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

Annual update

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 Rating Under Review - Possible Downgrade), the incumbent energy utility in South Africa; (2) backstop support from the Government of South Africa (Baa2 Rating Under Review - Possible Downgrade) in the event Eskom fails to honour its obligations under the PPA; (3) healthy solar resource and financial performance in the first two years 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) the short track record of improved performance under the new O&M subcontracting strategy, which follows a period of construction defects and poor performance; (3) a relatively short ground-based history of local solar resource data; and (4) the infancy of South Africa’s programme to push development of domestic renewable energy.

Exhibit 1
Project Overview

<table>
<thead>
<tr>
<th>Description</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project description</td>
<td>44MWp (36MWac) concentrating photovoltaic solar power project</td>
</tr>
<tr>
<td>Location</td>
<td>Western Cape, South Africa</td>
</tr>
<tr>
<td>Issuer</td>
<td>CPV Power Plant No.1 Bond SPV (RF) Limited</td>
</tr>
<tr>
<td>Off-taker</td>
<td>Eskom Holdings SOC Limited</td>
</tr>
<tr>
<td>Regulatory regime</td>
<td>South Africa’s Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) provides a feed-in tariff under a power purchase agreement with Eskom, whose obligations are backed by the Government</td>
</tr>
<tr>
<td>Commercial operations date (COD)</td>
<td>Dec-14</td>
</tr>
<tr>
<td>PPA expiry</td>
<td>Dec-34</td>
</tr>
<tr>
<td>Sponsors</td>
<td>Soitec GmbH (20%); the Public Investment Corporation (40% through a preferred share structure); Pela Green Energy (Pty) Ltd (35%); Touwsrivier Community Trust (5%)</td>
</tr>
<tr>
<td>Construction contractors</td>
<td>Group Five Construction (Pty) Ltd</td>
</tr>
<tr>
<td>Equipment manufacture</td>
<td>Soitec Solar GmbH</td>
</tr>
<tr>
<td>Operations &amp; Maintenance</td>
<td>Group Five Construction (Pty) Ltd (who subcontract the O&amp;M)</td>
</tr>
<tr>
<td>Senior debt</td>
<td>ZAR1 billion</td>
</tr>
<tr>
<td>Debt maturity</td>
<td>2029</td>
</tr>
<tr>
<td>Projected DSCR metrics (1)</td>
<td>1.68x minimum (Dec-17); 1.75x average over 2017-2019; 1.90x average until maturity</td>
</tr>
<tr>
<td>Financial covenants</td>
<td>Lockup 1.25x; Default 1.1x</td>
</tr>
</tbody>
</table>

(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

» Relatively short period of improved operations under the new O&M subcontracting arrangements, following the initial period of O&M contractor performance below expectations

Rating Outlook

The Issuer, which owns the Touwsrivier concentrated photovoltaic (CPV) plant (the Project), has a stable outlook on its global scale rating 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, and do not pose a material risk to cash flows; (2) our expectation that the O&M function under the new subcontractor will continue to go smoothly, and maintain early signs of improvement seen to date; and (3) the PPA and the ultimate support this receives from the government of South Africa. The Project structure, as with all REIPPPP programme 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 longer track record of success under the new O&M subcontracting arrangements

» 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 sustained 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

» Our assessment of the Government’s ongoing support for upholding the tariffs promised to existing renewable energy assets were to deteriorate

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

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2015</th>
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<tbody>
<tr>
<td>Annual DS CR</td>
<td>1.47x</td>
<td>1.34x</td>
</tr>
<tr>
<td>Production ratio (%)</td>
<td>99%</td>
<td>92%</td>
</tr>
<tr>
<td>Production (MWh)</td>
<td>74,364</td>
<td>69,204</td>
</tr>
<tr>
<td>Debt service (ZAR m)</td>
<td>139.5</td>
<td>139.5</td>
</tr>
</tbody>
</table>

Source: The Issuer

Detailed Rating Considerations

Recent developments
Electricity production and Project cash flows available for debt service improved in 2016 vs. 2015, due to (1) higher solar resource in the year and (2) improvements in the O&M and resolution of outstanding construction defects which had reduced availability of the plant in 2015. Actual plant production in 2016 was 74,364 megawatt hours (MWh) (2015: 69,204 MWh) or 1.5% higher than Moody's 1-year P90 base case forecast of 73,229 MWh.

