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CREDIT OPINION
26 May 2016

Update

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RATINGS

CPV Power Plant No.1 Bond SPV (RF) Limited

Domicile	South Africa
Long Term Rating	Ba3
Type	Senior Unsecured - Dom Curr
Outlook	Stable

Please see the ratings section at the end of this report for more information.The ratings and outlook shown reflect information as of the publication date.

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CPV Power Plant No.1 Bond SPV (RF) Limited

Update following Baa2.za national scale rating affirmation and Ba3 global scale rating publication

Summary Rating Rationale

The Ba3 global scale rating for CPV Power Plant No. 1 Bond SPV (RF) Limited (the Issuer), which maps to Baa2.za on the South Africa national scale, reflects the benefit of (1) a long-term power purchase agreement (PPA) with Eskom Holding SOC Limited (Eskom, Ba1 negative), the incumbent energy utility in South Africa; (2) backstop support from the Government of South Africa (Baa2 negative) in the event Eskom fails to honour its obligations under the PPA; (3) healthy solar resource and financial performance in the first year of operations, notwithstanding downtime for remedial construction works, and our base case forecast that debt service cover ratios will be above 1.40x.

However, the Ba3 global scale rating is constrained by (1) concentrator photovoltaic (CPV) technology, which is untested on a commercial scale; (2) recent poor performance in the O&M function by Group Five which have impeded the successful execution of management's plan; (3) the impending O&M handover phase to a new organisation as subcontractor to Group Five following Soitec's exit from the Project; (4) a relatively short ground-based history of local solar resource data; and (5) the infancy of South Africa's programme to push development of domestic renewable energy.

Exhibit 1
Project overview

Project description	44MWp (36MWac) concentrating photovoltaic solar power project
Location	Western Cape, South Africa
Issuer	CPV Power Plant No.1 Bond SPV (RF) Limited
Offtaker	Eskom Holdings SOC Limited
Regulatory regime	South Africa's Renewable Energy Independent PowerProducer Procurement Programme (REIPPPP) provides a feed-in tariff under a power purchase agreement with Eskom, whose obligations are backed by the Government
Commercial operations date (COD)	Dec-14
PPA expiry	Dec-34
Sponsors	Soitec (20%); the Public Investment Corporation (40% through a preferred share structure); Pele Green Energy (Pty) Ltd (35%); Touwsrivier Community Trust (5%).
Construction contractors	Group Five Construction (Pty) Ltd
Equipment manufacturer	Soitec Solar GmbH
Operations & Maintenance	Group Five Construction (Pty) Ltd (who subcontract the O&M)
Senior debt	ZAR 1 billion
Debt maturity	2029
Projected DSCR metrics	1.36x minimum (Nov-16); 1.65x average [1]
Financial covenants	Lockup 1.20x, Default 1.15x

(1) Moody's projected metrics under our base case assumption of P90 production for the full term of the debt.
Source: Moody's, the Issuer

Credit Strengths

- Long-term power PPA with Eskom for all power output, and backstop offtaker support from the Government of South Africa
- Relatively straightforward operating and maintenance requirements, notwithstanding "teething" problems encountered in first year
- Amortising debt structure that allows notable debt service headroom on the basis of P90 resource projections. This would allow some degree of underperformance on the assumptions underpinning our base case of DSCRs in excess of 1.40x

Credit Challenges

- The concentrator photovoltaic (CPV) technology is untested on this commercial scale and the potential operational benefits will need to be measured over time
- Soitec, the technology manufacturer and Project sponsor, is exiting the solar business and seeking to sell its shares in the Project, however the spare parts strategy is likely to mitigate long term impact of Soitec's exit
- O&M contractor performance has been below expectations, and arrangements are being finalised to subcontract the work to a new organisation

Rating Outlook

The Issuer, which owns the Touwsrivier concentrated photovoltaic (CPV) plant (the Project), has a stable outlook on its global scale and national scale ratings reflecting (1) our expectation that remaining remedial and outstanding construction works will be satisfactorily completed following the successful execution of the cabling and transformer works in 2015; (2) our expectation that the O&M handover to a new subcontractor will go smoothly, with minimum disruption to plant availability; and (3) the PPA and the ultimate support this receives from the government of South Africa. The project structure, as with all REIPP projects, provides some protection for creditors in the event of a material change in the terms of the power offtake.

