are to:

- operate at least as efficiently as any comparable business
- maximise the sustainable return to the Northern Territory Government on its investment in the corporation

In addition to these two objectives, Territory Generation has developed a set of Values and a Strategic Plan which includes its Vision, Purpose and Strategic Objectives.

VISION

To be the Northern Territory's trusted and respected energy services business.

These words have been carefully chosen, and for us they mean:

- running our business safely is universally recognised as our highest priority;
- we are known for being reliable, efficient and available when required;
- we exceed the expectations of our customers;
- we are cost effective with other relevant players in the market;
- we are the centre of technical excellence for energy services in the Territory; and
- we are an employer of choice.

PURPOSE

Safely, reliably, and efficiently provide:

- wholesale electricity supply on commercial terms; and
- electricity system services which support system security and the adoption of renewable energy.

This will contribute to, and support the provision of sustainable energy solutions for the Northern Territory as part of the transition to 50% renewables by 2030.

VALUES

Territory Generation has developed a set of values that underpin the way we work with each other and the way we conduct our business.

FIRST: Focus, Integrity, Respect, Safety and Teamwork

OBJECTIVES

TGen has developed a set of Strategic Objectives, the measures of TGen's performance in achieving these objectives is set out in Section 6.

- *Safety*
  We will have an embedded behavioral based safety culture, where safety is the core of everything we do.

- *People & Culture*
  We will have a corporate culture that attracts, retains and develops highly skilled people aligned with the TGen vision and values.

- *Plant Operations*
  We will operate our plant safely, reliably and efficiently, every day.

- *Finance*
  We will achieve our agreed controllable SCI outcomes.
  We will monitor and report the impact of uncontrollable events against our SCI.
  We will have an accepted and transparent understanding of the cost of system services.
  Our financial planning is based on up to date market information.

- *Sustainability*
  We will have a sustainability reporting framework and system that identifies the social, environmental and economic performance of TGen.

- *Stakeholder and Customer*
  We will be a trusted supplier delivering quality products and services.

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

Territory Generation is the largest electricity producer in the Northern Territory, owning generation capacity as well as contracting from Independent Power Producers to supply our customers. Territory Generation produces electricity using gas, diesel and solar technologies to power the Territory's major population centres.

The Darwin - Katherine interconnected system includes the Channel Island, Weddell and Katherine Power Stations.

In the Southern Region, Territory Generation owns and operates the Ron Goodin, Owen Springs, Tennant Creek, Yulara and Kings Canyon power stations and the Sadadeen BESS.

TGen provides two primary products and a range of ancillary services:

Primary Products

All licenced generators have obligations regarding the provision of these products.

- Energy
  The provision of energy in the form of megawatt hours (MWh) 'sent out' from power stations required to meet retailers' customer loads and system losses.

- Capacity (to supply peak load)
  Maintaining sufficient generation capacity (MW) so that the peak demand can be supplied when it occurs.

Ancillary Services

These are the services that are essential to enable the secure operation of a power system and include but are not limited to:

- Frequency Control Ancillary Services (FCAS)
    - Regulating FCAS (R-FCAS)
    - Contingency FCAS (C-FCAS)
    - Inertia FCAS (I-FCAS)
- Voltage Control Services
- Black Start Services

Other System Services

All of these 'other' services provide additional security to the power system and are generally of an ad-hoc nature, and may vary from network to network.

- Capacity Security Services
- Generator Support (testing/commissioning)
- System Strength
- Network Support Services
    - Ad-hoc outage support
    - Katherine Power Station N-1
    - Katherine Power Station voltage support
    - Katherine Power Station storm mitigation
    - Weddell Power Station minimum load

The potential development of the Northern Territory Electricity Market (NTEM) may impact on the categorisation and pricing for these services going forward as such the above will be refined as the market rules are defined.

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

TGen has a risk management framework overseen by the Board's Audit and Risk Committee. The risk management framework provides for regular risk assessments undertaken to identify and manage risks faced by TGen, its stakeholders and the communities TGen operates in. These risks include health and safety, plant risks, hazards and security, service delivery, financial, legal and regulatory, environmental and reputational risks.

Very high and extreme rated risks are monitored by the Executive Leadership Team (ELT) monthly and presented to the Board at every Board meeting. The Audit and Risk Committee undertakes deep dives into nominated risk categories and reports to the Board on a regular basis.

