



Group level business case report



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Energetics is a specialist energy and carbon management consultancy. Our experts help clients to

- Be leaders. Develop and implement strategy
- Be informed. Make data-driven decisions
- Be efficient. Drive business improvement and realise savings
- Buy better. Leverage energy supply and carbon markets

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Document Control

Description	Prepared by	Reviewed by	Approved by	Approval Date
Working draft	Miheka Patel Anita Stadler	Marina Lou	Anita Stadler	30/04/2019
Final Draft	Marina Lou Miheka Patel	Anita Stadler	Anita Stadler	07/05/2019
Final	Marina Lou Miheka Patel	Anita Stadler	Anita Stadler	10/5/2019

Executive summary

The Victorian Local Government Buyers' Group (the Buyers' Group) is composed of 39 Victorian local councils which are seeking to understand the potential cost and benefits of entering into a renewable energy power purchase agreement (PPA) to meet their future corporate electricity needs and sustainability aspirations. The collective load currently nominated by these Councils is 142GWh per annum.

As the result of a competitive tender process, Energetics was engaged to provide strategic, technical and analytical support for the Buyers' Group in this decision-making process. In Stage One of this project, Energetics has built a business case for the Buyers' Group, which takes into account each potential member's electricity demand profiles, load and retail contract margins in assessing the comparative value of contracting under a renewable PPA against the business as usual (BAU) arrangements.

This business case report provides the members of the Buyers' Group with

- The necessary background information of the underlying market context and price drivers for the outcomes of the business case
- Energetics' key assumptions and approach to financial modelling
- The rationale for the selection of pricing models included in the business case
- The results of the business case
- Recommendations for implementation

Options modelled

Based on the feedback from the Buyers' Group, Energetics undertook financial analysis for the Buyers' Group comparing the outcomes of the two indirect supply-linked PPA models to BAU:

- Option 1: a partially fixed, firm PPA
- Option 2: a fixed, firmed PPA

In both instances, we assumed that Councils will procure 1:1 LGCs per MWh purchased (i.e. 100% renewables). These two options were compared to business as usual electricity procurement under three long range electricity price series influenced by different renewable energy uptake scenarios (low-, mid- and high-renewables). The results for BAU and the PPA options illustrate the financial outcome for two alternative uses for Large-scale Generation Certificates (LGCs), as summarised below:

- meet the Council's indirect compliance obligation¹ and voluntarily surrender the other LGCs to support the claim that it procured 100% renewable energy through the PPA. Voluntarily surrendered LGCs can be counted as emissions savings
- meet the Council's indirect compliance obligation (approximately 20%) in line with the retailer's obligations under the RET and sell the remaining LGCs²

¹ i.e. the Renewable Power Percentage under the Renewable Energy Target Scheme is approximately 20% of LGC's procured under the PPA. This will displace the LREC charge on the Council's electricity bill associated with the volume of electricity procured under the PPA

² Rather than sell, the Council could use the LGCs to meet its indirect compliance obligation associated with load not contracted under the PPA. This option would be financially more advantageous but has not been modelled.

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Summary of results

The body of the report discusses the results with reference to annual year-on-year budget impacts and the resulting net present cost (NPC) for the Buyers' Group. This analysis excludes the cost of network charges, market charges and environmental charges (other than LGCs) that are not influenced by a corporate renewable PPA. These changes typically constitute about half of the total electricity bill.

Noting that though the value of a corporate PPA is best assessed as NPC over the life of the PPA (as in the table below), the annual net positions should help give Council members insight into the trend of change for power prices and LGC prices respectively. This is summarised in this report but these high-level results must be read in conjunction with the accompanying MS Excel file with results presented for each individual Council.

Energetics' financial modelling of the relative costs of entering into a renewable PPA for the Buyers' Group at an aggregate level are summarised below, compared to BAU.

Summary of NPC for the Buyers' Group over the term of the PPA (\$-million)

Price model	A. Power + voluntary LGCs (80%). i.e. equivalent to 100% renewable energy			B. Power + Compliance LGCs only			Power Only		
	BAU	Fixed firm PPA	Partially fixed firm PPA	BAU	Fixed firm PPA	Partially fixed firm PPA	BAU	Fixed firm PPA	Partially fixed firm PPA
Low-Renew	108.7	88.4	90.1	100.7	81.7	83.5	97.5	79.4	81.1
Mid-Renew	98.1	87.7	86.8	90.1	81.1	80.2	86.9	78.7	77.8
High-Renew	81.0	86.5	81.6	73.0	79.9	74.9	69.8	77.5	72.6

