



# DRAFT AMENDMENT ASSESSMENT REPORT

for

## AMENDMENT OF THE ENVIRONMENTAL AUTHORISATION FOR DYASONSKLIP SOLAR ENERGY FACILITY 1 TO INCLUDE BATTERY ENERGY STORAGE SYSTEM

on the Remainder of the farm Dyason's Klip 454, Upington,  
Northern Cape

In terms of the

National Environmental Management Act (Act No. 107 of 1998, as  
amended) & 2014 Environmental Impact Regulations

Prepared for Applicant: Dyasonsklip Solar Energy Facility 1 (Pty)  
Ltd.

Date: 03 July 2021

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**PURPOSE OF THIS REPORT:**

I&AP Review and Comment.

**APPLICANT:**

Dyasonsklip Solar Energy Facility 1 (Pty) Ltd

**CAPE EAPRAC REFERENCE NO:**

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14/12/16/3/3/1/2042

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03 July 2021

# Draft Amendment Assessment Report

in terms of the

National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended) & Environmental Impact Regulations 2014 (as amended)

## Dyasonsklip Solar Energy Facility 1

**Remainder of the farm Dyason's Klip 454, Upington, Northern Cape.**

Submitted for:

Stakeholder Review & Comment

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## REPORT DETAILS

<b>Title:</b>	Draft Amendment Assessment Report for Dyasonsklip Solar Energy Facility 1.
<b>Purpose of this report:</b>	<p>The purpose of this amendment assessment report is to provide details on the proposed amendments to the EA and to assess the impacts associated with these amendments on the receiving environment.</p> <p><u>The Draft Amendment Assessment Report is available to all registered and potential interested and affected parties for a 30 day review and comment period</u></p> <p>All comments received during this comment period will be incorporated into a Final Amendment Assessment report that will be submitted to the DEFF for decision making.</p>
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## DEFF COMMENT ON AMENDMENT ASSESSMENT REPORT

This section will be updated upon receipt of comment from the competent authority.

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# DRAFT AMENDMENT ASSESMENT REPORT

## 1 INTRODUCTION

*Cape EAPrac* has been appointed by Dyasonsklip Solar Energy Facility 1 (Pty) Ltd, hereafter referred to as the Applicant, as the independent Environmental Assessment Practitioner (EAP), to facilitate an application for an amendment of the project's Environmental Authorisation (EA) and Environmental Management Programme (EMPr), in terms of the National Environmental Management Act (NEMA, Act 107 of 1998), for the authorised 'Dyasonsklip Solar Energy Facility 1' solar photovoltaic (PV) facility near Upington and Keimoes in the Northern Cape Province of South Africa.

The total authorised generation capacity of Dyasonsklip Solar Energy Facility 1 is up to 100 Megawatts (MW). The applicant intends amending the EA and EMPr to provide for a Battery Energy Storage System (BESS) within the authorised footprint of the facility.

The purpose of this **Amendment Assessment Report** is to describe the environment that will be affected by the proposed BESS and to identify and assess any resulting impacts that may result from the addition of a BESS.

The Draft Amendment Assessment Report along with all the the supplementary appendices will be made available to all registered and potential Interested and Affected Parties (I&AP's) for a 30 day comment period.

All comments received on the Draft Amendment Assessment Report will be considered, addressed and incorporated into a Final Amendment Assessment Report to be submitted to the DEFF for consideration and decision making.

### 1.1 PROPOSED AMENDMENTS

The applicant wishes to amend the EA to include a BESS<sup>1</sup> within the authorised footprint of the Facility. In order to affect this proposal, the following amendments to the Environmental Authorisation will be required.

**Table 1:** Proposed amendments to the Environmental Authorisation for Dyasonsklip Solar Energy Facility 1.

Amendment 1
Page 6 of the EA lists the infrastructure associated with the PV Development as follows:

<sup>1</sup> Other than the amendment to include the BESS, the applicant is including application to correct typographical errors in the spelling of the affected farm portion.

The proposed PV facility would consist of the following:

- Mounting systems for the PV arrays and related foundations;
- Internal cabling and string boxes;
- Inverter stations;
- An on-site substation (including a feed-in transformer to allow the generated power to be connected to Eskom's electricity grid);
- An overhead transmission power line to distribute the generated electricity from the on-site substation to the newly approved Eskom Upington MTS Substation (this is assessed in a separate basic assessment report).
- Administration / office and security (gate house);
- Control room & workshop;
- Visitor centre;
- Ablution / change room and warehouse / storeroom;
- A laydown area of approximately 3ha;

This should be amended by the addition of the following:

- A Battery Energy Storage System with a footprint of up to 4 Hectares.

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#### **Amendment 2**

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Page 7 of the EA lists the Technical Details of the project as follows

Component	Description/ Dimensions
Location of the site	Remainder of the Farm Dyasonsklip 454, is located in the ZF Mgcawu district of the Northern Cape Province, within the jurisdiction area of the Kai Garib Local Municipality. The property is located approximately 22km west southwest of Upington and 15km northeast of Keimoes.
PV Panel area	180 ha (total development footprint not exceeding 240 ha)
SG Codes	C02800000000045400000
Site access	The site will be accessed by one of two existing road entrances from the N14 North; via the farm's existing entrance or the existing entrance of the adjacent property (Abengoa Khi Solar One CSP Project).
Export capacity	75 MW
Proposed technology	Photovoltaic panels (including conventional photovoltaic and concentrated photovoltaic.)
Height of installed panels from ground level	<10m
Width and length of internal roads	Main internal road - width: 6m, approximate length:25 km

This table should be amended by the addition of:

Capacity of Battery Energy Storage System	Up to 400 Megawatt Hours
Footprint of Battery Energy Storage System	Up to 4 Hectares

### Amendment 3

Condition 1 on page 8 of the EA states (note: the 75MW generation capacity in this condition was amended to 100MW as part of the 20 March 2020 Approval):

- The construction of the Dyasonsklip 75MW Solar Energy Facility 1 on the Remainder of the Farm Dyasonsklip 454 near Upington within the Kai! Garib Hills Local Municipality in the Northern Province is approved as per the above geographic coordinates.

