



Rooftop rental agreements as a green finance mechanism for solar PV

The application of a power purchase and rental agreement model to finance a solar photovoltaic system for a retail company in Cape Town.

The retail sector is adapting through energy resilience interventions. This is bolstered by the comparative economic and energy security-linked advantages that the City of Cape Town provides to its constituents. This case study explores the application of a power purchase and rental agreement (PP-RA) model to finance a 250.8 kW solar photovoltaic (PV) system for Pick n Pay in Brackenfell, Cape Town.

This case study is written for:

Commercial property owners who are looking to implement rooftop solar PV systems to provide green energy for their tenants while diversifying their revenue streams.



Challenge

The Pick n Pay Group aims to be carbon neutral by 2050. A lever for achieving their carbon neutrality goal is increasing renewable energy usage across its retail network in South Africa. Pick n Pay plans to maximise the usage of landlord-supplied solar energy while not negatively influencing the financial position of the individual outlet.





Solution

A rooftop rental agreement is a possible mechanism that can be used to maximise landlord solar installation and the purchase of renewable electricity by tenants in the retail sector.

A solar rooftop rental agreement, or power purchase and rental agreement (PP-RA), is a lease agreement that is signed between a property owner and a solar PV developer¹ for the use of their property roof to install a solar PV system.

In this model, the developer finances, installs, operates and maintains the system. This system is installed on the property owner's roof. For this, the property owner receives rental income² from the solar PV developer.

The property owner or tenant then purchases electricity from the system under a Power Purchase Agreement (PPA). The PPA tariff is billed monthly, based solely on the amount of electricity (kWh) the tenant consumes from an installed system. This tariff³ is designed to be at the same or similar rate to the applicable distribution utility's tariff, with linked increases. The benefit of this model is that it creates an income stream for the property owner, as well as a reduced carbon footprint, rather than a conventional savings from a reduced electricity cost.

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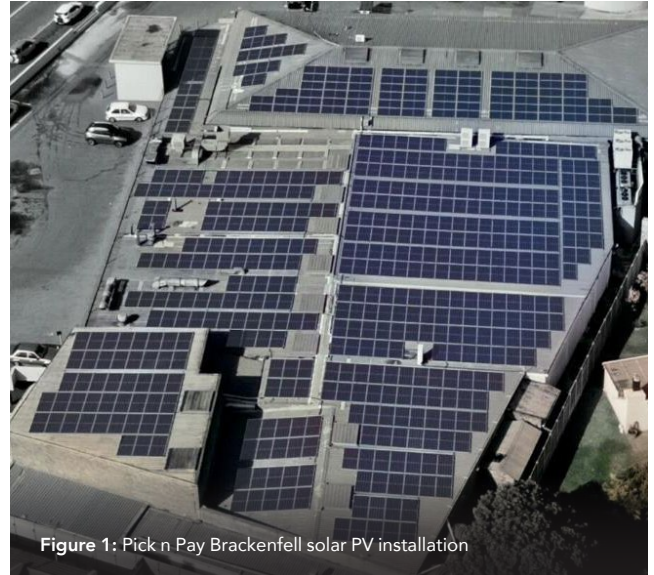


Figure 1: Pick n Pay Brackenfell solar PV installation

Figure 2 provides an overview of the project structure and flows between all relevant stakeholders.

