

Goldfields Esperance Regional Energy Project - Final Report

Section 1 - Summary

1. Name of Organisation

City of Kalgoorlie-Boulder on behalf of the Goldfields Voluntary Regional Organisation of Councils (GVROC)

2. Project Name

Goldfields Esperance Regional Energy Project (herein referred to as “the Project”)

3. Funding Summary

The total Royalties for Regions funding received for the Project was \$3,339,964.00. The total expenditure of this funding was \$3,336,349.83. In addition to this funding, \$2,474,559 was leveraged from the Federal Government’s Community Energy Efficiency Program (CEEP). The percentage of the project funded from Royalties for Regions was approximately 57%.

4. Project Purpose

The primary purpose of the Project was to develop alternative energy sources and reduce the energy footprint of the Goldfields region. To achieve this the Project replaced existing streetlights with energy efficient light emitting diodes (LEDs) and installed solar photovoltaic (PV) systems on Council facilities. This provides long term benefits through reduced energy consumption and free clean energy generation, which benefits both the financial and environmental sustainability of the members of the GVROC.

5. Project Achievements

The Project was the first regional sustainability project to occur across the Goldfields. The LED streetlight component of the Project achieved the installation of 2724 LEDs across the region varying between 25W to 160W. The solar PV component achieved the installation of 506.25 kW of solar systems on GVROC facilities. Both components will lead to significant long term reductions in energy consumption, leading to approximately \$339,000 in savings per year and reduced greenhouse gas emissions (GHG) of 1175 tonnes carbon dioxide equivalent (T CO₂e), which has the same impact as removing 445 cars off the road.

Section 2 - Financial Report

1. Project Budget

The total Project budget of \$5,840,908.83 was comprised of \$3,339,964.00 funding received from Royalties for Regions, and \$2,474,559 leveraged the Federal Government's CEEP. The percentage of the Project funded by Royalties for Regions was approximately 57%.

2. Analysis of Project Budget, Disbursements and Expenditure

The expenditure was consistent with the approved budget and scope of the Project. Variations were made due to issues such as land acquisition and repurposing of contingency funding. Of the funding received from Royalties for Regions, the majority (over 99%) was spent over the duration of the Project. The remaining \$30,686.25 was not required to achieve agreed outcomes and will be returned to the Department following acceptance of this final report and receipt of an invoice for the remaining funds.

The Project and budget was managed by the City of Kalgoorlie-Boulder on behalf of GVROC. Disbursements were made on time and based on project milestones, which allowed for the project contractors to be managed effectively. It is difficult to measure the value for money of the project, as a significant component of the Project achieves environmental benefits which are intrinsically difficult to put a dollar value on. The expected savings on electricity bills is approximately \$339,000 per annum, which provides a payback period of 17 years. The project will lead to long term savings and financial returns, the extent of which is further detailed in **Section 3**.

3. Leveraged Funding

Funding to the amount of \$2,474,559 was leveraged from the Federal Government's Community Energy Efficiency Program (CEEP). This money was essential to ensuring that the Project made a significant financial and environmental impact over the large scale of the Goldfields region.

4. Financial Tables

A	PROJECT FUNDING DETAILS	
A1	Royalties for Regions Cabinet approved allocation for the project	\$ 3,339,964.00

B	STATEMENT OF RECEIPTS AND PAYMENTS	
	DESCRIPTION	\$
	Receipts:	
B1	Receipts from Royalties for Regions	\$ 3,339,964.00
B2	Interest received (where applicable)	\$ 57,072.08
B3	Other Royalties for Regions related income (e.g. recoups or repayments)	0
B4	Total Receipts	\$ 3,397,036.08
	Payments:	
B5	Capital	\$ 3,366,349.83
B6	Operating	0
B7	Total Payments	\$3,336,349.83
B8	Closing Balance	\$ 30,686.25
	Comments:	

C	ADDITIONAL FINANCIAL INFORMATION	
	Leveraged Funds (excludes Royalties for Regions related interest or other income stated in B2 and B3) Source:	\$
C1	Community Energy Efficiency Program (CEEP)	\$ 2,474,559
C2		
C3		
C4		
C5		