The table below summarises the highest-rated strategic risks facing the business. All other recognised risks are captured in Territory Generation's Risk Register.

Key Risk	Mitigation strategy
Significant incident resulting in injury or death of a worker/ visitor.	• Safety Management Plan. • Environment Management Plan. • Integrated Change Management Process. • Electrical tagging & testing, test equipment. • Restricted access to high risk areas. • Safety signage. • Personal Protective Equipment (PPE) provided and training as appropriate. • Security / monitoring. • An effective Safe Systems of Work (SSOW) which includes the Permit to Work (PTW) system. • Safety governance & consultation.
Prolonged System Black causing significant public and business disruption	• Black start procedures for all systems, power stations and Remote Operations Centre (ROC). • Documented training and competency of operational personnel with regular refreshers and exercises. • Joint reviews with System Control regarding load management systems. • Implement Utilities Commission, Jacobs and Advision recommendations. • Improve speed and reliability of Black Start operations in conjunction with System Control. • Updated, approved and regularly tested Black Start procedures which the staff are familiar with.
Developments and improvements in competitive technologies leading to losing market share, reduction in revenue and output due to decreasing demand and price.	• Re-organise business with a reduced cost base. • Alternative revenue streams / business models. • Negotiate medium to long term gas deal to unbundle commodity from transport and provide flexibility to manage volumes and price. • Recommend a central purchase model. • Investment in battery storage projects.
Inadequate IT security at TGen's power stations allowing the transmission of malicious software or sabotage from employees/contractors	• Network access controls. • System access controls. • Virus protection. • Audit logs. • Secure network system & NTG Security Guidelines.

	• Audit of current systems and security measures. • ICT strategy being developed.
Return on equity not achieved and not achieving financial targets.	• Due diligence and costings prior to project. • Analysis of market to assess probable rapid changes which may affect returns. • On-going monitoring, protections and tight fiscal controls. • Cost savings initiatives. • Performance guarantees built into contracts. • Wholesale price increases. • Develop cost reflective tariffs that recognise the ongoing fixed cost of providing our services even as energy sales reduce.
Market rules design puts TGen at a commercial disadvantage via increased responsibility and inability to recover costs/investment.	• Work with Department of Treasury and Finance and Office of Sustainable Energy to ensure market rules are fair to all parties.
Uncertainty / Loss of gas supply from Power and Water Corporation (PWC) for an extended period resulting in the need to run diesel.	• 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 plant and alternate energy sources. • Emergency procedures. • Exploring additional back-up gas storage facilities. • Emergency supply of fuel via trucks. • Confirmation and reliance on PWC having agreements for emergency gas supply.
Lack of regulatory certainty in regard to system reliability and security undermining efficient investments.	• Enter into agreements or protocols with regulators including System Control prior to investments. • Ensure compelling submissions are provided to regulators during consultation stage and as required.

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 new generating units in

Tennant Creek have been in operation since December 2018 and fuel efficiency benefits are being realised. The new units at Owen Springs have been contributing more to the Alice Springs Network since late February 2019, and will gradually transition to the primary power station in Alice Springs, enabling full realisation of project benefits.

A System Control imposed constraint on overall output from Weddell Power Station has been lifted, effectively raising TGen's capacity in the Darwin/Katherine region by over 30MW. This has allowed TGen more flexibility in ensuring that the most efficient units are dispatched and run at more efficient loads.

The node swap at Channel Island Power Station has enabled lower operation of the less efficient generators, again contributing to the increase in overall efficiency of the Darwin/Katherine system reducing the cost per MWh.

Modifications continue to be made to the MAN and Jenbacher units at Owen Springs Power Station to improve reliability.

Operational costs across the business are continually monitored to assist in identifying possible areas for cost savings to ensure TGen exceeds the committed savings target.

The Corporation undertook an organisation restructure to adapt to changes in the external environment which was rolled out from 1 July 2018 and the improved efficiencies are now being realised. A recent review of FTE numbers has been completed and the organisation will focus on implementing plans to ensure that SCI FTE targets are met.

The recent approval by the Northern Territory Government for the procurement of a large scale battery for the Darwin-Katherine region is expected to provide additional stability to the system, reduce the need for gas-fired spinning reserves, reduce emissions and provide a positive return over 5 years through a reduction in energy costs.