Factors that Could Lead to an Upgrade

- Successful execution of the remaining remedial and outstanding works and smooth subcontracting of the O&M function to the new organisation
- A period of stable, predictable operational performance with availability levels consistently above 95% and O&M costs in line with budget

Factors that Could Lead to a Downgrade

- The operational performance of the Project is persistently below that assumed at the outset such that we forecast DSCRs below 1.40x on a persistent basis.
- The spare parts are consumed more quickly than anticipated, causing heightened risk around the long term viability of the project
- The terms of the PPA were detrimentally changed without successful Project recourse to the offtaker or South African Government

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moodys.com for the most updated credit rating action information and rating history.

Key Indicators

Exhibit 2

	2015
Annual DSCR	1.34x
Production ratio (%)	92%
Production (MWh)	69,204
Debt service (ZAR mill)	139.5

Source: the Issuer

Detailed Rating Considerations

Recent developments

On 10 May 2016, following the publication of Moody's revised methodology Mapping National Scale Ratings from Global Scale Ratings (published 9 May 2016), we affirmed the national scale rating of CPV Power Plant No. 1 Bond SPV (RF) Limited at Baa2.za in line with the new mapping on the South Africa (.za) scale. Concurrently, we assigned and published the global scale rating of Ba3. Moody's generates national scale ratings (NSRs) from global scale ratings (GSRs) via mappings specific for each country. To enhance transparency of the meaning of NSRs and to minimize the chances they will be misinterpreted, the updated methodology calls for the publication of an issuer's corresponding GSR whenever Moody's publishes an issuer's NSR. For further information, please refer to the press release "Moody's recalibrates South Africa's national rating scale and affirms Baa2.za rating of CPV Power Plant No.1 Bond SPV (RF) Limited; outlook stable" published on 10 May 2016.

Regarding the remedial and outstanding works agreed between the Project and its contractor, Group Five, to address snagging items and faults with transformers and cabling, we note progress has been made. The cabling work was complete as of 13 May 2015 and the 30 transformers were all replaced by the end of November 2015.

Actual plant production in the first full year of operations, 2015, was 69,204 megawatt hours (MWh) or 5.5% less than the 1-year P90 base case forecast of 73,229 MWh. Plant downtime over the year was largely due to one off events relating to the remedial works, but also to flooding over 6 days in June, and inadequate scheduling of cleaning and inverter maintenance.

On 19 January 2015, Soitec, the Project sponsor and technology manufacturer, announced plans to scale down its presence in the solar sector to focus more on its core electronics business. Soitec has ceased all manufacturing and R&D activities, and is looking to sell its shares in the Project. The Project company has devised new O&M arrangements and spare parts provisioning to ensure the long term viability of the installation following Soitec's exit from the solar equipment business (the documentation outlining these arrangements has received bondholder approval).

Progress on construction snagging items is credit positive

Although COD was achieved under the Eskom PPA, there remained remedial and outstanding works that prevented formal acceptance under the construction contracts. Complete acceptance under the initial terms of the Balance of Plant & Implementation Agreement and the Optimization Agreement (i.e. interface agreement) did not take place when initially planned as certain work had not yet been performed or correctly performed, preventing the Acceptance Testing as contemplated in those contracts. On 8 January 2015, bondholders passed a resolution approving a Remedial and Outstanding Works Agreement (R&O Agreement) to address these faults. The works relate to quality problems with the 30 transformers (requiring their replacement), remedial work to the DC cabling and various snagging items.

All DC cabling work was complete as of 13 May 2015 and all transformers were replaced by late November 2015, which we view as positive for the operating and credit risk profiles. Hatch Goba, the technical advisor, notes that all 30 replacement transformers were successfully installed and commissioned and have performed well, with measured temperatures below 80C (compared to over 100C for the old transformers). This notably reduces the operating and credit risk profiles relative to the first half of 2015, when there was a greater risk of transformer overheating and tripping on certain blocks (please see our Issuer Comment Touwsrivier CPV project rating unaffected following Soitec SA plans to scale down its solar business published 18 February 2015 for more detail).

As of May 2016, the works remaining under the R&O Agreement include (1) certain civil works relating to roads, erosion and flooding; (2) reconfiguration of the PV Box design to allow for automated generator start-up; and (3) certain grid code compliance issues, but the Project has an exemption from Eskom until the end of 2016.

Despite downtime caused by remedial works and O&M failings, 2015 production was robust

From 1 January to 31 December 2015, the Project produced around 69,204 MWh, compared to 73,229 MWh under the Moody's base case P90 forecast. The direct normal irradiance (DNI), a measure of the solar resource on site, was 2,430 kWh/m2 in 2015 compared to a 1-year P90 forecast of 2,335 kWh/m2. The 5.5% production shortfall relative to Moody's base case P90 forecast – despite the favourable solar resource on site – was largely due to one-off downtime during execution of the remedial cable and transformer works, and a period of flooding in early June 2015, and we expect the performance to improve. The main cause of underperformance due to the O&M function relates to maintenance of the inverters and poor scheduling of cleaning.