D	TOTAL REPORTED PAYMENTS FOR THE PROJECT (as reported at B7. RfR funds only)	\$ 3,336,349.83
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E	RfR PAYMENTS BY USE	\$
E1	Infrastructure	\$ 877,619.63
E2	Services	\$ 2,438,593.22
E3	Administration	\$ 50 136.98
E4	TOTAL – (Must equal Total Reported Payments at D)	\$ 3,366,349.83
Comments: Nil		

F	RfR PAYMENTS BY REGION (\$)				
	Region	\$		Region	\$
F1	Gascoyne		F6	Peel	
F2	Goldfields-Esperance	\$ 3,366,349.83	F7	Pilbara	
F3	Great Southern		F8	South West	
F4	Kimberley		F9	Wheatbelt	
F5	Mid West				
F10	TOTAL – (Must equal Total Reported Payments at D)				\$ 3,366,349.83
Comments: Nil					

G	RfR PAYMENTS BY CATEGORY (\$)				
	Category	\$		Category	\$
G1	Agriculture		G8	Health	
G2	Communications		G9	Housing	
G3	Culture		G10	Mining	
G4	Community		G11	Recreational	
G5	Economic Development		G12	Tourism	
G6	Education		G13	Transport	
G7	Environment	\$ 3,366,349.83	G14	Utilities, Power & Water	
G15	TOTAL – (Must equal Total Reported Payments at D)				\$ 3,366,349.83
Comments: Nil					

Section 3 - Project Report

1. Project Purpose

The primary purpose of the Project was to develop alternative energy sources and reduce the energy footprint of the Goldfields region. This was achieved through the rollout of energy efficient LED lights and solar photovoltaic (PV) systems across the GVROC.

2. Aim of the Project

The Goldfields-Esperance 2011-2021 Strategic Development Plan identified energy infrastructure as a “critical” need for the region. The Plan notes the complexity of energy supply arrangements to the region, given the low population density and large landmass. Furthermore, energy is essential for regional development and regional industries such as mining, and transport. The Plan states that

“The challenges are to find cost effective ways to integrate renewable energy resources...into the energy requirements for the mining industry, regional towns and remote communities.” Also, “The need for a coordinated approach to the provision of new sources of energy and the maintenance and upgrade of existing infrastructure is critical.” (Section 3 Critical Needs.)

Following this Plan, the Project aimed to address the energy requirements of the Goldfields region. This was to be achieved through two components. Firstly, the retrofitting of street lights with LED lights in the Shires of Esperance, Dundas, Leonora, Laverton, Menzies, Ravensthorpe and the City of Kalgoorlie-Boulder. Secondly, the installation of Solar PV systems across GVROC facilities throughout the region. This approach would both reduce the energy usage of the GVROC, as well as provide clean renewable energy generation, leading to both financial and environmental benefits.

3. Project Achievements

The Project commenced in June 2014 and was completed by December 2017. The majority of the Project went as planned with some minor deviations from schedules, with variations required from the initial Financial Assistance Agreement (FAA). The achievements of the Project are detailed below in **Table 1** below. Photo evidence of each project item is provided in **Table 2**.

Table 1: Project Achievements

4.1.1 LED Street Light Upgrade		
LGA	Planned Outputs	Actual Outputs
Shire of Esperance	464 x 120W LEDs 1,279 x 25W LEDs	464 x 120W LEDs 1,279 x 25W LEDs
Shire of Leonora	105 x 120W LEDs 106 x 25W LEDs	105 x 120W LEDs 106 x 25W LEDs
Shire of Dundas	119 x 120W LEDs 147 X 25W LEDs	119 x 120W LEDs 147 X 25W LEDs
Shire of Laverton	74 x 120W LEDs 91 x 25W LEDs	74 x 120 W LEDs 91 x 25W LEDs
Shire of Menzies	20 x 120W LEDs 28 x 25W LEDs	20 x 120 W LEDs 28 x 25W LEDs
Shire of Ravensthorpe	8 x 120W LEDs 247 x 25W LEDs	8 x 120W LEDs 247 x 25 W LEDs
City of Kalgoorlie-Boulder	400 x 25W LEDs	36 x 160W LEDs (including new poles)
4.1.2 Solar PV Installations		
LGA	Planned Outputs	Actual Outputs
Shire of Coolgardie	150 kW system at Kambalda Recreation Centre	99.75 kW system installed
	30 kW system at Coolgardie Recreation Centre	30 kW system installed
Shire of Esperance	50kW system at the Administration Office	60 kW system installed
City of Kalgoorlie-Boulder	100 kW system at Goldfields Arts Centre	99.7kW system installed
	30 kW system at Animal Management Facility	30 kW system installed
Shire of Laverton	50 kW system at Laverton Visitors Centre	50 kW system installed
	50 kW system Laverton at Administration Building	50 kW system installed
Shire of Menzies	50kW system at Administration Office 10kW system at Caravan Park	29.8 kW system installed at Administration Office
Shire of Ravensthorpe-	50 kW system at Hopetoun Administration Office	57 kW system installed