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

The Corporation does not have any major capital expenditure (capex) that has been approved by the shareholding Minister:

Item ($ Million)	19-20	20-21	21-22	22-23	23-24
	0.0	0.0	0.0	0.0	0.0
Total approved	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Other Capital Expenditure:

The table below summarises other capital expenditure by value and if above the threshold will be submitted for approval by the shareholding Minister:

Item ($ Million)	19-20	20-21	21-22	22-23	23-24
Projects greater than $1 million	19.2	29.0	22.5	25.7	26.0
Projects less than $1 million	3.5	1.2	2.1	1.4	2.1
Yulara Power Station Alternative Energy System	1.8	11.5	2.9	0.0	0.0
Darwin – Katherine BESS	0.5	12.0	17.1	0.0	0.0
Total other capex	**25.0**	**53.7**	**44.6**	**27.1**	**28.1**

Total Capital Expenditure:

The total forecast for capital expenditure is:

Item ($ Million)	19-20	20-21	21-22	22-23	23-24
Total all items	**25.0**	**53.7**	**44.6**	**27.1**	**28.1**

In January 2020 a working group was established to assess the impact on TGen's assets and the business of increasing levels of intermittent solar pv. Increased cycling, increased starts/stops, and fast ramp up of machines is becoming the normal mode of operation due to solar impacts.

Full life of plant components will not be achieved with the running regimes being experienced, with the increased risk of catastrophic failure if standard maintenance practices are applied.

Changes in maintenance practices include:

- Increased frequency of borescope inspections;
- Turbine rebuild/refurbishment carried out more frequently;
- Cost of refurbishment will increase as more parts will need to be replaced than has historically been the case; and
- The incidence of out of sequence work will increase

The working group will also assess alternatives such as replacing existing assets with new small and fast acting plant. This element of the work is ongoing and not factored into the assessment of the above capital expenditure tables.

Detailed business cases will be developed prior to commencement of projects.

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

The Board has developed Key Performance Indicators (KPIs) across the TGen business in order to clearly define the strategic direction for the coming financial year. The strategic direction of the Corporation is to operate our plant safely, reliably and efficiently every day and is aligned to driving continual improvement in all areas focused on the Strategic Objectives for the SCI period.

The Corporation will continue to utilise the Strategic Plan Progress Update Report to detail the specific action plans for each business unit and function. Through ongoing reviews of key lead and lag indicators, the Corporation will be assessing the headway being achieved towards our strategic goals. From these evaluations, the effectiveness of the current action plans will be assessed and, any adjustments necessary will be made to continue the positive momentum or realign the efforts of the specific business unit.

Objective	KPI Measure	Target	Action Area
Safety			
We will have an embedded behavioural based safety culture, where safety is the core of everything we do	• Report lead indicators • Increase safe act observations and safety interaction reporting rates and improve quality • Lost Time Injury Frequency Rate (LTIFR) • Measure safety culture and engagement through staff engagement surveys	Increase in near miss reporting Monthly allocated targets met or exceeded Zero LTI recorded Improvement in safety engagement	Continuous improvement approach to safety leadership, behaviours, systems, processes and reporting
People and Culture			
We will have a corporate culture that attracts, retains and develops highly skilled people aligned with the TGen vision and values	• Number of People – Full Time Equivalent (FTE) • Performance appraisal and development plans completed within the defined time frame • Employee engagement survey outcomes • Employee retention rate • Compliance training provided as per training schedule	FTE = or < SCI and Cap Appraisal completion > 90% Engagement survey result > 70% Retention rate > 85% Training completed on time > 90%	Building a positive culture and developing capability to work towards achieving Territory Generation's vision

Plant Operations			
We will operate our plant safely, reliably and efficiently everyday	• Critical plant availability across portfolio • Metric reports produced • Operating expenditure (less energy) as a percentage of total revenue • Operating expenditure (less energy) per sent out MWh generated • Operational efficiency across all sites	Total TGen average = or > 88% Metric reports produced for all sites Achieve = or < Budget % Achieve = or < Budget $/MWh Across all sites average energy efficiency = or > 32%	To deliver safe, reliable and efficient plant operations in a rapidly changing environment
Finance			
We will achieve our agreed controllable SCI outcomes *We will monitor and report the impact of uncontrollable events against our SCI* *An accepted and transparent understanding of the cost of system services* *Our financial planning is based on up to date market information*	• Achievement of budgeted outcomes EBITDA/current ratio/ROA/ROE/debt to equity ratio/EBIT • TGen products are costed in accordance with the agreed documented methodology	Targets met or exceeded Documented methodology approved	Understanding, measuring and actively managing financial drivers with a focus on financial discipline and sustainability