This should be amended to:

- The construction of the Dyasonsklip 100MW Solar Energy Facility 1 on the Remainder of the Farm Dyason's Klip 454 near Upington within the Kai! Garib Local Municipality in the Northern Cape province as approved as per the above geographic coordinates.

**Amendment 4**

The cover page of the EA reflects the affected property as follows:

<b>Location of activity:</b>	<i>Remainder of the Farm 454 Dyasonsklip Kai! Garib Local Municipality ZF Mgcawu District Municipality Northern Cape Province</i>
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This should be amended to:

Location of the activity:	Remainder of the Farm 454 Dyason's Klip Kai !Garib Local Municipality ZF Mgcawu District Municipality Northern Cape Province
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**Amendment 5**

The table on page 6 of the EA details the affected property as:

Location of the site	Remainder of the Farm Dyasonsklip 454, is located in the ZF Mgcawu district of the Northern Cape Province, within the jurisdiction area of the Kai Garib Local Municipality. The property is located approximately 22km west southwest of Upington and 15km northeast of Keimoes.
----------------------	---

This Description of the property should be amended to:

Remainder of the Farm Dyason's Klip 454, is located in the ZF Mgcawu district of the Northern Cape Province, within the jurisdiction of the Kai !Garib Local Municipality. The property is located approximately 22km southwest of Upington and 15km northeast of Keimoes.

**Amendment 6**

The description of the Authorised Area on page 6 of the EA states (note, the generation capacity reflected here was amended to 100MW through the amendment authorised on 20 March 2020:

- for the proposed 75MW Dyasonsklip Solar Energy Facility 1 and its associated infrastructure located on the Remainder of the Farm Dyasonsklip 454, Gordonia RD within the Kai Garib Local Municipality in the Northern Cape Province, hereafter referred to as "the property"

This should be amended to:

- for the proposed 100MW Dyasonsklip Solar Energy Facility 1 and its associated infrastructure on Remainder of the Farm 454 Dyason's Klip, near Upington and Keimoes, Northern Cape Province, hereafter referred to as "the property"

## 1.2 REASONS FOR PROPOSED AMENDMENTS

The section below details the reasons why the applicant wishes to amend the environmental authorisation and environmental management programme.

### 1.2.1 Amendment 1, 2 and 3 - Battery Energy Storage System (BESS)

South Africa has recognised the need to expand electricity generation capacity within the country and to improve reliability and resilience of electrical supply. This is based on national policy and informed by ongoing planning undertaken by the Department of Energy (DoE) and the National Energy Regulator of South Africa (NERSA).

The Integrated Resource Plan (IRP 2019) sets the direction for the energy sector, with a shift away from coal, increased adoption of renewables and gas, and an end to the expansion of nuclear power. One of the main challenges faced by Eskom is managing and balancing electricity demand supply. While renewable resources can now achieve lower costs than fossil fuels, photovoltaic (PV) arrays and wind turbines both have variable electricity production, since they rely on energy inputs that cannot be controlled, particularly at peak consumption periods.

Cost reductions of energy storage technologies and the wider deployment of battery, particularly lithium-ion installations globally, have stimulated interest in combining renewable energy generation with energy storage to provide dispatchable energy (energy on demand) and reliable capacity.

### 1.2.2 Amendment 4, 5, 6 – Corrections to Farm name.

Amendments 4, 5 and 6 are purely to correct the spelling of the farm name to align with the spelling in the Title Deed.

## 1.3 SPECIALIST INPUT

This Amendment assessment report includes input from the following specialists.

- Terrestrial Ecology – Mr Simon Todd
- Botany – Mr Simon Todd
- Agricultural – Mr Christo Lubbe
- Palaeontology – Dr John Almond
- Archaeology – Dr Lita Webley
- Visual – Mr Stephen Stead

These specialists provided a statement on the likely impacts associated with the construction and operation of a BESS that covers a maximum footprint of 4ha.

## 1.4 RECOMMENDATION OF THIS ASSESSMENT REPORT

Based on the outcomes of this assessment (which includes input from the participating specialists), as well as the outcome of the risk assessment, it is Cape EAPrac's reasoned opinion that the application for amendment of the Environmental Authorisation be granted, subject to the following conditions:

1. That the BESS Addendum to the EMPr be adopted and implemented for the life cycle of the project;
2. That the additional mitigation measures detailed in section 7 of this assessment report be adopted and implemented; and

3. That the additional mitigation measures identified in the Risk Assessment attached in Appendix G be implemented.

## 2. OVERVIEW OF THE PROPOSED ACTIVITY AFFECTED BY THE AMENDMENT.

As noted above, the amendment relates to the inclusion of a BESS within the authorised footprint. A BESS technical document is included in Appendix E7, from which the following overview of the project is summarised.

### 2.1 TECHNOLOGY

Unlike conventional energy storage facilities, such as pumped hydro, a BESS has the advantage of being flexible in terms of site location and sizing. Therefore, they can be incorporated into, and placed in close proximity, to a wind or solar facility. They also have the advantage of being easily scaled and designed to meet specific demands.

Different BESS technologies, such as lithium-ion (Li-ion), zinc hybrid cathode, sodium ion, flow (e.g. zinc iron or zinc bromine), sodium sulphur (NaS), zinc air and lead acid batteries, can be used for grid applications. Compared to other battery options, Li-ion batteries are highly efficient, have a high energy density and are lightweight. As a result of the declining costs, Li-ion technology now accounts for more than 90% of battery storage additions globally (IRENA, 2019).

Therefore, in line with the above, it is proposed that Lithium Battery Technologies, such as Lithium Iron Phosphate (LFP) or Lithium Nickel Manganese Cobalt oxides (NCM), be considered as the preferred technology in this amendment process.



**Figure 1:** Tesla's Megapack Li-ion Battery (Modular System).

### 2.2 LOCATION AND SIZE OF THE BATTERY STORAGE AREA

The battery storage facility will be constructed within the authorised footprint, adjacent to the on-site substation and will cover an area of up to 4 ha, as per the figure below (please also refer to the full scale layout plans attached in Appendix D).