Table 2 GVROC Regional Energy Project Photo Completion Evidence

LED Street Light Upgrade

Shire of Esperance



Shire of Leonora



Shire of Dundas



Shire of Laverton



Shire of Menzies



Shire of
Ravensthorpe



City of
Kalgoorlie-
Boulder



Solar PV Installations

Shire of
Menzies –
Administration
Building



Shire of
Laverton –
Administration
Building and
Visitor Centre



Shire of
Esperance –
Administration
Building



Shire of
Coolgardie –
Kambalda
Recreation
Centre



City of
Kalgoorlie-
Boulder Arts
Centre solar-
PV system



Shire of
Ravensthorpe
-Hopetoun
solar PV
installation



Coolgardie
Recreational
Centre solar
PV installation



Kalgoorlie
Animal
Management
Facility solar
PV installation



LED Streetlight Component

The installation of the LED streetlights was coordinated by the utility (Horizon Power or Western Power) which owned the streetlights within each Council. Horizon Power contracted their installation works to local electrical companies which were specifically trained to maintain the infrastructure. The majority of the contracting companies were based in the Goldfields and sourced their electrical tradesmen from the 12 regional areas within the GVROC. A street light audit was conducted by Horizon Power in each town prior to the retrofit project starting. This provided Horizon Power with a better understanding of the highest priority streetlights to be upgraded and assisted with planning and the mobilisation of installers.

The new LED streetlights installed have a lifespan of over 50,000 to 100,000 hours and requires less than half the energy to achieve the same light as the old streetlights. The fitting does not use a glass lens but a polycarbonate compound which both increases shock resistance and the effects of vandalism. The robust technology of LED's and small size of the diode creating the light means the fitting is much less prone to external damage. This is particularly important as vandalism accounts for a large portion of the maintenance costs associated with the street lights in several of the regional Council's.

Solar PV Component

The installation of the solar PV component was completed by various qualified contractors and coordinated by the City of Kalgoorlie-Boulder. Local contractors were utilised for several of the installations, however the larger scale installations were generally awarded to businesses from Perth due to proven track records on similar scale projects. The solar systems have low maintenance requirements, and local businesses will be utilised for any maintenance as required. The solar PV installations all took place on Council facilities and due to their height are not expected to incur any vandalism or external damage. On a few occasions the output had to be slightly readjusted to fit available space on the roof.

4. Results Achieved

The Project has achieved its objective of providing alternative energy sources and reducing the energy footprint through the implementation of LED streetlights and solar PV systems across the Goldfields region. This has led to an overall improvement in the self-sufficiency, sustainability, energy security and environmental responsibility of the GVROC, which is of benefit to the entire region. The Project has led to financial savings for the GVROC which are further detailed below.

LED Streetlights

The success of the LED upgrade was reduced by the minimal reduction in savings passed on to the Shires by the Horizon Power. While the new technology was able to achieve an energy efficiency improvement of 2,501,752 MJ per annum and reduce maintenance costs to the shires, the overall tariff reductions were minimal. Despite this, LED lights will cause approximately 492 T CO₂e in reductions of GHG emissions per year. The LED streetlights component has improved community security by providing a more consistently lit environment which is expected to reduce anti-social behaviour.

The financial savings in energy consumption (based on Horizon Power utility tariffs) is as follows:

- \$54,571 per year in the Shire of Esperance;
- \$6,038 per year in the Shire of Leonora;
- \$7,076 per year in the Shire of Laverton;
- \$1,240 per year in the Shire of Menzies;
- \$10,922 per year in the Shire of Dundas;
- \$15,313 per year in the Shire of Ravensthorpe.