Owing to these events in 2015, the production ratio – a measure of plant performance – declined over the course of the year, but remained above the Group Five production ratio guarantee of 90% (below which Group Five, as O&M contractor, would be liable for penalties).

Mitigants in place to support long term operations following Soitec's exit from its solar activities

On 19 January 2015, Soitec S.A. (unrated), the Project sponsor and technology manufacturer, announced plans to exit the solar sector to focus on its core electronics business. Soitec has ceased all manufacturing and R&D activities, and is looking to sell its shares in the Project. As we have previously commented, the exit of Soitec has the potential to heighten credit risk in the medium to long term, absent appropriate mitigants. These implications relate to (1) availability of spares over the term of the debt; and (2) continuity of project management. Any discontinuation of Soitec's involvement in the technology or project management would expose creditors to the risks that available spares are inadequate, alternative technologies may not readily interface with the existing project (or, if alternatives are found they may be at higher cost or lower production), and that the technical project management knowledge may be lost.

The Project has finalised a spare parts and new O&M strategy to address the risks identified above, and we view these mitigants as positive for the operating and credit risk profiles (for more detail please see the Issuer Comment Proposed changes to Touwsrivier CPV project's security structure are positive published 13 April 2016). We understand these arrangements are now in effect following bondholder approval.

The technical advisor published a "Strategic Mitigation Study for the Replacement of all Soitec Know-How, Services and Components" in March 2015. This detailed report assessed all technical aspects of Soitec's contributions including equipment supply, software, warranties, and organisational considerations, and proposed recommendations for a mitigation plan. Using a detailed failure rate analysis of production-critical components, the TA's Strategic Mitigation Study estimated the lifetime spares necessary for the Project. For the Soitec-manufactured modules, the TA recommended 600 units be kept on site. Following this recommendation, Project stakeholders requested - and Soitec agreed - an increase in the spares to the equivalent of 10% installed capacity, or 4MW (excluding trackers) comprising 1,700 modules.

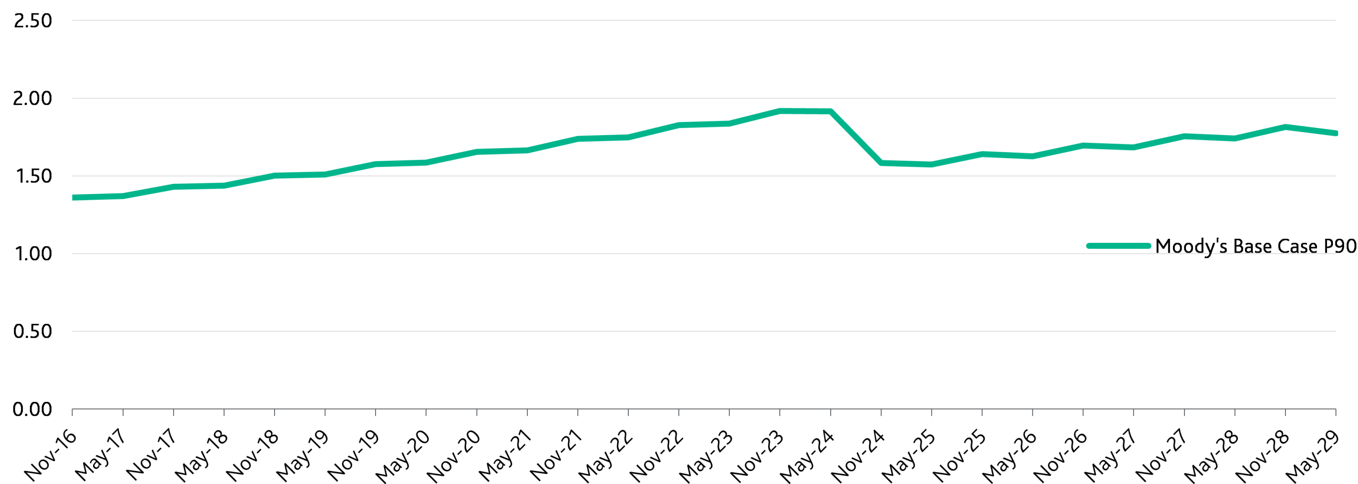
In relation to the O&M, certain identified failings in Group Five's performance - together with downtime during execution of remedial cable and transformer works - have contributed to production being below management expectations (though still broadly in line with Moody's base case).