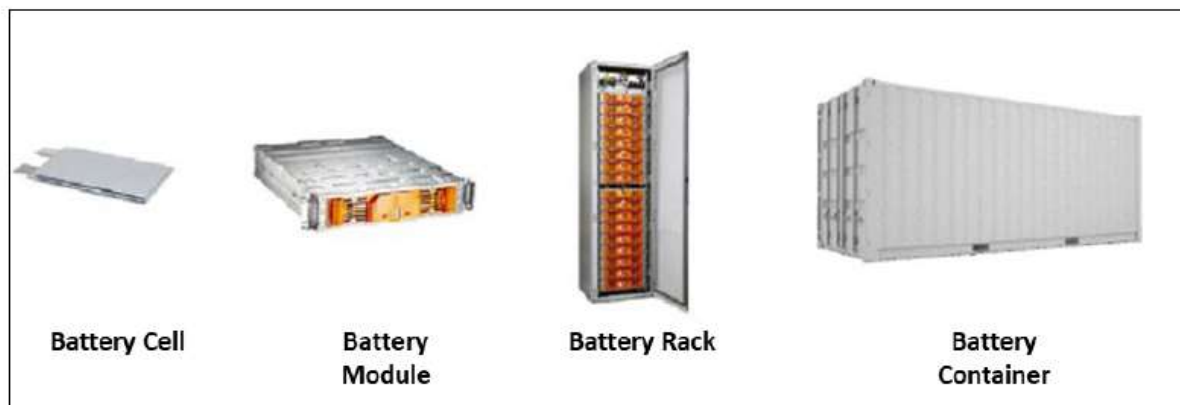
**Figure 2:** Site Layout plan, showing the proposed position of the BESS (pink polygon) within the authorised footprint.

### 2.3 GENERAL COMPONENTS

The exact design will depend on the manufacturer, however traditional utility-scale Li-ion battery storage facilities include the following main components:

1. Battery cells → modules → packs → racking system (DC).
2. Storage container (HVAC system, thermal management, monitors and controls, fire suppression, switchgear, and energy management system).
3. Power conversion system (bidirectional inverter to convert AC to DC for battery charging and DC to AC for discharging).
4. Transformer (to step up 480-V inverter output to 12–66 kV).

The figures below illustrates the components that generally make up the primary battery system,