This total of \$95,160 does not include the reduced maintenance costs due to the greater lifespan of the LED lights over the redundant technologies. Despite this, these savings were considered a disappointing outcome as the original projected savings were significantly larger, however the environmental benefits of this component were achieved.

The streetlight project has been beneficial for the local community by improving visibility at night. Responses from the Shires of Esperance and Leonora found the following:

- 100% of respondents believe the lights improve energy efficiency;
- 97% of respondents believe that the new LED street lights have improved visibility;
- 97% of respondents believe the lights improve safety, generate more light and will result in cost savings; and
- 95% of respondents believe the lights makes the area look more attractive.

Solar PV

The Solar PV installations across the Goldfields region totalled 506.25 kW of renewable energy generation, which will generate on average 813 MWh of renewable energy every year (modelled on Kalgoorlie-Boulder sunlight conditions). Using the purchased emissions factor of 0.78 for Western Australia, this will lead to a reduction of 634 T CO₂e emitted per year. The financial savings generated at an assumed rate of 30c per kWh for the purchase of grid electricity is calculated to be:

- \$62,517 per year in the Shire of Coolgardie;
- \$28,909 per year in the Shire of Esperance;
- \$62,493 per year in the Shire of Kalgoorlie-Boulder;
- \$48,182 per year in the Shire of Laverton;
- \$14,358 per year in the Shire of Menzies; and
- \$27,464 per year in the Shire of Ravensthorpe.

This total savings of \$243,923 is likely to increase if electricity costs continue to go up. The return on investment for the solar PV component of this project was greater than the LED streetlight component primarily due to the minimal reduction in savings passed on to the Shires by Horizon Power. Due to the high energy consumption of the Council facilities where installations occurred, minimal electricity will be exported back the grid and instead will be primarily consumed by the facilities. This provides the greater savings as the cost to purchase electricity from the grid outweighs money generated from exporting to the grid.

Other Benefits

In addition to the results achieved, this has led to many positive media stories which have highlighted the benefits of the Project and sustainability in the region. An unanticipated result was the contribution of the solar PV installation at the Goldfields Arts Centre for the awarding of the State Tidy Towns Sustainable Community Award for 2017. This was the first time Kalgoorlie-Boulder has won the award in its 48 year history and will help promote Kalgoorlie-Boulder as a sustainable and liveable City.

5. Achievement of Royalties for Regions principles

Building capacity in regional communities

The Project improved capacity and resilience in regional communities by ensuring alternative energy sources are available. Power outages resulting from the recent large storm that hit Kalgoorlie-Boulder, Coolgardie and Kambalda (18/11/2017) lasted several days, affecting many local businesses and community facilities. This demonstrates the need for alternative energy sources, including renewable energies which provide power independently to the grid.

Retaining benefits in regional communities

In total, 100% of the capital expenditure of this project occurred in the Goldfields region. The Project will provide long term benefits to the regional Councils which includes reduced energy bills and reductions in fossil fuel emissions. Reduced electricity bills allows more money to be redirected to other projects that benefit the community. It is of particular benefit for the Goldfields Council's to reduce their grid energy usage due to the high demand for energy resulting from the climate and remoteness.

Improving services to regional communities

The LED streetlight component of the project has improved lighting across many Goldfields communities which will lead to improved community safety.

Attaining sustainability

One of the primary purposes of the Project was to reduce the energy footprint of the Goldfields region, which is a key part of achieving environmental sustainability. The reduced energy usage from switching to LED lights will directly reduce fossil fuel emissions to a magnitude of 492 T CO₂e every year. Furthermore the installation of solar PV systems reduces reliance on grid energy, and prevent approximately 634 T CO₂e from being emitted every year. The total of this equates to taking approximately 240 cars off the road.

Expanding opportunity

The Project did not address this Royalties for Regions principle.

Growing prosperity.

Reducing Council energy bills will allow money to be saved and invested in other areas, which is of benefit to growing prosperity in the region.