The new O&M arrangements include the following terms: (1) Group Five will subcontract execution of the services to a new organisation, but remain liable to the Project for its obligations under the O&M agreement entered into with the Project, including for the 90% production ratio guarantee provided by it to the Project; and (2) the new organisation will, in turn, provide a 95% production ratio guarantee to Group Five under the subcontract. The new organisation will include staff from Soitec with knowledge of the technology and operational best practice, as well as existing Group Five technicians. Additionally, the Project, Group Five, and the subcontractor will enter into a direct agreement to regulate their respective rights. If an event occurs (a "Contractor Default") which would permit the subcontractor to terminate the O&M subcontract, the Project shall be entitled to make a payment on behalf of Group Five to the subcontractor and/or to take any action on behalf of Group Five required in order to cure or remedy any Contractor Default (for a period of 30 days).

Financial performance remains within our base case

Despite the transformer quality issues and O&M performance problems, the Project's cash flows available for debt service were broadly in line with our rating case in 2015. The historic debt service coverage ratio (DSCR) for the historic twelve month period on the December 2015 payment date was 1.34x. The forward looking 12 month DSCR at December 2015 under our base case is projected to be 1.51x on the basis of P90 production. We do not assume any additional downtime associated with the O&M handover discussed above. The observed dip in the DSCR profile is a result of an increased tax liability once the tax losses associated with depreciation of the asset are consumed.

Exhibit 3
Forecast debt service coverage ratios



Source: Moody's, Issuer financial model

Regulator regime and revenue model provide a stable cash profile for an operational site

Touwsrivier's output is contracted to Eskom through a PPA, under which Eskom committed to purchasing all electricity produced by the facility, subject to a cap at the maximum planned capacity of 36MWac, across the 20 year PPA life.

The contracted power price of ZAR 2,603.14 /MWh (and indexed annually for inflation) is significantly above South African electricity supply prices (there is no open wholesale market), reflecting the government's REIPP programme intention to attract renewable investment in the country.

Project revenues are therefore only subject to successful electricity generation - being a function of (1) the solar resource and (2) continued operation of the technology. The resource risk is addressed through an independent assessment of the site's annual solar irradiation, from which financial projections are based. We've considered the `P90' resource profile as our base case.

We note, however, that the REIPP remains at the early stage of its implementation and remains largely untested from an operational perspective. We take comfort from the explicit government support in the event that Eskom does not meet the PPA contractual terms and therefore do not consider counterparty risk to be a material exposure, at the current Project rating level.

CPV technology untested on this scale

The CPV technology used for the construction of the plant uses lenses to concentrate sunlight onto a small area of solar photovoltaic (PV) cells. The technology benefits from higher efficiency - above 40% for Soitec's three-junction technology used, relative to around 20% for conventional silicon PV technology. Furthermore, experience to date indicates lower module degradation levels relative to typical PV modules that could experience degradation of around 0.5% annually. Despite these factors, CPV technology has been subject to intense competitive pressure arising from rapid cost reductions in standard PV products. The high fixed costs involved in manufacturing CPV technology have meant it has struggled to keep up with standard PV where significant manufacturing economies of scale have been achieved.

CPV technology remains relatively new, and Soitec's own offering was only operational for around five years and on a relatively small scale before Touwsrivier (the largest previous Soitec installation being 1.4 MWp). Also, the CPV system requires direct solar irradiation to work effectively: (1) an automated tracking mechanism is required to maintain a square angle of incidence between the CPV panels and the solar source, and (2) performance can be impaired if there is cloud cover obscuring the solar source.

The technology risk is mitigated by the operating availability protection under the O&M contract, whereby Group Five is committed to 90% production ratio targets for the facility, incentivising it to ensure the necessary cleaning and preventative maintenance procedures are followed. Following the new O&M strategy discussed above, the new provider commits to a 95% production ratio guarantee under its subcontract with Group Five.

National scale rating application

Moody's National Scale Credit Ratings (NSRs) are intended as relative measures of creditworthiness among debt issues and issuers within a country, enabling market participants to better differentiate relative risks. NSRs differ from Moody's global scale credit ratings in that they are not globally comparable with the full universe of Moody's rated entities, but only with NSRs for other rated debt issues and issuers within the same country. NSRs are designated by a ".nn" country modifier signifying the relevant country, as in ".za" for South Africa. For further information on Moody's approach to national scale credit ratings, please refer to Moody's Credit rating Methodology published in May 2016 entitled "Mapping National Scale Ratings from Global Scale Ratings". While NSRs have no inherent absolute meaning in terms of default risk or expected loss, a historical probability of default consistent with a given NSR can be inferred from the GSR to which it maps back at that particular point in time.