**Figure 3:** Typical Battery System Components.



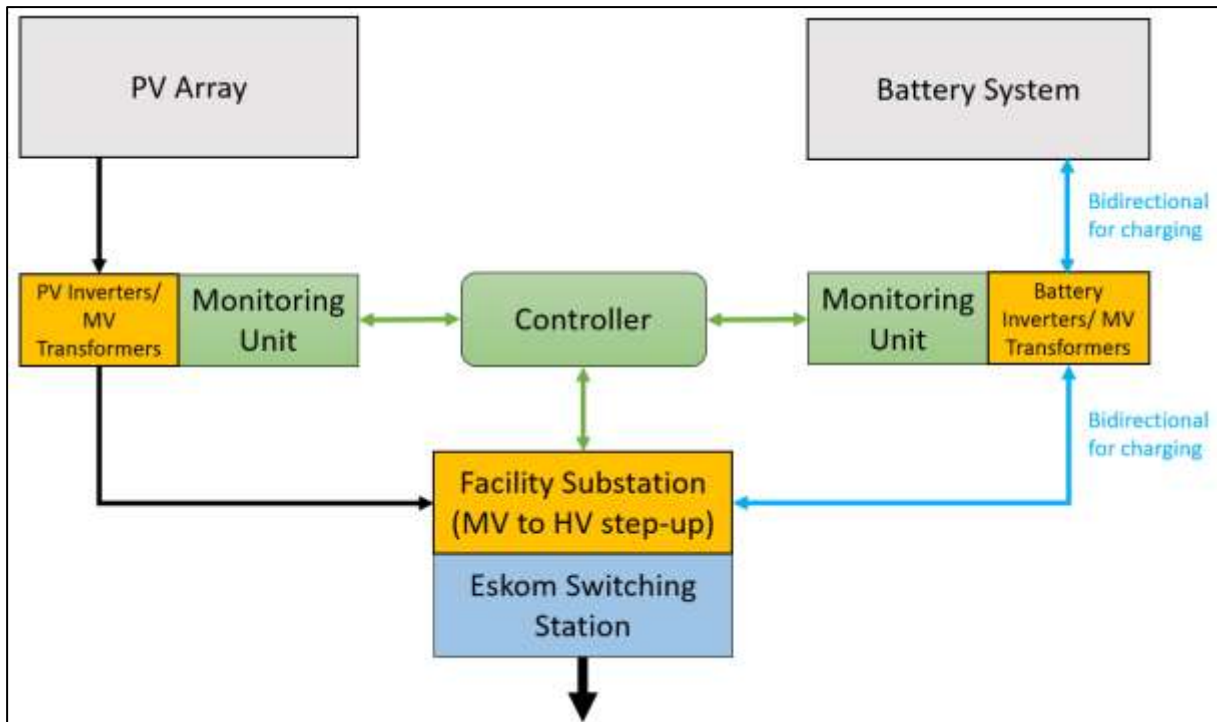


Figure 4: Typical flow diagram of PV plant with battery storage

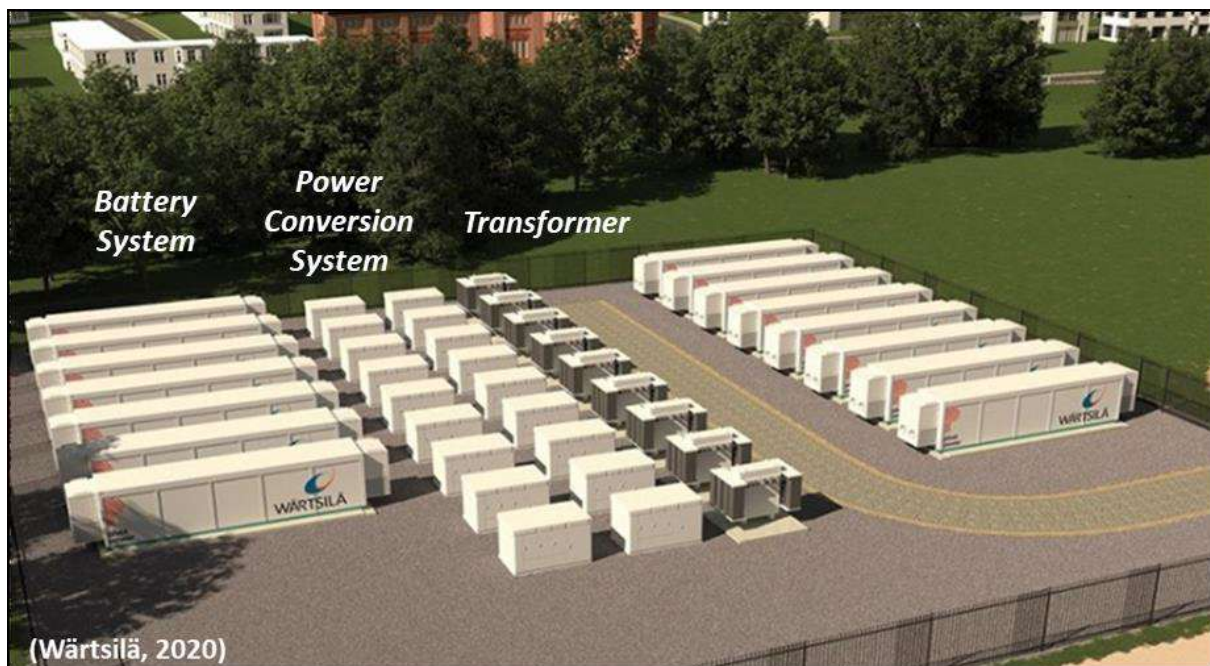


Figure 5: Example of a typical Battery Energy Storage System - Pivot Power's proposed lithium-ion battery in Kemsley, Kent.

### 3. PROJECT NEED AND DESIRABILITY

South Africa has recognised the need to expand electricity generation capacity within the country. This is based on national policy and informed by ongoing planning undertaken by the Department of Energy (DoE) and the National Energy Regulator of South Africa (NERSA).



In recent years, recurring large-scale power cuts (i.e. load shedding) have highlighted the need to improve reliability and resilience of electricity supply.

One of the main challenges faced by Eskom is managing and balancing electricity demand and supply. While renewable sources can now achieve lower costs than fossil fuels, photovoltaic (PV) arrays and wind turbines both have variable electricity production, since they rely on energy inputs that cannot be controlled (i.e. sunshine and wind). For this reason, fossil fuels currently still have a key role in the energy sector as they can provide electricity on demand and when consumption reaches its peak.

However, cost reductions of energy storage technologies and the wider deployment of battery (particularly lithium-ion) installations globally, now provides an opportunity to combine renewable energy generation with energy storage to provide dispatchable energy (i.e. energy on demand) and reliable capacity.

The need and desirability of the originally authorised portions of the project does not differ from what was originally assessed and authorised.

### 3.1 SITE SELECTION PROCESS

The site and footprint selection process was considered in detail during the Basic Assessment Process. The site and footprint position have been authorised and therefore the scope of the amendments are restricted to utilise the same spatial scale as the authorised project.

### 3.2 PROJECT PROGRAMME AND TIMELINES

The intention of the applicant is to bid the amended project under the Risk Mitigation Independent Power Producer Procurement Programme (RMIPPPP) or otherwise the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP).

**Table 2:** Preliminary implementation schedule.

	Description	Timeline
1	RFP Release	24 August 2020
2	BID Submission	24 November 2020
3	Preferred Bidder Announcement	15 December 2020
4	Financial Close	30 April 2021
5	Construction	May 2021 – June 2022
6	Commissioning	June 2022

The table above clearly depicts the dependence of the project on the RMIPPPP's timelines. Any delay or acceleration within the RMIPPPP will have a corresponding effect on the timelines of the projects.

## 4. LEGISLATIVE AND POLICY FRAMEWORK

The applicable legislation remains the same as what was considered in the Final Environmental Impact Assessment report for Dyasonsklip Solar Energy Facility 1 and as such, it is not re-described in this amendment assessment report.

The table below lists the applicable legislation and describes whether any additional considerations are applicable to the amendment (i.e. that were not considered in the final EIR).

**Table 3:** Legislation applicable to Dyasonsklip Solar Energy Facility 1 including any additional considerations applicable to the amendment of the EA to include the BESS.

Legislation	Additional considerations for Dyasonsklip Solar Energy Facility 1
<b>NATIONAL LEGISLATION</b>	
The Constitution of the Republic of South Africa	No additional considerations applicable to the amendment

<b>Legislation</b>	<b>Additional considerations for Dyasonsklip Solar Energy Facility 1</b>
National Environmental Management Act (NEMA)	This application is being undertaken in terms of this legislation. No additional activities listed in terms of this legislation are applicable to the Amendment.
National Environmental Management: Biodiversity (Act 10 of 2004)	The proposed positioning of the BESS within the authorised footprint remains on vegetation type classified as least threatened in terms of this legislation. No additional impact or permitting requirements (TOPS permits) are applicable to this amendment.
Conservation of Agricultural Resources Act – CARA (Act 43 of 1983):	No additional considerations applicable to the amendment.
The Subdivision of Agricultural Land, Act 70 Of 1970	No additional considerations applicable to the amendment
National Water Act, No 36 of 1998	No additional considerations applicable to the amendment
National Forests Act (No. 84 of 1998):	No additional considerations applicable to the amendment
National Heritage Resources Act, 25 of 1998	SAHRA have approved the development footprint in terms of Section 38 of the National Heritage Resources Act. This authorised footprint remains unchanged and it is thus unlikely that further approval in terms of the NHRA will be applicable.. SAHRA will however be given an opportunity to comment on this amendment assessment report.
National Energy Act (No. 34 of 2008)	No additional considerations applicable to the amendment.
<b>PROVINCIAL LEGISLATION</b>	
Northern Cape Nature Conservation Act, No. 9 of 2009	No additional considerations applicable to the amendment
Nature and Environmental Conservation Ordinance, No 19 of 1974	No additional considerations applicable to the amendment
Astronomy Geographic Advantage Act, 2007 (Act No 21 Of 2007)	No additional considerations applicable to the amendment. SKA SA provided comment on the facility confirming a low risk to SKAsa. It is likely that this low risk will remain for the amendment. SKAsa will however be given an opportunity to comment on this amendment assessment report.
Northern Cape Provincial Spatial Development Framework (PSDF) 2012	No additional considerations applicable to the amendment
<b>GUIDELINES, POLICIES AND AUTHORITATIVE REPORTS</b>	
National Protected Area Expansion Strategy (NPAES) for S.A. 2008 (2010)	No additional considerations applicable to the amendment. The project footprint remains unchanged and thus outside of any protected area expansion focus areas.
Critical Biodiversity Areas	No additional considerations applicable to this amendment. The project footprint remains unchanged and thus still outside of any critical biodiversity areas.
White Paper on the Renewable Energy Policy of the Republic of South Africa (2003)	No additional considerations applicable to the amendment
White Paper on the Energy Policy of the Republic of South Africa (1998)	No additional considerations applicable to the amendment
Integrated Energy Plan (IEP), 2015	No additional considerations applicable to the amendment.
Integrated Resource Plan for Electricity (2010-2030)	No additional considerations applicable to the amendment
National Development Plan 2030 (2012)	No additional considerations applicable to the amendment.
Strategic Infrastructure Projects (SIPs)	No additional considerations applicable to the amendment.
Environmental Impact Assessment Guideline for Renewable Energy Projects	No additional considerations applicable to the amendment.
Sustainability Imperative	No additional considerations applicable to the amendment.