6. Project Governance/Management

The Project was primarily managed by Ryan Wilson, the Sustainability Officer from the City of Kalgoorlie-Boulder on behalf of GVROC, along with external project managers including Enigin and Horizon Power. Several other officers at the City of Kalgoorlie-Boulder have managed the project following Ryan's departure from the City. Financial management of the project was undertaken by the finance department at the City of Kalgoorlie-Boulder. Project management could have been more effective or efficient if improved record keeping was maintained by successive project managers.

Conditions of the agreement were broadly adhered to, and any changes were made through variations applied for to the department. Variations to the agreement occurred to allow the abandoning of a 100KW ground mounted system at Laverton due to land acquisition issues. This instead allowed a 50KW roof mounted system on the Shire of Laverton Administration Building, which complemented the 50KW roof mounted installation at the Laverton Tourist Centre. This variation achieves a better result as these systems are less likely to be vandalised.

7. Risk Analysis

The risks that occurred in this project were mostly consistent with those identified in the business case, however some were not appropriately identified. If the project were to occur again, improved project and risk planning, project documentation, financial record keeping and project management software would be utilised. The risks identified in the business case, as well as the outcomes of the mitigation measures are detailed in **Table 3** below.

Table 3: Project Risk Analysis

Risk	Level (low, medium, high)	Mitigation	Outcome
Overall Project Risks			
Delays in delivery of products leading to project delays and schedule over-run	Medium	<ul style="list-style-type: none"> • Build in contingency in advance of first order and build in buffer to mitigate for delays for early stages of implementations; and • Late delivery penalties to suppliers. 	<ul style="list-style-type: none"> • Milestone payments were utilised to ensure that products were delivered on time to achieve installations.
Inexperienced or unprofessional workforce leading to workplace accidents/injury and schedule delays	Medium	<ul style="list-style-type: none"> • OH&S policies and procedures established and in place; • Contractors history of OH&S; • Demonstrated compliance with OH&S policies; and • Verification of the history of reporting management of incidents. 	<ul style="list-style-type: none"> • No OH&S issues occurred as a result of the Project.
Contractor non-performance leading to project delays and schedule or cost over-runs	Medium	<ul style="list-style-type: none"> • Use of approved contractors; • Non-performance penalties; and • Select proven contractors and products. 	<ul style="list-style-type: none"> • Some delays to projects occurred due to contractor non-performance, however this did not affect the outcome.
Damage to property during installation	Low	<ul style="list-style-type: none"> • Experienced and trained contractors 	<ul style="list-style-type: none"> • Several PV panels were destroyed by

		applying standard operating procedures.	Council staff during one of the solar installations. This was accidental and were replaced with remaining funds.
Specific to Component 1 – LED street light retrofit			
Failure to achieve energy efficiency targets	Low	<ul style="list-style-type: none"> Existing approved LED fittings already deployed across the network; Testing equipment following installation is in accordance with current standards; Vendor and Contractors to provide product warranties; and Post installation audits 	<ul style="list-style-type: none"> Actual energy efficiency targets exceeded the modelled targets at the beginning of the Project.
Inability to negotiate a mutually agreed upon contract with Horizon Power.	Medium	<ul style="list-style-type: none"> Horizon Power have committed to negotiating a contract; and Stakeholder management and communication. 	<ul style="list-style-type: none"> Contract signed with Horizon Power.
Parts and labour costs exceed budget resulting in reduced number of retrofit street lights	Low	<ul style="list-style-type: none"> Purchase price of LED lights and installation crews are fixed under contract between the utility and vendor/contractors. 	<ul style="list-style-type: none"> The LED lights came under the initial budget, due to reduced numbers required by Horizon Power.
Specific to Component 2 – Solar PV installations			
A future reduction in buy-back reduces benefits from exported power	High	<ul style="list-style-type: none"> GVROC to seek to secure a long term renewable energy contract with Horizon Power if possible, which specifies the buyback tariff. 	<ul style="list-style-type: none"> This has proven to be largely inconsequential as the majority of electricity generated from the sites selected will be directly consumed by Council facilities.