Sustainability			
We will have a sustainability reporting framework and system that identifies the social, environmental and economic performance of TGen	• The measurement and reporting of TGen's total emissions • Annual review of New Energy Transition plan • Estimate of regulated system carbon intensity • Emission impacts included in business cases • Cyber security management and processes	TGen's emissions < tC02-e 1,000,000 total tonnes for the year Plan produced The estimated system carbon intensity advised to Board All business cases include emissions impacts Achieve a rating of = or > 1.4	Continue to efficiently provide energy system services to achieve a decreasing carbon intensity trend on all networks in which we operate
Stakeholders & Customers			
We will be a trusted supplier delivering quality products and services	• WESAs negotiated • Identify new technologies and develop appropriate business cases, products and services to meet requirements of Stakeholders and Customers • Customer and Stakeholder survey	Approved by Board and Shareholder Two business cases presented to the Board Initial Customer and Stakeholder survey result finalised to set future benchmark	Continue to engage with stakeholders and customers with a focus on creating valued outcomes

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

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 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 39-46 of the 2018/19 Annual Report. 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

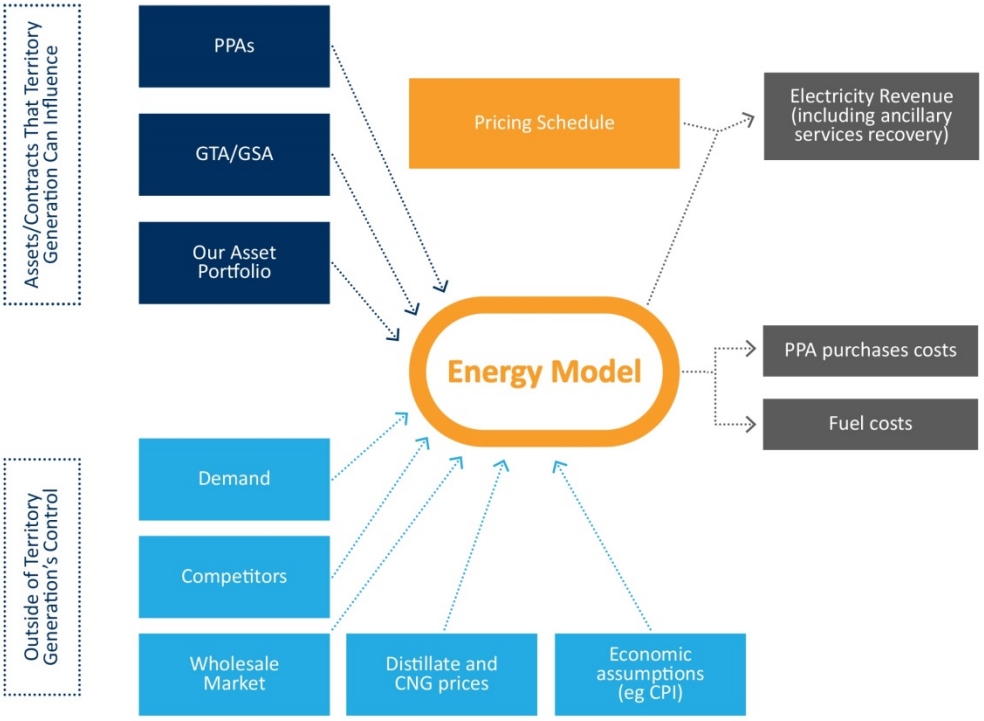
No other matters are applicable at this time.

1 Appendix 1 – Confidential - Financial Projections

1.1 Methodology

An integrated model has been developed to forecast the financial outcomes for the business over the stated three year strategic planning period.