## 5. SITE DESCRIPTION AND ATTRIBUTES

As the proposed BESS falls entirely within the previously assessed and authorised footprint, the site description and attributes associated with this amendment remain unchanged from what was presented in the original environmental assessment.

## 6. ASSESSMENT OF IMPACTS ASSOCIATED WITH THE PROPOSED AMENDMENTS

As agreed to with the competent authority during the pre application meeting, this amendment assessment is supplemented with statements from the following specialists:

- Terrestrial Ecology (Todd, 2020)
- Botany (Todd, 2020)
- Agricultural (Lubbe, 2020)
- Palaeontology (Almond, 2020)
- Archaeology (Webley, 2020)
- Visual (Stead, 2020)

The findings of each of these specialists relating to the potential impacts of the BESS are summarised in the following sections. Please also refer to the full statements attached in Appendix E1 – E6

### 6.1 TERRESTRIAL FAUNA IMPACTS

An Ecological Statement was undertaken by Simon Todd. A copy of this assessment is attached in **Annexure E1**. The ecological specialist concluded the following with regards to the envisioned impact of the proposed addition of the BESS.

#### **Change in Impact Due to the Proposed Inclusion of the BESS**

The location of the BESS is within the previously assessed footprint area of the project. The BESS is located adjacent to the facility substation and is within a medium - low sensitivity area with no features of concern in close proximity to the BESS. In the original ecological assessment, it was assumed that the habitat within the facility would be largely lost in its entirety to the development. As such, the addition of the BESS within the assessed footprint would not increase direct habitat loss. In terms of additional risks, there do not appear to be any significant additional risks to ecology associated with the BESS. The original impacts associated with the Dyasonsklip Solar Energy Facility 1 are illustrated in the Table below. Based on the footprint and technical specifications of the BESS as provided for this statement, there are no changes to the assessed impacts that are warranted based on the inclusion of the BESS into the Dyasonsklip Solar Energy Facility 1.

**Table 2.** The pre- and post-mitigation ecological impacts associated with the Dyasonsklip Solar Energy Facility 1 as originally assessed which remain applicable.

Nature of impact	Significance and Status	
	Without Mitigation	With Mitigation
Impacts on vegetation and listed or protected plant species resulting from construction activities	Medium-High Negative	Medium Negative
Direct Faunal Impacts During Construction	Medium Negative	Medium-Low Negative
Avifaunal impacts due to habitat loss and construction activities	Medium-High Negative	Medium-Low Negative
Soil Erosion Risk During Construction	Medium Negative	Low Negative

Nature of impact	Significance and Status	
	Without Mitigation	With Mitigation
Alien Plant Invasion Risk During Operation	Medium Negative	Low Negative
Soil Erosion Risk During Operation	Medium Negative	Low Negative
Faunal impacts during operation:	Medium-Negative	Low-Negative
Reduced ability to meet conservation obligations & targets due to cumulative habitat loss	Low Negative	Low Negative
Impact on broad-scale ecological processes due to cumulative loss and fragmentation of habitat	Medium Negative	Low Negative

### **Potential for Novel Impacts Associated with the BESS**

The BESS consists of battery storage units in containerised solutions and would not change the nature of impacts associated with the solar facility. However, the BESS would include cooling systems which presumably would include fans that would generate some noise above that which would have occurred at the substation alone. As such, the BESS may increase noise associated with the facility to a small degree. However, since this is likely to be of a low intensity, this is not seen as adding significant impact to the existing development. Overall, there are no additional or novel impacts associated with the BESS that were not already assessed for the existing solar facility.

### **Additional Mitigation Measures**

No additional mitigation measures or changes to the EMPr mitigation measures would be required in terms of this amendment, as no significant change to impacts or new impacts will occur. All the original avoidance and mitigation measures as indicated in the original botanical and faunal study are still relevant and applicable to the amended layout and must be implemented.

## **6.2 AGRICULTURAL IMPACTS**

An Agricultural Impact Statement was undertaken by Christo Lubbe. A copy of this assessment is attached in **Annexure E2**. As part of this statement, the agricultural specialist confirmed that the BESS:

1. will not change or increase the nature or severity of any of the agricultural impacts originally identified and reported in 2013;
2. Will have no additional impacts to those identified previously in his study; and
3. Will not require any additional management outcomes or mitigation measures for the agricultural environment that were not indicated during the previous study.

The rationale for these findings are that:

- The BESS will indeed be placed within the authorised footprint and that no additional agricultural land will be involved or lost;
- The construction of the BESS will have no additional influence on erosion or drainage patterns on site, since it will be located on higher local elevation with runoff taking place outwards into drainage lines or towards pans.