It is expected that Councils will benefit from using renewable PPAs to hedge against future volatilities in the energy market, thus improving its budget certainty. In addition, based on a **mid-renewable energy price scenario** and the aggregate load shape of the group, the model shows that under the two indirect supply-linked PPA models:

- A. the 100% renewable option could save a council **approximately \$8 per MWh**
- B. the compliance LGC option could save a council **approximately \$7 per MWh**, but this option will not provide the Council with emission savings

The 100% renewable PPA options are significantly lower cost than BAU under the low- and mid-renewables scenarios (i.e. between 19% and 11% depending on the PPA price model and price forecast scenario). However, under a high renewable price scenario the BAU contract option as modelled results in a lower cost outcome (i.e. 7% lower than the "fixed price" PPA option; and 1% lower than the "partially fixed" price PPA option).³

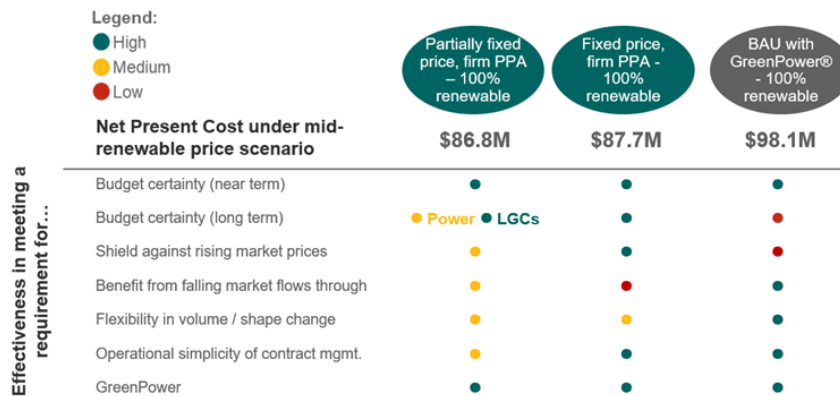
³ These percentages will more or less half if expressed as a percentage of the total electricity bill, including network, market and other environmental charges.

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Whilst the collective load of the Buyers Group provides its members with a great opportunity to secure the best possible pricing from the market, in the long-term the evolution of the electricity market carries with it a high level of price uncertainty. There is no guarantee that a 10-year PPA executed today will always be “in the money” compared to BAU as illustrated under the high-renewables scenario. Therefore, consideration must also be given to the non-price attributes of the respective models as rated in the next table.

Effectiveness of options modelled in meeting Buyers’ Group requirements



In the event that a high-renewables uptake scenario eventuates similar to the projections under Energetics’ model, Councils must consider whether the size of the potential cost premium is material in the context of the overall operational budget and whether they are adequately counterbalanced by other benefits such as

- Increased budget certainty
- Increased avoided emissions
- Enhanced sustainability leadership credentials amongst the community and internally with staff
- Reduced administrative burden of procuring electricity and offsets over the term of the contract

Additionally, we found that based on the aggregated load currently committed by the members of the Buyers’ Group, over the life of the contract, a renewable PPA will result in **avoided emissions of 1,217,628 tCO₂e, equivalent to avoiding the greenhouse gas emissions of 263,769 passenger vehicles in one year.**⁴

⁴ Here we calculate the aggregate emissions under the business as usual plus compliance obligations where 100% of the LGCs contracted under the load are surrendered. The comparison is based on the EPA Greenhouse Gas Equivalencies Calculator available at < <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>>.

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Recommendations for implementation

Based on the financial modelling that Energetics conducted using the Buyers' Group aggregated load, the model shows that if the Buyers' Group optimises its hedging position through a partially fixed, firm PPA contract with a retailer, it can produce material financial and emission savings. In order to optimise its position in a renewable PPA contract, the potential members of the Buyers' Group should consider the following in their internal business case development and subsequent tender process:

1. Agree on the price risk parameters for the Buyers' Group to allow fixed, firm and partially fixed, firm price offers in the tender process
2. Consider being open to tenderers in pricing each account type separately
3. Remain technology neutral and be open to both new and existing projects for its portfolio of renewable assets
4. Agree on the commencement date and term of the renewable PPA
5. Seek upfront commitment from all Buyers' Group members to the tender outcome, subject to the final offer being within the agreed price parameters (such as *NPC of the PPA offer may not exceed BAU under the mid-renew price scenario for the 100% renewable by more than 5% or 10%*).