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



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

- The annual forecast energy demand is determined by region (power system).
- 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 to estimate the required system security.
- The generation output of each unit at each station is then determined to meet demand requirements based on a cost-effective method of producing supply, which includes TGen's units, electricity purchased under power purchase agreements (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.
- The volume of fuel (both gas and diesel) used by each of TGen's power stations is then determined based on the amount of electricity produced and the assumed thermal efficiency of the plant. The cost of fuel includes both the fuel commodity and associated transportation charges.

- Electricity that is sold (including production and purchases) is priced according to TGen's 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 organisational structure, inclusive of all allowances and on-costs.
- 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 will be subject to the application of an impairment. This will reduce the carrying value of assets, as well as the future depreciation expense.
- Finally, the application of Australian taxation regulations and Australian Accounting Standards is applied to forecast profits and losses to ensure regulatory compliance.

1.2 Key Assumptions

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

<table>
<tr><th>Item</th><th>Assumption</th></tr>
<tr><td>Electricity consumption</td><td>
For each of the regulated regions, TGen used the annual energy forecast provided in the latest available Power System Review (PSR). For this SCI, it was the 2017/18 PSR. The 50% Renewable Policy forecast of energy was chosen to reflect NTG's policy and provide consistency.

For the Darwin/Katherine region, the introduction of industrial scale solar projects, subdued growth in demand coupled with the strong uptake of rooftop solar is reflected in slight power system growth for the forecast period.

However in Alice Springs and Tennant Creek, a slight decline is projected across the forecast period. The system sent out growth rates are summarised in table below.
<table>
<tr><th>System Sent Out Growth</th><th>20-21</th><th>21-22</th><th>22-23</th><th>23-24</th></tr>
<tr><td>Darwin/Katherine</td><td>0.68%</td><td>0.69%</td><td>0.70%</td><td>0.71%</td></tr>
<tr><td>Alice Springs</td><td>-0.48%</td><td>-0.33%</td><td>-0.33%</td><td>-0.33%</td></tr>
<tr><td>Tennant Creek</td><td>-0.09%</td><td>-0.09%</td><td>-0.08%</td><td>-0.09%</td></tr>
</table>

While the emphasis is on the MWh sent out growth rate, rather than demand, the Dispatch Energy Model (DEM) changes are based on multiple model inputs. Therefore, maximum (peak) demand as modelled by the DEM, is not directly comparable to the maximum demand assumptions in the 2017/18 PSR. The assumed peak maximum demand for each region is outlined in the table below.
<table>
<tr><th>Peak Demand (MW)</th><th>Existing</th><th>20-21</th><th>21-22</th><th>22-23</th><th>23-24</th></tr>
<tr><td>Darwin/Katherine</td><td>255.70</td><td>266.42</td><td>262.71</td><td>251.15</td><td>254.85</td></tr>
<tr><td>Alice Springs</td><td>49.06</td><td>51.85</td><td>51.13</td><td>50.47</td><td>49.29</td></tr>
<tr><td>Tennant Creek</td><td>8.54</td><td>6.90</td><td>6.90</td><td>6.89</td><td>6.89</td></tr>
</table>
It should be noted that these are system values and do not represent Territory Generation's market share.
</td></tr>
</table>

Competition

New entrants to the NT power generation market have been flagged for some time, and is expected to continue to adversely impact Territory Generation's market share. Based on publicly available information, Territory Generation has assumed the following generation installations will be competitors for market share in each region.

Region	Installed Capacity (MW)	Average Capacity (MW)	Maximum Annual Energy (MWh)	Introduction Date
Darwin-Katherine				
Gas Fired Thermal				
Pine Creek	26.00	22.00	194,600	Existing
Trutinor (Rimfire)	12.00	10.00	91,000	1-Jul-22
Known Solar				
Darwin Airport Stage 1*	5.50	1.38	12,045	1-Jan-20
Darwin Airport Stage 2*	4.50	1.13	9,855	1-Jul-20
Batchelor Solar Farm Pty Ltd	10.00	2.50	21,900	1-Jan-21
Robertson Barracks Solar*	10.87	2.72	23,814	1-Jul-20
Darwin RAAF Base Solar*	3.62	0.91	7,928	1-Jul-20
Batchelor Solar	10.00	2.50	21,900	1-Jul-20
Manton Solar	10.00	2.50	21,900	1-Jul-20
Katherine Solar	25.00	6.25	54,750	1-Jan-20
Speculative projects				
Darwin region solar 1	8.96	2.24	19,614	1-Jul-22
Pine Creek region solar 1	5.00	1.25	10,950	1-Jul-22
Darwin rural area solar 1	20.45	5.11	44,786	1-Jul-23
Katherine region solar 1	20.45	5.11	44,786	1-Jul-24
Darwin region solar 2	20.45	5.11	44,786	1-Jul-25
Darwin rural area solar 2	20.45	5.11	44,786	1-Jul-26
Darwin region solar 3	20.45	5.11	44,786	1-Jul-27
Katherine region solar 2	19.89	4.97	43,559	1-Jul-28
Darwin rural area solar 3	20.36	5.09	44,588	1-Jul-29