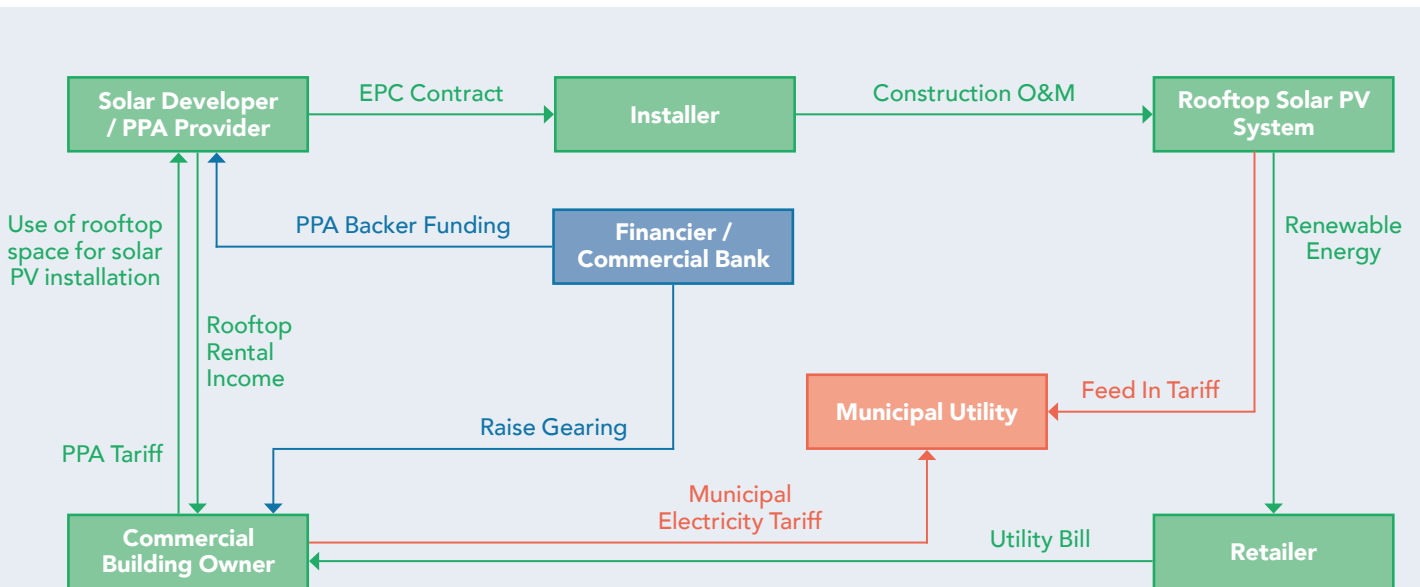


Figure 2: Roof rental project structure

¹ In some cases the developer partners with an engineering and procurement company to install, operate and maintain the installed system.

² The rental amount received depends on several factors, including the specific site solar yield of the property.

³ Typical PPA tariff rates are pegged at 70% - 85% of the applicable distribution utility's tariff.

⁴ Financial Gearing is the ratio of a company's debt to equity. It denotes the extent to which a company's operations are funded by lenders in comparison with the shareholders. Gearing measures the company's financial leverage. For example, if a company's equity to debt ratio is high, the business is said to be highly-reared or highly-leveraged.