- During construction, spillage of fuel or concrete is possible, as with the construction of all other components of the facility. Mitigation measures prescribed will be the same in this case.
- It is likely that the batteries will require solid foundations like concrete pads or steel decks, which are not different from the foundations for the pylons of the connection line, foundations for auxiliary buildings and the substation.

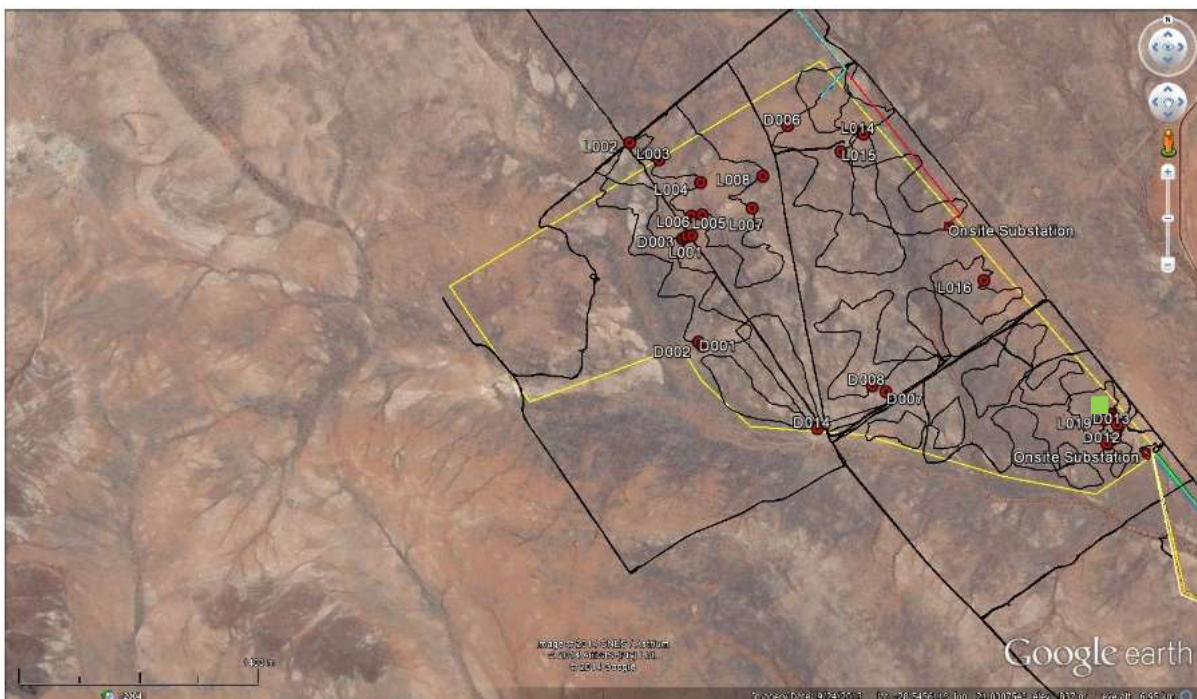
The specialist furthermore confirmed that from an agricultural view point, there are no additional management or mitigation measures required for the BESS.

The findings of the original agricultural study indicate that the site's agricultural potential is low. Due to poor soil properties and extreme climatic conditions. Farming activities consist of grazing for cattle, but due to the low grazing potential of the region, the loss of the small area of grazing land is negligible. The specialist furthermore concluded that the proposed PV facility will have a very small impact on agriculture, locally and on site, and will have no influence on the current commercial farming in the region. This statement applies equally to the addition of the BESS.

### 6.3 HERITAGE IMPACTS

A Heritage Impact Statement was undertaken by Dr Lita Webley. A copy of this assessment is attached in **Annexure E3**. The following findings relating to the heritage impact of the BESS were confirmed by the specialist.

The 2014 layout has avoided impacts to majority of heritage sites (including archaeological sites) identified in the HIA (November 2014). No new heritage impacts have been identified as a result of the proposed BESS. The proposed battery facility will be in proximity to archaeological sites D012, D013 and L019 (indicated with red dots).



**Figure 6:** Location of BESS (green) in relation to the Archaeology survey paths and recorded sites (Webley 2020)

The sites were respectively listed as scatters of quartz and banded ironstone artefacts (MSA) near a small dry stream (D012 and D013) and are of low significance. L019 are described as two very small cairns (only 50cm x 50cm in size). It seemed unlikely that these cairns represented burials due to their

small size. However, they were identified as potentially having a “high” significance, since burials are always considered to be sensitive and of high significance.

The SAHRA Final Comment (25 March 2015) confirms that it is unlikely that the stone cairns represent burials.

Since grave sites are located under the soil surface and are only exposed once the construction commences, it is possible, although unlikely, that the cairns may represent burials. It is essential that the EMPr makes provision for the recovery of archaeological material which may be uncovered during construction. The impacts identified and assessed previously remain unchanged.

The following recommendations were made in the HIA report which was submitted to the South African Heritage Resources Agency in 2014, which remain unchanged:

- If any archaeological remains, including human remains, are uncovered during construction, then work must stop in that area and the responsible heritage authorities (SAHRA) must be notified.

The Archaeology Specialist indicated that the following additional recommendation should be included in the EMPr amendment for the BESS:

- The Environmental Control Officer must be present during the ground clearance of the BESS to ensure that any archaeological sites/graves can be identified and that suitable mitigation measures can be implemented as required.

The specialist concluded that her impact ratings for the proposed development have not been changed with the proposed addition of a BESS.

**Table 4:** Archaeology Impacts relating to the Dyasonsklip Solar Energy Facility 1, which remain unchanged by the addition of the BESS.