Alice Springs				
Known Solar				
Uterne	4.00	1.00	8,760	Existing
Speculative projects				
Alice Springs South Solar 1	4.00	1.00	8,760	1-Jul-23
Alice Springs South Solar 2	4.00	1.00	8,760	1-Jul-24
Alice Springs North Solar 1	4.00	1.00	8,760	1-Jul-25
Alice Springs South Solar 3	4.00	1.00	8,760	1-Jul-26
Alice Springs North Solar 2	4.00	1.00	8,760	1-Jul-27
Alice Springs South Solar 4	4.00	1.00	8,760	1-Jul-28
Alice Springs North Solar 3	4.00	1.00	8,760	1-Jul-29
Tennant Creek				
Known Solar				
Nil Known				
Speculative projects				
Tennant Creek solar 1	1.70	0.43	3,723	1-Jul-27
Tennant Creek solar 2	1.70	0.43	3,723	1-Jul-28
Tennant Creek solar 3	1.70	0.43	3,723	1-Jul-29

**Behind the meter installations*

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	20-21	21-22	22-23	23-24
Darwin/Katherine	26.00	85.24	105.49	131.45	137.94
Alice Springs	4.00	4.00	4.00	4.00	8.00
Tennant Creek	0.00	0.00	0.00	0.00	0.00
Total	**30.00**	**89.24**	**109.49**	**135.45**	**145.94**

TGen 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	20-21	21-22	22-23	23-24
Darwin/Katherine	2.25	3.30	3.39	4.86	5.08
Alice Springs	0.09	0.09	0.09	0.09	0.17
Tennant Creek	0.00	0.00	0.00	0.00	0.00
Total	**2.34**	**3.39**	**3.48**	**4.95**	**5.25**

Electricity Demand

The result from the assumptions of expected electricity consumption and of the expected impact of competition (including rooftop solar PV) on TGen's market share is demonstrated by the forecast sent out electricity from TGen.

Region (MWh)	19-20*	20-21	21-22	22-23	23-24
Darwin/Katherine	1,215,095	1,151,629	1,146,770	1,039,689	1,018,112
Alice Springs	200,577	206,067	202,636	199,268	185,108
Tennant Creek	33,469	29,497	29,424	29,353	29,273
Yulara	19,206	19,542	19,755	20,066	20,382
Kings Canyon	1,252	1,450	1,450	1,450	1,450
Total	**1,469,599**	**1,408,185**	**1,400,035**	**1,289,826**	**1,254,325**

***2019-20 Actuals to December 2019 and Forecast to June 2020.*

Electricity supply – TGen's asset portfolio

Existing Power Station Assets:

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, consistent with the capital program. Additional works are being undertaken at Owen Springs Power Station to bring it up to the reliability and capability required.

Fuel Purchases

By far, the largest single cost item for TGen is the cost of energy, including gas and diesel input costs, together with Power Purchase Agreement costs. The amount of fuel required to generate at 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.

For 2020/21, the cost of delivered gas is based on the current agreement with PWC. For the purposes of the SCI, TGen has assumed that the current agreement will be continued with PWC, with terms and conditions substantially the same.

In 2023/24 one heat recovery steam generator, which powers half of the steam turbine, could be turned off due to the high level of start/stop cycling being applied as a result of high mid-day levels of solar power. As gas consumption is derived from the modelled efficient dispatch, if this unit ultimately is unable to operate at full capacity as anticipated there will likely be a negative impact on the volume, and thus cost, of gas used.

It has been assumed that constraints would be applied to other system participants to enable the steam turbine to run at full load and therefore these additional gas costs have not been included, due to the efficiency of the combined cycle unit. This assumption has been made as the steam turbine is reclaiming waste heat and converting into energy, being the lowest emission turbine in the current fleet.

Diesel usage is based on the historical proportion of usage for the level of output.

In Alice Springs the ratio of diesel to gas burned by the MAN units has been amended to reflect higher percentage of operating time on diesel in the summer months for these machines.

The table below outlines the projected delivered cost and volume of diesel with average price:

Diesel Feed (PJ)	19-20	20-21	21-22	23-24
Darwin-Katherine	0.0025	0.0025	0.0024	0.0028
Alice Springs	0.0991	0.1012	0.1032	0.1136
Tennant Creek	0.0025	0.0025	0.0024	0.0028
Yulara	0.1883	0.1562	0.1597	0.1628
Kings Canyon	0.0153	0.0153	0.0153	0.0153
Volume (PJ) [1]	**0.3078**	**0.2778**	**0.2830**	**0.2973**
Cost ($000s)	8,893	8,186	8,527	9,138
Average Price ($/GJ)	**28.89**	**29.47**	**30.14**	**30.74**

[1] *the calculation for a PJ is 10^6 multiplied by 1 GJ*

Repairs and Maintenance (R&M)

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

Power Station ($Million)	19-20	20-21	21-22	22-23	23-24
Channel Island	9.5	9.3	11.0	11.8	11.9
Weddell	3.0	3.2	3.0	3.6	3.6
Katherine	2.9	1.8	1.9	1.8	1.8
Tennant Creek	1.7	2.6	2.6	2.4	2.4
Ron Goodin	0.0	2.1	0.9	0.0	0.0
Owen Springs	4.3	5.8	6.5	7.5	7.5
Kings Canyon	0.4	0.5	0.5	0.4	0.4
Yulara	1.8	1.0	1.2	1.2	1.2
Total	**23.6**	**26.3**	**27.6**	**28.7**	**28.8**

In January 2020 a working group was established to address a range of strategic issues including the impact of increasing levels of solar PV upon the business. This will include a further refinement of works required and an assessment of associated costs to allow TGen's more efficient units to continue to run, along with the costs associated with the increased wear on gas turbine components due to thermal cycling. The findings from this assessment is likely to result in higher R&M expenditure requirements than estimated in the table above.

Due to the unforeseen change in operating requirements in the Alice Springs region, costs have been allocated for the continued operation of the 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. A reduction in personnel is expected as a result of improved systems and processes being implemented and the transition to closure for the Ron Goodin Power Station.

The FTE targets in the 2019/20 SCI remain in the 2020/21 SCI.

Personnel Costs

Wages are assumed to increase by 2.5% pa for all employees in line with the TGen's Enterprise Agreement.

Operational Projects

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.

Description ($'000)	20-21	21-22	22-23	23-24
Pine Gap Project	11,196	4,415	0	0
Site based operational improvement projects	92	369	365	374
Pronto system improvement projects	286	25	0	0
Payroll system scoping	76	52	53	55
Cyber Security Integration Project	329	336	344	352
Security Improvements	326	330	335	344
Total operational projects	**12,305**	**5,527**	**1,097**	**1,125**

Committed Savings

Commited savings have been assumed for the full period of the SCI.

Item ($ Million)	20-21	21-22	22-23	23-24
Committed savings	3.0	3.0	4.0	4.1

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

Capex

Major Capital Expenditure:

The table below summarises proposed major capex:

Item ($ Million)	19-20	20-21	21-22	22-23	23-24
YPS Alternative Energy System	1.8	11.5	2.9	0.0	0.0
Darwin – Katherine BESS	0.5	12.0	17.1	0.0	0.0
Total approved	**2.3**	**23.5**	**20.0**	**0.0**	**0.0**

Capex over $1 million:

The table below summarises capex projects over $1 million:

Item ($ Million)	19-20	20-21	21-22	22-23	23-24
CIPS C6 Rotor Replacement & Major Overhaul	4.1	0.0	0.0	0.0	0.0
CIPS 132 kV Node 3 & 4 Swap Over	0.4	0.0	0.0	0.0	0.0
CIPS Second Gas Pipeline	7.8	7.8	3.0	0.0	0.0
CIPS C8 & C9 132 kV Cable Replacement	1.9	2.1	0.7	0.0	0.0
CIPS C1-C6 132 kV Cable Replacement	1.5	0.0	0.0	0.0	0.0
WPS W2 Hot Section Exchange	3.9	0.0	0.0	5.0	0.0
CIPS unit 8 & 9 Control System Upgrade	0.5	2.0	1.5	1.0	0.0
WPS W1 Major Overhaul	0.0	4.4	2.6	0.0	0.0
WPS W3 Major Overhaul	0.0	0.0	7.0	0.0	0.0
C1/C2 Repower	0.0	0.0	0.0	7.6	7.6
CIPS C6 Cooling Tower Refurbishment	0.0	0.0	1.3	0.9	0.0
Earthing Remediation (all sites)	0.3	0.0	0.0	1.2	0.6
CIPS C8 B Service	0.0	6.5	5.0	1.0	0.0
C6 Life Extension Works - to be defined	0.0	0.0	0.8	2.2	3.0
CIPS - Demineralised Water Treatment Plant	0.0	0.0	0.0	1.0	0.5
C9 Major	0.0	0.0	0.0	1.4	7.5
WPS Improvements Project	0.0	1.4	0.0	0.0	0.0
C7 Engine Replacement	0.0	4.8	2.1	0.0	0.0
CIPS Alternative Energy	0.0	0.0	0.0	1.0	0.0
CIPS Control System upgrade	0.0	0.0	0.0	3.1	4.9
OSPS Set A Engine replacement	0.0	0.0	0.0	1.2	1.8
OSPS Alternative Energy	0.0	0.0	0.0	0.0	1.2
Total Capex >$1M	**20.4**	**29.0**	**24.0**	**26.6**	**27.1**

Other Capex:

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

Item ($ Million)	19-20	20-21	21-22	22-23	23-24
BAU Other	2.3	1.2	0.6	0.5	1.0
Total other capex	**2.3**	**1.2**	**0.6**	**0.5**	**1.0**

Total Capex:

<table>
<tr><td></td><td>
The total forecast for capex is:
<table>
<tr><th>Item($ Million)</th><th>19-20</th><th>20-21</th><th>21-22</th><th>22-23</th><th>23-24</th></tr>
<tr><td>Total all items</td><td>25.0</td><td>53.7</td><td>44.6</td><td>27.1</td><td>28.1</td></tr>
</table>
The continued increase in solar PV has resulted in an increased emphasis on the management of TGen's assets as this increases the physical stress on the generators that will need to stop and start more often than designed for. In January 2020 a working group was established to assess the impact on TGen's assets and the business. The result of this assessment could result in the recommendation to retire existing plant and replace with new small and fast acting plant.
These changes have not been considered in the assessment of the above capital expenditure tables.
</td></tr>
<tr><td>Fixed Assets and Depreciation Expense</td><td>
The cost and book value of fixed assets is based on the fair value recorded in the Corporation's accounts.
Depreciation rates are forecast 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:
<table>
<tr><td>Straight line</td><td>90%</td></tr>
<tr><td>Equivalent operating hours</td><td>10%</td></tr>
</table>
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.
</td></tr>
<tr><td>Consumer Price Index (CPI)</td><td>
Revenue and cost escalation assumptions are based on contractual or employment obligations where applicable.
Where no mandated escalations exist, the following CPI rates have been assumed:

2020/21 – 1.4%
2021/22 – 1.5%
2022/23 – 1.7%
2023/24 – 2.5%

</td></tr>
<tr><td>Debt and Interest</td><td>
Debt is interest only and is assumed to be extended upon maturity through the SCI period.
<table>
<tr><th></th><th>19-20</th><th>20-21</th><th>21-22</th><th>22-23</th><th>23-24</th></tr>
<tr><td>Average Interest Rate</td><td>4.07%</td><td>3.95%</td><td>3.96%</td><td>3.98%</td><td>3.98%</td></tr>
</table>
</td></tr>
<tr><td>Tax</td><td>Tax expense is assumed at the corporate tax rate and includes the impact of tax effect accounting on taxable income over the period.</td></tr>
<tr><td>Dividend</td><td>The Territory Government is considered to have the right to receive a dividend from applicable entities calculated at 50% of the 30 June net profit after tax, subject to recommendation by the Corporation's Board.</td></tr>
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