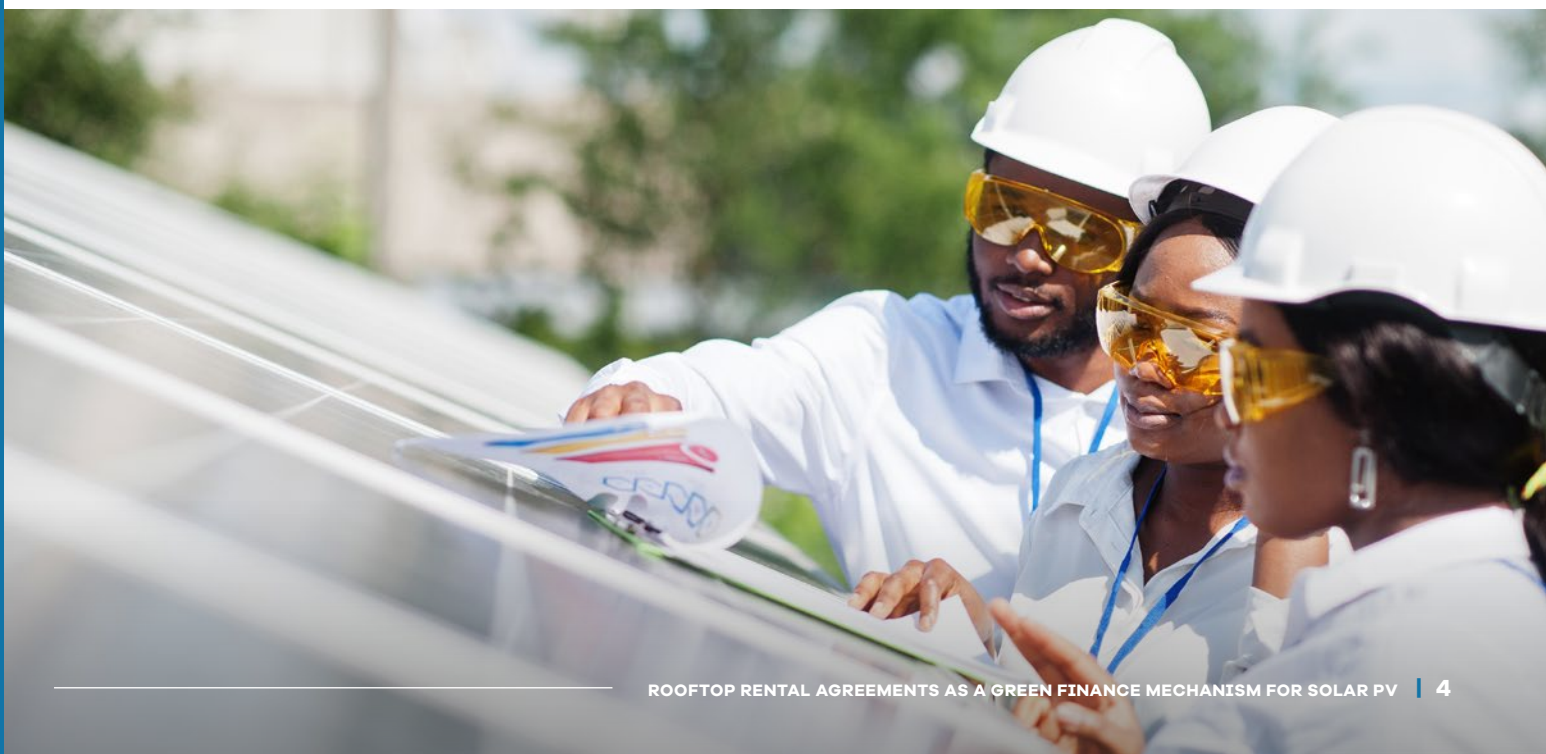


Business benefits

Pick n Pay (Brackenfell, Cape Town) has installed a 250.8 kW solar PV system to reduce its carbon footprint. The system was designed and installed by [Decentral Energy](#) and financed through a solar rooftop rental agreement offered by [Decentral Energy](#). Details of the project are provided in [Table 1](#).

Indicators	Project details
Electricity generated in a year	287 348.16 kWh
Yearly electricity consumption	1 298 789.14 kWh
% of consumption covered by PV	22.12%
Starting PPA rate	R1.6 / kWh
PPA escalation per annum	CPI + 3%
Contract term length	20 years
Municipal tariff	R1.98 / kWh
Revenue from Feed-in Tariff (FIT)	R0 (not exporting)
Monthly electricity cost without solar PV	R261 937.40
Monthly savings	R 2 959.68 (1.13%)
Monthly roof rental income	R15 666.68

Table 1: Pick 'n Pay Brackenfell solar PV project details



Assuming an electricity grid emission factor for South Africa of 1.06 kg CO₂e/kWh (estimated by Eskom in 2021). Through this installation, Pick 'n Pay Brackenfell has saved 304 588 kg CO₂e per year, reducing its carbon footprint by 22.12% and creating a new annual revenue stream of ~R188 000.



Lessons learned

A rooftop rental agreement is a possible mechanism that can be used to maximise landlord solar installation and the purchase of renewable electricity by tenants in the retail sector. This model increases the value of commercial property while creating a new revenue stream for the property owner.



For more info get in touch with our energy sector desk at energy@greencape.co.za



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