Potential impact to pre-colonial Archaeology								
	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Without mitigation	1 Local	1 Local	3 Irreversible	5 Low	Improbable	Very Low	Negative	High
With mitigation	1 Low	1 Low	3 Irreversible	5 Low	Improbable	Very Low	Neutral	High
Potential Impacts to Graves								
	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Without mitigation	1 Local	1 High	3 Irreversible	5 Low	Probable	High	Negative	High
With mitigation	1 Low	1 Low	3 Irreversible	5 Low	Improbable	High	Neutral	High

## 6.4 PALAEOLOGICAL IMPACTS

A Palaeontological Impact Statement was undertaken by Dr John Almond. A copy of this assessment is attached in **Annexure E4**. As part of this statement, the palaeontology specialist confirmed the following:

A palaeontological heritage assessment (PIA) of the Dyasonsklip Solar Energy Facility 1 near Upington was submitted by the specialist in 2014. This study concluded the following regarding the palaeontological sensitivity of the project area:

1. The igneous and metamorphic Precambrian basement rocks underlying the Dyasonsklip Solar Energy Facility 1 study area at depth are entirely unfossiliferous.
2. The overlying aeolian sands and stream gravels of the Kalahari Group mantling the older bedrocks are generally of low palaeontological sensitivity.

It was concluded that the proposed Dyasonsklip Solar Energy Facility 1 near Upington, including the BESS, is unlikely to have significant impacts on local palaeontological heritage resources.

## 6.5 VISUAL IMPACTS

A Visual Impact Statement was undertaken by Mr Stephen Stead of VRMA. A copy of this assessment is attached in **Annexure E5**.

This visual statement confirmed that due to the relative remoteness of the locality and some topographic screening, no sensitive receptors were identified for the site.

As such, the visual exposure and sensitivity of the landscape to the proposed BESS is defined as **Low**. Based on the VRM methodology, the scenic quality of the area is defined as Medium.

There is a good policy fit for the Dyasonsklip Solar Energy Facility 1 (located within the REDZ7), and the region already depicts a number of large-scaled renewable energy projects that define the sense of place.

Thus, the findings of this visual statement are that the BESS development for Dyasonsklip Solar Energy Facility 1 is unlikely to result in the loss of significant visual and scenic resources, and as such should be allowed to proceed provided that the mitigation measures detailed in the original VIA are implemented.

## 6.6 CUMULATIVE IMPACT ASSESSMENT

The cumulative impact of the facility as a whole was considered and assessed in detail in the previous Environmental Impact Assessment Process. The main cumulative impact assessed in the EIA process was the the reduced ability to meet conservation obligations and targets due to cumulative habitat loss and impact on broad-scale ecological processes due to cumulative loss and fragmentation of habitat. Both of these cumulative impacts were rated as low. The proposed amendment includes the construction and operation of a BESS that falls within the authorised footprint and as such will not have any additional cumulative impacts nor will it change those previously assessed.

## 6.7 IMPACT SUMMARY

The table below provides a comparative summary of the nature and significance of overall impacts originally assessed versus those associated with the addition of the BESS. As can be seen in this summary table, the proposed amendment does not change the nature, nor the significance of the impacts already assessed.

**Table 5:** Comparative summary of the significance of impacts associated with Dyasonsklip Solar Energy Facility 1 as authorised and those associated with the addition of the BESS.



Nature of Impact	Significance of Impact as Authorised	Overall significance of impact, including BESS Amendment
Impact on Botanical Components	Low – Medium Negative	Low – Medium Negative
Impact on Faunal Components	Low – Medium Negative	Low - Medium Negative
Impact on Heritage Resources	Low Negative	Low Negative
Impact on Archaeological Resources	Low Negative	Low Negative
Impact on Paleontological Resources	Low Negative	Low Negative
Impact on Hydrological Resources	Medium-Low Negative	Medium - Low Negative
Visual Impact	Low Negative	Low Negative
Impact on Agricultural Resources	Low Negative	Low Negative
Economic Impact	High Positive	High Positive
Social Impact	High Positive	High Positive

As can be seen in the table above, the proposed amendment does not change the nature, nor the significance of the impacts already assessed.

## 6.8 IMPACT STATEMENT

None of the participating specialists identified any new impacts that were not previously assessed, nor did they identify any major changes in the significance of the impacts that were previously assessed. The BESS will marginally increase the surface water run-off associated with the facility as a whole but not to such an extent that the overall impact significance would increase.

It can therefore be stated with a relatively high level of confidence that the addition of the BESS to the authorised facility will not result in any unacceptable environmental impacts.

## 7. MITIGATION MEASURES

Based on the outcome of this environmental assessment, it is recommended that the following additional mitigation measures be included as conditions of authorisation of the amendment decision:

- The applicant must compile and implement a Lifecycle Battery Recycling Programme. This programme should be submitted to the competent authority for approval prior to the commencement of construction of the BESS;
- The applicant must compile and implement a thermal management and monitoring programme. This programme should be completed prior to the operation of the BESS;
- During the construction phase of the project, first responders from the nearest major centres of Upington and Keimoes (such as fire fighters and paramedics) must be given appropriate training on dealing with any emergency situation that may occur as a result of the BESS. Such training must be provided by the technology suppliers or an appointed service provider.
- Appropriate warnings and Standard Operating Procedure for emergency events must be developed and must be provided to the local emergency services and the O&M staff on site.
- The Environmental Control Officer must be present during the ground clearance of the BESS to ensure that any archaeological sites/graves can be identified and that suitable mitigation measures can be implemented as required.
- The applicant must compile and implement a comprehensive BESS operations and maintenance programme to ensure all monitoring and protective devices remain in good working order. This comprehensive operations and maintenance programme must amongst others ensure thermal management safety protocols are in place.
- In the unlikely event of a thermal runaway, any contamination of land that occurs as a result of this event needs to be contained and cleaned up by a specialist contractor and the area rehabilitated to its former state.

## 8. PUBLIC PARTICIPATION PROCESS



A public participation plan has been compiled and approved by the competent authority.

This plan was submitted in compliance with regulation GNR660 published on 05 June 2020 in terms of the Disaster Management Act (57/2002) and titled: Directions Regarding Measures to Address, Prevent and Combat the Spread of COVID-19 Relating to National Environmental Management Permits and Licences. In compliance with section 5.1 and annexure 2 of these regulations, a public participation plan must be presented to the competent authority for approval prior to implementation.

This application is for a part 2 amendment of an existing EA and is submitted in terms of regulation 31. The public participation requirements for a part 2 amendment are contained in regulation 32(1)(aa), which requires that the report (i.e. amendment assessment report) be subjected to a public participation process, which had been agreed to by the competent authority, and which was appropriate to bring the proposed change to the attention of potential interested and registered interested and affected parties, including organs of state, which have jurisdiction in respect of the relevant activity and the competent authority.

Cape EAPrac's proposal to comply with regulation 32(11)aa of the NEMA EIA regulations and Regulation 660 in terms of the disaster management act is as follows:

An amendment assessment report will be compiled to assess the impact of the addition of a Battery Energy Storage System (BESS) within the footprint authorised for the project. This Amendment Assessment Report will include:

1. Statements from all participating specialists confirming whether or not the addition of the BESS will change the nature or impact of any of the impacts that were assessed as part of specialist studies.
2. Statements from all participating specialists to confirm whether or not the addition of a BESS within the assessed footprint will result in any additional impacts in respect of their particular specialist discipline.
3. Statements from participating specialists to confirm whether any additional management actions or mitigations are applicable to the addition of a BESS.
4. A BESS technical study.
5. A High-level BESS risk assessment.
6. An addendum to the existing EMPr (incorporating an application to amend the existing EMPr) to incorporate additional management outcomes and actions associated with the BESS.

Notification of the availability of the amendment assessment report (incorporating points 1-6 above) will be sent to the following parties:

- (a) the competent authority;
- (b) every State department that administers a law relating to a matter affecting the environment relevant to an application for the amendment of an environmental authorisation;
- (c) all organs of state which have jurisdiction in respect of the activity to which the application for amendment relates;
- (d) all I&AP's that were registered as part of the original EIA process;
- (e) all I&AP's that were registered on other EIA's that took place on the same properties; and
- (f) all neighbouring property owners.

The amendment assessment report will be accessible to the abovementioned parties via the following mechanisms:

1. The competent authority will be provided copies of the applications and assessment report via their file upload portal.
2. All State Departments and Organs of State who have online submission platforms (e.g. SAHRA via their SAHRIS system) will receive copies of the reports via these platforms.

3. The digital copy of the documentation that will be available on the Cape EAPrac website.
4. A download link (via dropbox or sharepoint) will be provided to all I&APs.
5. All notification letters will include a copy of the executive summary of the Amendment Assessment Report.
6. The ward councillor will be approached for assistance to distribute notification letters along with the executive summaries via their communication channels (community WhatsApp groups, social media and physical communiques).
7. I&AP's that do not have access to digital platforms will be provided with printed hardcopies of the executive summary and any specialist reports that they may have interest in. Such copies will be provided by courier or postal service.
8. Potential and registered I&APs will be informed that copies of the documentation can be provided via postal or courier services.

The final Amendment Assessment Report will provide proof of compliance with points 1-8 above.

## 9. CONCLUSION AND RECOMMENDATIONS

This environmental process is currently being undertaken to present the details of the proposed amendment to potential and registered I&APs and to identify and assess environmental impacts, issues and concerns that may result from the proposed amendment to the Environmental Authorisation.

*Cape EAPrac* is of the opinion that the information contained in this Amendment Assessment Report and the documentation attached hereto is sufficient to allow the registered and potential I&APs to apply their minds to the potential negative and/or positive impacts associated with the development, in respect of the amendments applied for.

This environmental process has not identified any fatal flaws nor major irreversible impacts with the proposed amendments. As such, it is the EAP's view that the proposed amendments can be considered for authorisation.

All participating specialists have confirmed that the inclusion of the BESS is unlikely to result in any additional impacts nor increase any of the respective impacts previously assessed.

All stakeholders are requested to review this Draft Amendment Assessment Report and the associated appendices, and provide comment, or raise issues of concern, directly to *Cape EAPrac* within the specified 30-day comment period. All comments received during this comment period will be considered and incorporated into the Final Amendment Assessment Report that will be submitted to the to DEFF for decision making.

**Based on the outcomes of this assessment (which includes input from the participating specialists), as well as the outcome of the risk assessment, it is Cape EAPracs reasoned opinion that the application for amendment of the Environmental Authorisation be granted, subject to the following conditions:**

1. That the BESS Addendum to the EMPr be adopted and implemented for the life cycle of the project;
2. That the additional mitigation measures detailed in section 7 of this assessment report be adopted and implemented; and
3. That the additional mitigation measures identified in the Risk Assessment be implemented.

## 10. ABBREVIATIONS

AIA	Archaeological Impact Assessment
BGIS LUDS	Biodiversity Geographic Information System Land Use Decision Support
CBA	Critical Biodiversity Area
CDSM	Chief Directorate Surveys and Mapping
CEMPr	Construction Environmental Management Programme
DEA	Department of Environmental Affairs
DEA&NC	Department of Environmental Affairs and Nature Conservation
DME	Department of Minerals and Energy
DSR	Draft Scoping Report
EAP	Environmental Impact Practitioner
EHS	Environmental, Health & Safety
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EMPr	Environmental Management Programme
ESA	Ecological Support Area
GPS	Global Positioning System
GWh	Giga Watt hour
HIA	Heritage Impact Assessment
I&APs	Interested and Affected Parties
IDP	Integrated Development Plan
IFC	International Finance Corporation
IPP	Independent Power Producer
kV	Kilo Volt
LUDS	Land Use Decision Support
LUPO	Land Use Planning Ordinance

MW	Mega Watt
NEMA	National Environmental Management Act
NEMBA	National Environmental Management: Biodiversity Act
NERSA	National Energy Regulator of South Africa
NHRA	National Heritage Resources Act
NPAES	National Protected Area Expansion Strategy
NSBA	National Spatial Biodiversity Assessment
NWA	National Water Act
PM	Post Meridiem; "Afternoon"
PSDF	Provincial Spatial Development Framework
REIPPPP	Renewable Energy Independent Power Producer Procurement Programme
S.A.	South Africa
SACAA / CAA	South African Civil Aviation Authority
SAHRA	South African National Heritage Resources Agency
SANBI	South Africa National Biodiversity Institute
SANS	South Africa National Standards
SDF	Spatial Development Framework
TOPS	Threatened and Protected Species

## 11. REFERENCES

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<sup>2</sup> This reference list excludes specialist studies that form part of this environmental process and which are contained in Annexure E1 – E12

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