The new O&M structure, under which Group Five subcontracts its obligations to a local operator called reSA Infrastructure Advisory, was up and running in the middle of 2016. The early indications suggest improved performance, evidenced by higher levels of plant availability in 2016 relative to 2015.

Regarding the remedial and outstanding works agreed between the Project and its contractor, Group Five, to address snagging construction items and faults with transformers and cabling, we note the cabling work and replacement of all 30 transformers - the items with potentially highest impact on production - were completed over the course of 2015. As of April 2017, minor works still remain, however we do not anticipate they will materially impact operations over the next 12 months.

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).

Improved operating performance and higher solar resource drove higher production in 2016 vs. 2015
From 1 January to 31 December 2016, the Project produced around 74,364 MWh (2015: 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 2,503 kWh/m² (2015: 2,430 kWh/m²) compared to a 1-year P90 forecast of 2,335 kWh/m². The 7.5% production increase in 2016 compared to 2015 is attributable to the higher solar resource but also operating improvements in 2016. In 2015, one-off downtime events during execution of the remedial cable and transformer works, O&M underperformance, and a period of flooding, reduced plant availability. This is consistent with our expectation for operating improvement in 2016 noted in our Credit Opinion of 26 May 2016.

The exhibit below shows the production ratio – a measure of plant performance – improved over the course of the 2016 compared to 2015, and remained above the Group Five production ratio guarantee of 90% (below which Group Five, as O&M contractor, would be liable for penalties), and above the Group Five subcontractor’s guarantee of 95%.
Main construction snagging items resolved - a credit positive; minor works dragging on but unlikely to materially impact production

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.

As at April 2017, minor works under the R&O Agreement still remain. These include (1) certain minor 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 another exemption from Eskom until August 2017.

We understand Group Five and the Project Company do not agree on the liability of Group Five with respect to these works, and anticipate the parties will attempt to reach a commercial settlement. We do not expect the outstanding items to materially impact the Project’s operations over the next year, given their nature and the potential solutions.

As noted in our Credit Opinion update published 26 May 2016, all DC cabling work was complete as of May 2015 and all transformers were replaced by late November 2015, which we view as positive for the operating and credit risk profiles. Prior to the completion of these remedial works, 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).

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 implemented a spare parts and new O&M strategy (having received bondholder approval) 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 note the Project has a spare parts package with the equivalent of 10% installed capacity, or 4MW (excluding trackers) comprising 1,700 modules. This is in excess of the technical advisor’s recommendation for 600 units on site, using a detailed failure rate analysis.

**New O&M subcontracting arrangements show early signs of improvement**

In relation to the O&M, certain identified failings in Group Five’s performance as O&M Contractor - together with downtime during execution of remedial cable and transformer works - contributed to production being below management expectations in 2015 and early 2016 (though still broadly in line with Moody’s base case). The new O&M strategy, as noted above, has shown early signs of performance improvement with higher and more consistent production ratios and levels of availability.

The new O&M arrangements include the following terms: (1) Group Five now subcontracts execution of the services to reSA Infrastructure Advisor, but remains 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) reSA, in turn, provides a 95% production ratio guarantee to Group Five under the subcontract. The new organisation includes staff from Soitec with knowledge of the technology and operational best practice, as well as existing Group Five technicians. The Project, Group Five, and the subcontractor have entered 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**

The Project’s cash flows available for debt service were broadly in line with our rating case in 2016, and improved relative to 2015. The historic debt service coverage ratio (DSCR) for the 12-month period on the December 2016 payment date was 1.47x (2015: 1.34x). The forward-looking 12 month DSCR at December 2016 under our base case is projected to be 1.68x on the basis of P90 production.