Reduction in electricity tariffs reduces benefits from avoided grid purchased electricity	Low	<ul style="list-style-type: none"> Electricity prices have historically risen over time but this cannot be guaranteed. No mitigation possible 	<ul style="list-style-type: none"> Electricity prices have continued to rise thus far.
Horizon Power's hosting capacity for renewable energy per town reduces and the planned PV sizes cannot be installed	Medium	<ul style="list-style-type: none"> Hosting capacity is updated monthly by Horizon Power; and Timing is the key to take advantage of the available grid capacity before it is taken up by other installations. 	<ul style="list-style-type: none"> Some technology related issues were identified with Horizon Power due to limited testing of new systems, however a solution was negotiated and the PV installations were approved.
Site load varies over time and PV capacity is not optimised. For sites with high buy-back tariffs, portion of load exported is not as great as expected.	Medium	<ul style="list-style-type: none"> Conduct analyses of each site's historical load profile to optimise sizing of PV system; and Review intended life of facility and consider any foreseen future changes to operations which will impact on the site's electricity demand. 	<ul style="list-style-type: none"> Sites selected have high power consumption and therefore grid feedback will be minimal. PV has been optimised efficiently to reduce grid energy consumption.
Sites are not found to be suitable for PV installation or require significant modification (such as roof reinforcement) to make good	Medium	<ul style="list-style-type: none"> Consultants to undertake building analysis and assessments prior to procurement of PV installers. 	<ul style="list-style-type: none"> One site in Laverton found unsuitable due to land acquisition issues, this was remedied through a variation. All sites were found suitable for PV installations through structural and electrical inspections.

PV systems are damaged by vandalism	Medium	<ul style="list-style-type: none"> Consider location and height of panels in planning process Fencing included in capital cost for ground mounted 	<ul style="list-style-type: none"> All PV systems installed on sufficiently high roofs, no damage incurred thus far and low risk of vandalism anticipated.
• Unforeseen Risks			
Risk	Level	Occurrence	Outcome
Variations to power agreements due to solar installations	Medium	<ul style="list-style-type: none"> For the solar PV installation at the animal management facility in Kalgoorlie-Boulder Alinta had to determine if the power export would alter the existing power contract of the facility 	<ul style="list-style-type: none"> This led to a delay in application to Western Power which pushed back the installation by a few weeks.
Project Management - Staff Turnover	Medium	<ul style="list-style-type: none"> Four different officers have managed the project over the final year due to staff turnover 	<ul style="list-style-type: none"> Delays to the Project and communication difficulties, limited record keeping.

8. Local Content

In the LED streetlight component, Horizon Power used local electrical companies to install the new lights. The Solar PV component of the Project employed local contractors including Outback Energy, a business owned and operating in Kalgoorlie-Boulder. In addition, local contractors were utilised across various phases of the Project, including structural and electrical inspections, electrical works, and project auditing.

9. Aboriginal Participation

The Project didn't explicitly target Aboriginal Participation, however the Project has contributed to reducing energy bills across for the Goldfields regional Council's which will free up funding to be used for other projects including those that benefit the Aboriginal and local communities.

10. Project Continuation

The Project will not continue in the future, however it is likely that regional sustainability projects will take off where this project left. The Project was the first large scale regional renewable energy project in the Goldfields and provides both a learning experience and the founding block for future projects of a similar nature, and was a vital "kick off" for achieving

sustainability in the region. The infrastructure the Project acquired will continue to reduce energy consumption across regional Councils for many years.

The ownership of infrastructure purchased through the Project has been transferred to relevant Government agencies. All LED Streetlights have been transferred to Horizon Power and Western Power and therefore ongoing maintenance is under their responsibility. Solar PV installations belong to the relevant Shires and the maintenance falls to the individual Shires. All assets from this project have low maintenance requirements and long lifespans, ensuring that there are low ongoing maintenance costs for the regional Councils involved.

11. Key Learnings and Discussion

LED streetlight component

The GVROC is committed to a continued roll out of LED lighting technology to additional sites and will fully investigate the proposed timelines based on experience gained through the completion of this project. The need for a detailed analysis of the required timeline has been a key lesson learnt from the outcomes of this project. While the GVROC performed due diligence and conducted extensive background research into the technology, there were a number of complexities that arose related to potential tax implications from gifting assets, and electricity utility supply chain issues which were unforeseeable. Any future GVROC projects of this nature would undergo rigorous risk analysis, planning and management to sufficiently ensure the appropriate timeframes were allowed before commencement.