National scale ratings are assigned by applying the published correspondence from global scale ratings. Where a single global scale rating maps to multiple global national scale ratings, rating committees assigned higher or lower national scale ratings to individual issuers and debts depending on their relative credit position within the same global scale rating category, using the same methodologies as were used to determine the GSRs themselves. The mapping profile for South Africa indicates that a Ba3 global scale rating maps to an NSR range of Baa2.za to Baa3.za. Moody's has assigned a Baa2.za rating to the Project.

Liquidity Analysis

At 31 December 2015, the Project's 12 month debt service reserve account and 6 month O&M reserve account were funded at their required contractual levels of ZAR143.8 million and ZAR9.4 million, respectively.

Structural Considerations

Bondholders benefit from typical project finance protections, including 12 month debt service reserve account, 6 month O&M reserve account, fully amortising debt, 1.20x historic and forward looking DSCR test for distributions, and restrictions on additional indebtedness and business activities.

Issuer Profile

The Issuer was formed to finance the Project, located in the Western Cape of South Africa. The Project was developed by Soitec Solar GmbH, a subsidiary of the Soitec S.A group (Soitec, unrated), under the South African government's Renewable Energy Independent Power Producer (REIPP) programme. Power output is contracted for 20 years through a PPA with Eskom Holdings SOC Limited, the state-owned incumbent energy supplier. The PPA is supported by the Department of Energy (DoE) of the government of South Africa in the event that Eskom does not meet the terms of the PPA. The Project's construction was completed by Group Five Construction (Pty) Ltd (Group Five), a privately owned contractor based in South Africa which also provides the operation & maintenance (O&M) for the Project. Commercial operations began in December 2014.

The 44MWp (translating to 36MWac at grid connection) of CPV modules being used on the site have been manufactured by Soitec at its automated production facilities in Freiburg, Germany and in San Diego, USA. Soitec's CPV technology was in its relative infancy at the time of Project construction, with the largest operating site being 1.4MWp based in Questa, New Mexico. Experience to date in controlled testing and operations indicate that CPV systems offer market-leading efficiencies, albeit at a higher face price than existing PV technology. In January 2015, Soitec announced a strategic refocus away from its solar activities, and has ceased manufacturing the technology.

The Project is owned by Soitec (20%); the Public Investment Corporation, which is the South African Government's employee pension fund (40% through a preferred share structure); Pele Green Energy (Pty) Ltd (35%); and the Touwsrivier Community Trust (5%).

Rating Methodology and Scorecard Factors

Application of the Power Generation Projects Methodology (published December 2012) indicates a Ba1 rating expressed on Moody's Global Rating Scale. Given the nature of the CPV technology, the challenges in realising the management plan to date, and ongoing attempts to re-design the O&M function in light of Soitec's planned exit and Group Five's performance, the Ba3 GSR is weaker than the grid indicated outcome under the methodology.

Exhibit 4

Power Generation Projects Methodology Scorecard

CPV Power Plant No. 1 Bond SPV (RF) Limited

Power Generation Projects Methodology	Measure	Score	
Factor 1: Predictability of cash flows			
a) Quality and diversity of cash flow stream		Baa	
b) Conditions for Contract Payments or Receipt of Revenues		Baa	
Factor 2: Competitiveness / Regulatory Support			
a) Competitiveness of Contract Payments to Market/ Regulatory Support		Ba	
Factor 3: Technical and Operating Risks / Vendor Profile			
a) Technology and Operating Track Record and Vendor Profile		B	
b) Operator, O&M Contractual Framework and Sponsor Strength		B	
Factor 4: Financial Performance			
a) Key financial metric	1.65x	Baa	
Notching Considerations			
1- Liquidity			-
2- Project Financing Structure			-
3- Refinancing Risk			-
4- Structural Subordination			-
5- Construction Risk			-
6- Termination Payment			-
Rating:			
Indicated Rating from Grid		Ba1	
Actual Rating Assigned		Ba3	

Source: Moody's

Ratings

Exhibit 5

Category	Moody's Rating
CPV POWER PLANT NO.1 BOND SPV (RF) LIMITED	
Outlook	Stable
Senior Unsecured -Dom Curr	Ba3
NSR Senior Unsecured	Baa2.za

Source: Moody's Investors Service

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