The observable dip in the DSCR profile above is a result of an increased tax liability once the tax losses associated with depreciation of the asset are consumed. Relative to our expectations at financial close, we note operating costs are currently forecast to be modestly higher (c. 2%) than our initial assumptions mainly as a result of the new O&M arrangements in place. However, on balance our forecast financial metrics are somewhat higher than at the initial rating assignment (please see the Pre-Sale Report, 21 December 2012), owing to the positive effects of a marginally higher than anticipated tariff inflation adjustment to date, and the reduced debt service payments owing to the fact that total senior debt raised, at ZAR1 billion, was lower than the initial target of ZAR1.2 billion.
Regulatory 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 ZAR2,603.14/MWh and indexed annually for inflation (at end 2016, the nominal tariff was approximately ZAR3,408/MWh) is significantly above South African electricity supply prices (there is no open wholesale market), reflecting the government’s REIPPPP 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.

Although the REIPPPP is in the early stages of its implementation and remains largely untested through economic cycles compared to the more established regimes in Germany or the UK for example, we note positively that the cost of renewable electricity in South Africa, especially solar PV, has reduced significantly. Driven by reductions in equipment and installation costs, and the country's abundant natural resources, renewable energy projects are becoming less dependent on high levels of subsidy. This is a credit positive for non-recourse project finance issuers, as we note in South African renewables are less dependent on subsidy, a positive for project finance issuers (published 16 September 2016).

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 2016, the Project’s 12 month debt service reserve account and 6 month O&M reserve account met their required contractual levels of ZAR139.5 million and ZAR9.0 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 Procurement (REIPPP) 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 GmbH (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 May 2017) indicates a Ba1 rating expressed on Moody’s Global Rating Scale. Given the nature of the CPV technology relative to more established photovoltaics, the challenges in realising the management plan to date, and the relatively short track record of improved operating performance under new O&M sub-contracting arrangements, the assigned Ba3 GSR is weaker than the grid indicated outcome under the methodology.
Exhibit 5
Power Generation Projects Methodology Scorecard
CPV Power Plant No. 1 Bond SPV (RF) Limited

<table>
<thead>
<tr>
<th>Power Generation Projects Methodology</th>
<th>Measure</th>
<th>Score</th>
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</thead>
<tbody>
<tr>
<td>Factor 1: Predictability of cash flows</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Quality and diversity of cash flow stream</td>
<td></td>
<td>Baa</td>
</tr>
<tr>
<td>b) Conditions for Contract Payments or Receipt of Revenues</td>
<td></td>
<td>Baa</td>
</tr>
<tr>
<td>Factor 2: Competitiveness / Regulatory Support</td>
<td></td>
<td>Baa</td>
</tr>
<tr>
<td>a) Competitiveness of Contract Payments to Market / Regulatory Support</td>
<td></td>
<td>Baa</td>
</tr>
<tr>
<td>Factor 3: Technical and Operating Risks / Vendor Profile</td>
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</tr>
<tr>
<td>a) Technology and Operating Track Record and Vendor Profile</td>
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<td>B</td>
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<tr>
<td>b) Operator, O&amp;M Contractual Framework and Sponsor Strength</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Factor 4: Financial Performance</td>
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<tr>
<td>a) Key financial metric</td>
<td>1.75x (1)</td>
<td>Baa</td>
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</table>

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

(1) Average DSCR over the 3 years to December 2019 under Moody's base case assumptions.
Source: Moody's

Ratings

Exhibit 6

<table>
<thead>
<tr>
<th>Category</th>
<th>Moody’s Rating</th>
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<tbody>
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<td>CPV POWER PLANT NO.1 BOND SPV (RF) LIMITED</td>
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</tr>
<tr>
<td>Outlook</td>
<td>Stable</td>
</tr>
<tr>
<td>Senior Unsecured - Dom Curr</td>
<td>Baa</td>
</tr>
<tr>
<td>NSR Senior Unsecured</td>
<td>Baa2.2a</td>
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Source: Moody’s Investors Service
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