The GVROC now has a greater understanding of LED technology, and in particular understands the procurement and delivery aspects of an energy efficiency project. The GVROC has had excellent results by being an early-adopter of new energy efficient street light technology, and will continue to investigate options that will see improvements to energy efficiency for all GVROC sites in the future. Following on from this project the City of Kalgoorlie-Boulder is currently in the process to retrofit several facility carparks with LED lights.

Solar PV component

The solar installs provided learnings from the network providers (Western Power / Horizon Power) and electricity retailers (Alinta Energy / Synergy) which have different processes for installing solar systems on their networks. A key learning has been that these approvals can be delayed for a number of reasons, including:

- Testing of new technology;
- Requirements for additional information;
- Modelling required for existing contract variations;
- Critical stakeholders being on leave.

Therefore a learning outcome has been to submit applications early and assume that they may be delayed.

Other key learnings

- Solar PV projects are more cost effective in reducing electricity costs in the region compared to LED streetlight rollouts, but have similar impacts on reducing energy footprints.
- Maintaining good record keeping and documentation is extremely important across such a long project, particularly as staff changeover is likely to happen.
- More detailed annual reports including specific outcomes, spending per budget item and photos of the project would be beneficial for project documentation.

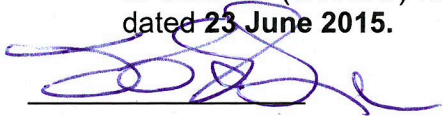
Section 4 - Authority Declaration

1. Signature of Accountable Authority

[The Accountable Authority should be the original signatory to the Agreement (position), normally the Chief Executive Officer or Director General of the organisation.]

I hereby certify to the best of my knowledge, information and belief that the accompanying Final Report:

- has been prepared in accordance with the terms and conditions of the Agreement;
- is not misleading or inaccurate and presents a true and fair view of the financial status of the Royalties for Regions funding received by the City of Kalgoorlie-Boulder on behalf of the Goldfields Voluntary Regional Organisation of Councils (GVROC) and its receipts for the Goldfields Esperance Regional Energy Project; and
- City of Kalgoorlie-Boulder on behalf of the Goldfields Voluntary Regional Organisation of Councils (GVROC) has complied with the obligations imposed by the Agreement dated **23 June 2015**.



Signature of Chief Executive Officer or Accountable Authority

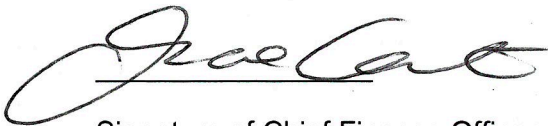
John Walker, Chief Executive Officer

28/12/2017

2. Signature of Chief Finance Officer or accountable officer

I hereby certify to the best of my knowledge, information and belief that the accompanying Financial Report:

- has been prepared in accordance with the terms and conditions of the Agreement;
- is not misleading or inaccurate and presents a true and fair view of the financial status of the Royalties for Regions funding received by the City of Kalgoorlie-Boulder on behalf of the Goldfields Voluntary Regional Organisation of Councils (GVROC) and its receipts for the Goldfields Esperance Regional Energy Project; and
- City of Kalgoorlie-Boulder on behalf of the Goldfields Voluntary Regional Organisation of Councils (GVROC) has complied with the obligations imposed by the Agreement dated **23 June 2015**.



Signature of Chief Finance Officer or Accountable Officer

Ivana Castle, Chief Finance Officer

27/12/2017

3. Auditor's Opinion

[The complete Final Report must be audited by an independent auditor. The following text should be used where this page is signed. Otherwise, the auditor can use their own letterhead using the wording and detail provided below.]

In my opinion, the attached Final Report of the Royalties for Regions funding for the Goldfields Esperance Regional Energy Project is, in all material respects, in compliance with the terms and conditions of the applicable Department of Primary Industries and Regional Development Agreement.

The Financial Information contained in the Final Report is based on proper accounts and presents fairly, in all material respects, the cash Receipts and Payments for the Project in accordance with Australian Accounting Standards.

Signature of Auditor

Name:

Position:

Registered Auditor Number:

Audit/Accounting Firm name:

ABN:

Date: