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PART II AMENDMENTS

HIGHLANDS NORTH, CENTRAL AND SOUTH WIND ENERGY FACILITIES

EASTERN CAPE PROVINCE

SOCIAL STATEMENT

AUGUST 2021

By

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1. INTRODUCTION AND BACKGROUND TO AMENDMENT

Arcus Consultancy Services South Africa (Pty) Ltd (Arcus) was appointed by WKN Windcurrent (Pty) Ltd to manage the Basic Assessment (BA) processes for the establishment of the proposed Highlands Wind Energy Facility (WEF) (comprising three phases, i.e. Highlands North WEF, Highlands Central WEF and Highlands South WEF), and associated infrastructure located ~ 20 km west of the town of Somerset East in the Blue Crane Route Local Municipality in the Eastern Cape Province. Tony Barbour was appointed by Arcus to undertake a specialist Social Impact Assessment (SIA) as part of the BA processes. The SIA Report was completed in September 2018.

Based on the findings of the environmental assessment processes and associated specialist studies, WKN Windcurrent received Environmental Authorisations in January/February 2020 for:

- Highlands North WEF: 14 authorised turbine positions.
- Highlands Central WEF: 12 authorised turbine positions.
- Highlands South WEF: 15 authorised turbine positions.

Environmental Authorisation was therefore granted for the establishment of 41 wind turbines associated with the three Highlands WEFs, namely Highlands North, Central and South. Due to improvements in turbine technology a Part II Amendment of the Environmental Authorisation for each phase, to increase the turbine Hub Height and Rotor Diameter specifications is being proposed. In addition, battery energy storage systems (BESS) are proposed for each phase (North, Central and South). In summary, the details of the proposed amendments are:

- Total number of turbines: Reduced from 41 to 34.
- Location of turbines: Changes to the siting of some of the proposed turbines.
- Hub Height: Increased from a maximum of 135m to 180m.
- Rotor Diameter: Increased from a maximum of 150m to 175m.
- Establishment of three BESSs to be located adjacent to the substations for each phase (North, Central and South). The footprint of a BESS will be approximately 1ha.

Table 1 provides a description of the BESS. The description applies to each phase (North, Central and South). The proposed amendments associated with each of the phases namely, Highlands North, Central and South are summarised in Tables 2, 3 and 4.

Table 1: BESS description

Type of Battery	Battery Storage Facility comprising Solid State or Flow Technologies (e.g. Lithium-ion, Sodium-sulphur, Vanadium or an alternative battery technology)
Life span of BESS	Assume the same as duration of facility
Motivation for BESS	Battery storage offers a wide range of advantages to South Africa including renewable energy time shift, renewable capacity firming, electricity supply reliability and quality improvement, voltage regulation, electricity reserve capacity improvement, transmission congestion relief, load following and time of use. In essence, this technology allows renewable energy to enter the base load and peak power generation market and therefore can compete directly with fossil fuel sources of power generation and offer a truly sustainable electricity supply option
Footprint	Approximately 1 ha
Connection type	AC Connection on Grid
System Power	Up to 870 MWh
No. of batteries used	Variable, preferably containerized systems
Inverters used	Specific type will be chosen according to performance requirements of use cases
Height of BESS	Approximately 8 m

Highlands North WEF

Table 2: Proposed amendments to Highlands North WEF

Component	Approved	Proposed Amendment
Number of turbines:	14 turbines	Up to 12 turbines
Generation capacity of the WEF:	Up to 84 MW	Up to 87 MW
Generation capacity per turbine:	Up to 6 MW	Remove generation capacity per turbine
Rotor / blade diameters:	Maximum of 150 m	Maximum of 175 m (except T01 with a maximum rotor diameter of 160 m and T12 with a maximum rotor diameter of 150 m).
Hub height:	Up to 135 m	Up to 180 m
Tip height:	Up to 200 m	Up to 267.5 m
Foundation Size:	Up to approximately 25 m x 25 m in total and up to 5 m deep per turbine	up to approximately 35 m x 35 m in total and up to 7 m deep per turbine
Hard Stand area per turbine:	5 000 m ²	6 000 m ²
Battery Storage:	N/A (Not currently included in project description)	Battery storage technology adjacent to the substation on the temporary laydown area (with a footprint of approximately 1ha, and a height of approximately 8m).
Length of internal roads:	Approximately 50 km	Approximately 45 km

In addition, the following amendments are proposed for the Highlands North WEF:

- Slight adjustments to the turbine positions in the preliminary approved layout are proposed, in order to minimise wake effects, as well as to avoid the proposed new blade length extending into areas identified as highly sensitive for birds and bats.
- Refinement to the proposed access roads layout (due to amendments to turbine positions and the reduction in the number of turbines at the WEF).
- Removal of Condition 39, which states that “*The development footprint must exclude the area identified as a potential target for the protected area expansion (NPAES)*”.

Highlands Central WEF

Table 3: Proposed amendments to Highlands Central WEF

Component	Approved	Proposed Amendment
Number of turbines:	Up to 12 turbines	Up to 10 turbines
Generation capacity of the WEF:	Up to 72 MW	No change
Generation capacity per turbine:	Up to 6 MW	Remove generation capacity per turbine
Rotor / blade diameters:	Maximum of 150 m	Maximum of 175 m
Hub height:	Up to 135 m	Up to 180 m
Tip height:	Up to 200 m	Up to 267.5 m
Foundation Size:	Up to approximately 25 m x 25 m in total and up to 5 m deep per turbine	up to approximately 35 m x 35 m in total and up to 7 m deep per turbine

Hard Stand area per turbine:	5 000 m ²	6 000 m ²
Battery Storage:	N/A (Not currently included in project description)	Battery storage technology adjacent to the substation on the temporary laydown area (with a footprint of approximately 1ha, and a height of approximately 8m).
Length of internal roads:	Approximately 50 km	Approximately 45 km

In addition, the following amendments are proposed for the Highlands Central WEF:

- Slight adjustments to the turbine positions in the preliminary layout are proposed, in order to minimise wake effects, as well as to avoid the proposed new blade length extending into areas identified as highly sensitive for birds and bats.
- Refinement to the proposed access roads layout (due to amendments to turbine positions and the reduction in the number of turbines at the WEF).
- Rotation of the Highlands Central WEF Substation yard, to fit the proposed amended road layout.
- Correction of an editorial error in the project title on page 1 of the EA and Condition 1, where reference is made to 70 MW instead of 72 MW.

Highlands South WEF

Table 4: Proposed amendments to Highlands South WEF

Component	Approved	Proposed Amendment
Number of turbines:	Up to 15 turbines	Up to 12 turbines
Generation capacity of the WEF:	Up to 90 MW	No change
Generation capacity per turbine:	Up to 6 MW	Remove generation capacity per turbine
Rotor / blade diameters:	Maximum of 150 m	Maximum of 175 m
Hub height:	Up to 135 m	Up to 180 m
Tip height:	Up to 200 m	Up to 267.5 m
Foundation Size:	Up to approximately 25 m x 25 m in total and up to 5 m deep per turbine	up to approximately 35 m x 35 m in total and up to 7 m deep per turbine
Hard Stand area per turbine:	5 000 m ²	6 000 m ²
Battery Storage:	N/A (Not currently included in project description)	Battery storage technology adjacent to the substation on the temporary laydown area (with a footprint of approximately 1ha, and a height of approximately 8m).
Length of internal roads:	Approximately 50 km	Approximately 45 km

In addition, the following amendments are proposed for the Highlands South WEF:

- Slight adjustments to the turbine positions in the preliminary layout are proposed, in order to minimise wake effects, as well as to avoid the proposed new blade length extending into areas identified as highly sensitive for birds and bats.
- Refinement to the proposed access roads layout (due to amendments to turbine positions and the reduction in the number of turbines at the WEF).
- Rotation of the Highlands South WEF Substation yard, to fit the proposed amended road layout.

- Removal of Condition 17.1 (relating to the requirement of an Electromagnetic Compatibility (EMC) Control Plan for acceptance by the SKA-SA, for inclusion in the Final EMPr).
- Removal of Condition 42 which states that “*The development footprint must exclude the area identified as a potential target for the protected area expansion (NPAES)*”.

2. COMMENT ON SOCIAL ISSUES

The 2018 SIA assessed the overall social impact of all three phases of the project, namely the Highlands North, Central and South WEFs. The findings of the 2018 SIA therefore apply to each phase.

Based on the findings of the 2018 SIA, the key negative social issues are associated with the potential visual impacts associated with the wind turbines. In this regard a key concern identified during the SIA (2018) related to the visual impacts associated with the wind turbines and the potential impact on existing, established game farming and hunting operations in the area.

The Social Statement comments on the implications of the proposed amendments to the project with reference to the findings of the 2018 SIA. Changes in foundation size, hardstand area, and length of internal roads will not have any material impact on the findings of the SIA undertaken in 2018. Likewise, due to the relatively small footprint (1ha), the social impacts associated with the establishment of three BESSs associated with each phase will be negligible. The focus of the Social Statement is therefore on the visual impact associated with the proposed amendments, specifically the increase in the size of the wind turbines.

The Social Statement is therefore informed by the findings of the Visual Impact Assessment (VIA) for the Part II Amendment (June 2021) undertaken by Quinton Lawson and Bernard Oberholzer. Annexure A contains copy of the authors CV. Annexure B contains a signed declaration of independence.

3. ASSUMPTIONS

- The findings of the 2018 SIA are relevant and applicable. These findings apply to each of three phases of the Highlands WEF, namely the North, Central and South WEF.
- The baseline information contained in the 2018 SIA remains applicable to the amendment.
- The key policy and planning documents for the study area (IDP, SDF etc.) reviewed as part of the 2018 SIA and the findings of the policy review remain valid. As indicated in the policy review, the Highlands WEF site is located in the Cookhouse Renewable Energy Development Zone (REDZ). The general area has therefore been identified as suitable for the establishment of renewable energy facilities. Annexure C contains a summary of a review of the latest Integrated Development Plans for the Blue Crane Route Local Municipality and Sarah Baartman District Municipality. Annexure C also contains a summary of the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) undertaken by the Department of Energy, National Treasury and the Development Bank of South Africa in June 2020, which highlights the social and socio-economic benefits associated with the REIPPPP.

4. SUMMARY OF KEY FINDINGS OF SIA (2018)

Tony Barbour was appointed by Arcus to undertake a specialist Social Impact Assessment (SIA) (Barbour and van der Merwe, 2018) as part of the EIA process for the now authorised Highlands WEF. The key findings of the 2018 study were summarised under the following sections:

- Fit with policy and planning.
- Construction phase impacts.
- Operational phase impacts.
- Cumulative Impacts.
- Decommissioning phase impacts.
- No-development option.

The key findings of the SIA (2018) are provided below. As indicated above, these findings apply to all three phases of the project, namely the Highlands North, Central and South WEF.

Fit with policy and planning

The findings of the review indicated that renewable energy is strongly supported at a national, provincial, and local level. The development of and investment in renewable energy is supported by the National Development Plan (NDP), New Growth Path Framework and National Infrastructure Plan, which all refer to renewable energy. At a provincial level, the development of renewable energy is supported by the Eastern Cape Provincial Growth and Development Plan (ECPGDP), Sarah Baartman District Municipality Integrated Development Plan (IDP) and Blue Crane Route Local Municipality Integrated Development Plan (IDP). The site is also located in the Cookhouse Renewable Energy Development Zone (REDZ). The general area has therefore been identified as suitable for the establishment of renewable energy facilities. However, there is a need to ensure that the siting of renewable energy facilities (including wind farms) does not impact on the area's tourism potential. In this regard the area to north of the site and the R63 is identified as Tourist Focus Area in the SBDM SDF.

Construction phase impacts

Potential positive impacts

- Creation of employment and business opportunities, and the opportunity for skills development and on-site training.

Potential negative impacts

- Impacts associated with the presence of construction workers on site and in the area.
- Influx of job seekers to the area.
- Increased safety risk to farmers, risk of stock theft and damage to farm infrastructure associated with presence of construction workers on the site.
- Increased risk of grass fires.
- Impact of heavy vehicles, including damage to roads, safety, and dust.
- Impact on farming activities.

The findings of the SIA indicated that the significance of all the potential negative impacts with mitigation were **Low Negative**. The potential negative impacts could therefore be effectively mitigated if the recommended mitigation measures are implemented. Table 5 summarises the significance of the impacts associated with the construction phase.

Table 5: Summary of impacts associated with construction phase¹

Impact	Significance No Mitigation/ Enhancement	Significance With Mitigation/ Enhancement
Creation of employment and business opportunities	Medium (+)	Medium (+)
Presence of construction workers and potential impacts on family structures and social networks	Medium (-)	Low (-)
Influx of job seekers	Low (-)	Low (-)
Increased risks to livestock and farming infrastructure associated with the construction related activities and presence of construction workers on the site	Medium (-)	Low (-)
Increased fire risk	Medium (-)	Low (-)
Impact of heavy vehicles and construction activities	Medium (-)	Low (-)
Impact on farming activities	Medium (-)	Low (-)

Operational phase impacts

Potential positive impacts

- The establishment of renewable energy infrastructure.
- Creation of employment and business opportunities. The operational phase will also create opportunities for skills development and training.
- Benefits associated with the establishment of a Community Trust.
- Benefits for affected landowners.

Potential negative impacts

- The visual impacts and associated impact on sense of place.
- Impact on property values.
- Potential impact on tourism.

Table 6 summarises the significance of the impacts associated with the operational phase.

Table 6: Summary of impacts associated with operational phase²

Impact	Significance No Mitigation/ Enhancement	Significance With Mitigation/ Enhancement
Promotion of renewable energy projects	High (-) ³	High (+)
Creation of employment and business opportunities	Medium (+)	Moderate (+)
Establishment of Community Trust	Medium (+)	High (+)
Benefits for local affected landowners	Low (+)	Medium (+)
Visual impact and impact on sense of place⁴	Medium-High (-) Low (-)	Medium (-) Low (-)
Impact on property values and adjacent operations	Medium (-)	Medium (-)

¹ These findings apply to all three phases of the project, namely the Highlands North, Central and South WEF.

² These findings apply to all three phases of the project, namely the Highlands North, Central and South WEF

³ Assumes development does not proceed.

⁴ Ratings reflect findings of VIA (Medium-High Negative) and findings of stakeholders interviewed that do not regard wind farm as a having a negative visual impact (Low Negative).

Impact on tourism⁵	Low (-) Medium (-)	Low (-) Medium (-)
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Cumulative impact on sense of place

The findings of the VIA (June 2018) note that the development of the proposed wind farms and grid connections, when seen together with the existing wind farms and power lines in the vicinity, would result in cumulative visual impacts resulting in further change to the largely rural character to the area. In addition to the Highlands wind farms and powerline grid connections, there are existing Eskom powerlines parallel with the R63 Route, an approved solar PV farm near Pearston and a proposed Middleton wind farm south of Cookhouse on the N10 National Route, both within 35 kilometres of the Highlands site. The VIA also notes that the fact that the proposed Highlands wind farms fall within the gazetted Cookhouse Renewable Energy Development Zone (REDZ) means that it forms part of a renewable energy node. In conclusion the VIA states the "Given that the renewable energy projects mentioned above are not within viewing distance of each other and that they form part of REDZ, the cumulative visual impact significance is considered to be **Low (Negative)** in the local context".

As indicated above, while certain stakeholders are opposed to the proposed WEF, others either support the development and or do not have an objection to the establishment of a WEF on the proposed site. This will also have implications for the perceptions of different people towards to the nature and significance of the cumulative impacts associated with wind farms on sense of place. However, the potential impact of wind energy facilities on the landscape is an issue that does need to be considered, specifically given South African's strong attachment to the land and the growing number of wind facility applications. The Environmental Authorities should therefore be aware of the potential cumulative impacts when evaluating applications and the potential implications for other land uses, specifically game farming and associated tourist activities.

Cumulative impact on services

The establishment of the proposed WEF and the other renewable energy facilities in the SBDM and BCRLM may place pressure on local services, specifically medical, education and accommodation. This pressure will be associated with the potential influx of workers to the area associated with the construction and operational phases of renewable energy projects proposed in the area, including the proposed WEF. The potential impact on local services can be mitigated by employing local community members. With effective mitigation the impact is rated as **Low Negative**.

In addition, as indicated below, this impact should also be viewed within the context of the potential positive cumulative impacts for the local economy associated with the establishment of renewable energy as an economic driver in the area.

Cumulative impact on local economies

In addition to the potential negative impacts, the establishment of the proposed WEF and other renewable energy projects in the area also has the potential to create a number of socio-economic opportunities for the SBDM and BCRLM, which, in turn, will result in a positive social benefit. The positive cumulative impacts include creation of employment, skills development and training opportunities, creation of downstream business opportunities. The Community Trusts associated with each project will also create significant socio-economic benefits. This benefit is rated as **High Positive** with enhancement.

⁵ The rating applies to the impact on tourism in the broader area (Low Negative) and adjacent game farming and hunting operations (Medium).

Potential health impacts

The potential health impacts typically associated with WEFs include, noise, shadow flicker and electromagnetic radiation. The findings of a literature review undertaken by the Australian Health and Medical Research Council published in July 2010 indicate that there is no evidence of wind farms posing a threat to human health. The research also found that wind energy is associated with fewer health effects than other forms of traditional energy generation and in fact will have positive health benefits (WHO, 2004). Based on these findings it is assumed that the significance of the potential health risks posed by the proposed WEF is of **Low Negative** significance.

No-development option

The No-Development option would represent a lost opportunity for South Africa to supplement its current energy needs with clean, renewable energy. Given South Africa's position as one of the highest per capita producers of carbon emissions in the world, this would represent a High negative social cost. The no-development option also represents a lost opportunity in terms of the employment and business opportunities (construction and operational phase) associated with the proposed Highlands WEF and the benefits associated with the establishment of a Community Trust. This also represents a negative social cost.

However, at a provincial and national level, it should be noted that the proposed WEF development is not unique. In this regard, a significant number of other renewable energy developments are currently proposed in the Eastern Cape and other parts of South Africa. Foregoing the proposed establishment of WEFs would therefore not necessarily compromise the development of renewable energy facilities in the Eastern Cape Province and or South Africa. However, the socio-economic benefits for local communities in the SBDM and BCRLM would be forfeited.

Decommissioning phase

In the case of decommissioning ~ 20 permanent jobs associated with the operational phase would be lost. The potential impacts associated with the decommissioning phase can however be effectively managed with the implementation of a retrenchment and downscaling programme. With mitigation, the impacts are assessed to be **Low Negative**. The proponent should also investigate the option of establishing an Environmental Rehabilitation Fund to cover the costs of decommissioning and rehabilitation of disturbed areas. The Fund should be funded by a percentage of the revenue generated from the sale of energy to the national grid over the 20-25 year operational life of the facility⁶. The rationale for the establishment of a Rehabilitation Trust Fund is linked to the experiences with the mining sector in South Africa and failure of many mining companies to allocate sufficient funds during the operational phase to cover the costs of rehabilitation and closure. Alternatively, the funds from the sale of the WEF as scrap metal should be allocated to the rehabilitation of the site.

Conclusions and recommendations

Conclusions

The findings of the SIA indicate that the development of the proposed Highlands WEF will create employment and business opportunities for locals during both the construction and operational phase of the project. The establishment of a Community Trust will also benefit the local community. The proposed development also represents an investment in clean,

⁶ There is also a possibility that the existing wind turbines may be replaced with new, more efficient turbines at the end of the first 20 year contract period. This would create additional employment opportunities and also ensure that the existing operational phase jobs are maintained.

renewable energy infrastructure, which, given the negative environmental and socio-economic impacts associated with a coal-based energy economy and the challenges created by climate change, represents a significant positive social benefit for society as a whole. The findings of the SIA also indicate that the Renewable Energy Independent Power Producers Procurement Programme (REIPPPP) has resulted in significant socio-economic benefits, both at a national level and at a local, community level. These benefits are linked to foreign Direct Investment, local employment and procurement and investment in local community initiatives.

The Highlands WEF site is also located within the Cookhouse Wind REDZ. The area has therefore been identified as suitable for the establishment of renewable energy facilities. However, a key concern identified during the SIA relates to the visual impacts associated with the wind turbines and the potential impact on existing, well established game farming and hunting operations in the area, specifically the area to the north, east and south of the site. The majority of these operations cater for up-market overseas visitors and the existing "African veld" sense of place represents a key component of their marketing strategy. The establishment of a wind farm on their western boundary would impact on the areas current sense of place, which in turn, may negatively impact on their operations and property values. The potential impacts will be largely confined to four to five existing game farming operations. The potential localised impacts would therefore need to be considered within the context of the location of the Highlands WEF within the Cookhouse Wind REDZ and the significant socio-economic benefits associated with the establishment of renewable energy facilities.

Recommendations⁷

- The applicants should meet with the affected landowners located to the north, east and south of the site to discuss the possibility of relocating wind turbines that have the highest potential visual impact.

5. SUMMARY OF KEY FINDINGS OF VISUAL IMPACT ASSESSMENT (2021)

As indicated above, a key concern identified during the SIA (2018) related to the visual impacts associated with the wind turbines and the potential impact on existing, established game farming and hunting operations in the area. The Social Statement is therefore informed by the findings of the Visual Impact Assessment (VIA) for the Part II Amendment undertaken by Quinton Lawson and Bernard Oberholzer (June 2021). The key findings of the Part 2 Amendment VIA are summarised below.

Highlands North WEF

The VIA notes that in terms of the location of wind turbines, the layout of the reduced number of wind turbines has avoided areas of visual sensitivity. A benefit of the amended layout from a visual perspective is that the turbines are located further away from the R63 and from a number of farmsteads. The VIA also notes that the addition of the BESS adjacent to the substation would only have marginal visual implications.

The increase in height of the proposed wind turbines and the increase in rotor diameter is partly offset by the reduction in the number of turbines, as the fewer turbines could result in less visual clutter in the landscape. The viewshed analysis indicates that there would be a moderate increase in the zone of visual exposure and a slight increase in the extent of the viewshed, but that farmsteads in a view shadow would generally not be affected.

⁷ This recommendation was included in the 2018 SIA. Based on this recommendation the applicant has met with the affected landowners.

Highlands Central WEF

The VIA notes that in terms of the location of wind turbines, the layout of reduced number of wind turbines has avoided areas of visual sensitivity. A benefit of the amended layout from a visual perspective is that the turbines are further away from a number of farmsteads in some cases. The VIA also notes that the addition of the BESS adjacent to the substation would only have marginal visual implications.

The increase in height of the proposed wind turbines and the increase in rotor diameter is partly offset by the reduction in the number of turbines, as the fewer turbines could result in less visual clutter in the landscape. The viewshed analysis indicates that there would be a moderate increase in the zone of visual exposure and a slight increase in the extent of the viewshed, but that farmsteads in a view shadow would generally not be affected. The VIA notes that on balance no change to the overall visual impact significance is expected.

Highlands South WEF

The VIA notes that in terms of the location of wind turbines, the layout of reduced number of wind turbines has avoided areas of visual sensitivity. A benefit of the amended layout from a visual perspective is that the turbines are further away from a number of farmsteads in some cases. The VIA also notes that the addition of the BESS adjacent to the substation would only have marginal visual implications.

The increase in height of the proposed wind turbines and the increase in rotor diameter is partly offset by the reduction in the number of turbines, as the fewer turbines could result in less visual clutter in the landscape. The viewshed analysis indicates that there would be a moderate increase in the zone of visual exposure and a slight increase in the extent of the viewshed, but that farmsteads in a view shadow would generally not be affected. The VIA notes that on balance no change to the overall visual impact significance is expected.

Cumulative Visual Impacts

The VIA notes that given that the 3 phases of the proposed Highlands wind farms are located within the Cookhouse REDZ means that they would form part of a renewable energy node. The VIA notes that given that other renewable energy projects mentioned in the VIA are not within viewing distance of each other and that they form part of the Cookhouse REDZ, the cumulative visual impact significance is considered to be low.

Mitigation measures

The VIA notes that process of selecting the location of the 41 wind turbines associated with authorised Highlands WEF involved a number of iterations based on the specialist studies, including input from the visual specialists. As such the visual mitigations contained in the original VIA of 2018 are still relevant.

Conclusion

In conclusion, the VIA for the Part II Amendment notes that the increased hub height, rotor diameter and blade tip height would result in increased visibility of the 3 phases of the Highlands wind farm project (i.e., Highlands North, Central and South WEFs), particularly when viewed from the R63. Given that the visual significance of the increased height is generally limited to within 5km of the turbines, and that there will be fewer turbines, the overall visual impact significance rating for the turbines is not expected to change from that of the originally assessed layout (comprising 49 turbines) or authorised layout (comprising 41 turbines) and would remain **Moderate (-)** before and after

mitigation for all three (3) phases of the Highlands Wind Farm project. The addition of the BESS facilities adjacent to the substations would not have any major visual significance, given their maximum height of 8m and distance from visual receptors.

Based on these findings the VIA states that “provided that the visual mitigations listed in the original visual impact study (including post-construction rehabilitation of the site) are adhered to, the findings of the original visual assessment for the 3 Phases of the Highlands Wind Farm project (Highlands North, Highlands Central and Highlands South wind energy facilities) would still be valid for the proposed amendments. Our opinion from a visual perspective therefore is that the proposed amendments could be approved”.

6. SOCIAL STATEMENT

As indicated above, the summary of the proposed amendments to the Highlands WEFs include:

- An overall reduction in the number of wind turbines from 41 to 34.
- Increase in total generation capacity from maximum of 246 MW to 249 MW. This represents a marginal benefit in terms of increasing the contribution of renewable energy to meet South Africa’s energy demand.
- Increase in turbine hub height from 135m to 180m.
- Increase in rotor diameter from 150m to 175m.
- Establishment of three Battery Energy Storage Systems (BESSs) next to the authorised substations for all three phases. The establishment of three BESSs represents a benefit in that it ensures a more secure and efficient renewable energy-based grid that is more resistant to disruptions.

Due to the relatively small footprint associated with each BESS (1ha) the potential negative social impacts associated with the establishment and operation of the three proposed BESSs will be limited. The establishment of the BESSs will also create additional employment opportunities during the operational phase. The significance rating for the creation of employment opportunities during the construction and operational phase will however remain unchanged, namely Medium (+) with enhancement. Based on a review of the proposed amendments to the Environmental Authorisations associated with the Part II Amendments and the findings of the VIA Amendment (Lawson and Oberholzer, June 2021) undertaken for the Part II Amendments, there are no changes to the significance ratings reflected in the Highlands WEF SIA (2018) as summarized above.

As indicted below, these findings apply to all three phases of the Highlands WEF, namely Highlands North, Central and South.

Highlands North WEF

- The reduction of the number of wind turbines and increase in the hub height and rotor diameter of the wind turbines associated with the Part II Amendment will not change the nature or significance of any of the social impacts previously assessed as part of the SIA (2018) for the Highlands WEFs.
- The construction and operation of the proposed BESS will not result in any material social impacts that were not previously assessed as part of the SIA (2018) for the Highlands WEFs. The addition of a BESS also represents an advantage by ensuring a more secure and efficient renewable energy-based grid that is more resistant to disruptions.
- The mitigation measures for the construction of the Highlands WEFs listed in the SIA (2018) are appropriate for the Part II Amendment, including the establishment of the

BESS⁸. No additional management outcomes or mitigation measures in terms of social impacts are therefore required for the Highlands North WEF.

Table 7: Summary of impacts associated with construction phase: Highlands North WEF

Impact	Significance No Mitigation/ Enhancement	Significance With Mitigation/ Enhancement
Creation of employment and business opportunities	Medium (+)	Medium (+)
Presence of construction workers and potential impacts on family structures and social networks	Medium (-)	Low (-)
Influx of job seekers	Low (-)	Low (-)
Increased risks to livestock and farming infrastructure associated with the construction related activities and presence of construction workers on the site	Medium (-)	Low (-)
Increased fire risk	Medium (-)	Low (-)
Impact of heavy vehicles and construction activities	Medium (-)	Low (-)
Impact on farming activities	Medium (-)	Low (-)

Table 8: Summary of impacts associated with operational phase: Highlands North WEF

Impact	Significance No Mitigation/ Enhancement	Significance With Mitigation/ Enhancement
Promotion of renewable energy projects	High (-) ⁹	High (+)
Creation of employment and business opportunities	Medium (+)	Moderate (+)
Establishment of Community Trust	Medium (+)	High (+)
Benefits for local affected landowners	Low (+)	Medium (+)
Visual impact and impact on sense of place ¹⁰	Medium (-) Low (-)	Medium (-) Low (-)
Impact on property values and adjacent operations	Medium (-)	Medium (-)
Impact on tourism ¹¹	Low (-) Medium (-)	Low (-) Medium (-)

The findings of the 2018 SIA relating to cumulative impacts on sense of place (low negative), services (low negative) and local economy (high positive) also apply, as do the findings relating to decommissioning (low negative).

Highlands Central WEF

- The reduction of the number of wind turbines and increase in the hub height and rotor diameter of the wind turbines associated with the Part II Amendment will not change

⁸ As indicated above, the applicant has met with the affected landowners to discuss the location of the proposed wind turbines in relation to their properties. This recommendation has therefore already been met.

⁹ Assumes development does not proceed.

¹⁰ Ratings reflect findings of 2021 VIA (Moderate or Medium) and findings of stakeholders interviewed that do not regard wind farms as having a negative visual impact (Low Negative).

¹¹ The rating applies to the impact on tourism in the broader area (Low Negative) and adjacent game farming and hunting operations (Medium).

the nature or significance of any of the social impacts previously assessed as part of the SIA (2018) for the Highlands WEFs.

- The construction and operation of the proposed BESS will not result in any material social impacts that were not previously assessed as part of the SIA (2018) for the Highlands WEFs. The addition of a BESS also represents an advantage by ensuring a more secure and efficient renewable energy-based grid that is more resistant to disruptions.
- The mitigation measures for the construction of the Highlands WEFs listed in the SIA (2018) are appropriate for the Part II Amendment, including the establishment of the BESS¹². No additional management outcomes or mitigation measures in terms of social impacts are therefore required for the Highlands Central WEF.

Table 9: Summary of impacts associated with construction phase: Highlands Central WEF

Impact	Significance No Mitigation/ Enhancement	Significance With Mitigation/ Enhancement
Creation of employment and business opportunities	Medium (+)	Medium (+)
Presence of construction workers and potential impacts on family structures and social networks	Medium (-)	Low (-)
Influx of job seekers	Low (-)	Low (-)
Increased risks to livestock and farming infrastructure associated with the construction related activities and presence of construction workers on the site	Medium (-)	Low (-)
Increased fire risk	Medium (-)	Low (-)
Impact of heavy vehicles and construction activities	Medium (-)	Low (-)
Impact on farming activities	Medium (-)	Low (-)

Table 10: Summary of impacts associated with operational phase: Highlands Central WEF

Impact	Significance No Mitigation/ Enhancement	Significance With Mitigation/ Enhancement
Promotion of renewable energy projects	High (-) ¹³	High (+)
Creation of employment and business opportunities	Medium (+)	Moderate (+)
Establishment of Community Trust	Medium (+)	High (+)
Benefits for local affected landowners	Low (+)	Medium (+)
Visual impact and impact on sense of place¹⁴	Medium (-) Low (-)	Medium (-) Low (-)
Impact on property values and adjacent operations	Medium (-)	Medium (-)
Impact on tourism¹⁵	Low (-) Medium (-)	Low (-) Medium (-)

¹² As indicated above, the applicant has met with the affected landowners to discuss the location of the proposed wind turbines in relation to their properties. This recommendation has therefore already been met.

¹³ Assumes development does not proceed.

¹⁴ Ratings reflect findings of 2021 VIA (Moderate or Medium) and findings of stakeholders interviewed that do not regard wind farms as having a negative visual impact (Low Negative).

¹⁵ The rating applies to the impact on tourism in the broader area (Low Negative) and adjacent game farming and hunting operations (Medium).

The findings of the 2018 SIA relating to cumulative impacts on sense of place (low negative), services (low negative) and local economy (high positive) also apply, as do the findings relating to decommissioning (low negative).

Highlands South WEF

- The reduction of the number of wind turbines and increase in the hub height and rotor diameter of the wind turbines associated with the Part II Amendment will not change the nature or significance of any of the social impacts previously assessed as part of the SIA (2018) for the Highlands WEFs.
- The construction and operation of the proposed BESS will not result in any material social impacts that were not previously assessed as part of the SIA (2018) for the Highlands WEFs. The addition of a BESS also represents an advantage by ensuring a more secure and efficient renewable energy-based grid that is more resistant to disruptions.
- The mitigation measures for the construction of the Highlands WEFs listed in the SIA (2018) are appropriate for the Part II Amendment, including the establishment of the BESS¹⁶. No additional management outcomes or mitigation measures in terms of social impacts are therefore required for the Highlands South WEF.

Table 11: Summary of impacts associated with construction phase: Highlands South WEF

Impact	Significance No Mitigation/ Enhancement	Significance With Mitigation/ Enhancement
Creation of employment and business opportunities	Medium (+)	Medium (+)
Presence of construction workers and potential impacts on family structures and social networks	Medium (-)	Low (-)
Influx of job seekers	Low (-)	Low (-)
Increased risks to livestock and farming infrastructure associated with the construction related activities and presence of construction workers on the site	Medium (-)	Low (-)
Increased fire risk	Medium (-)	Low (-)
Impact of heavy vehicles and construction activities	Medium (-)	Low (-)
Impact on farming activities	Medium (-)	Low (-)

Table 12: Summary of impacts associated with operational phase: Highlands South WEF

Impact	Significance No Mitigation/ Enhancement	Significance With Mitigation/ Enhancement
Promotion of renewable energy projects	High (-) ¹⁷	High (+)
Creation of employment and business opportunities	Medium (+)	Moderate (+)
Establishment of Community Trust	Medium (+)	High (+)
Benefits for local affected landowners	Low (+)	Medium (+)

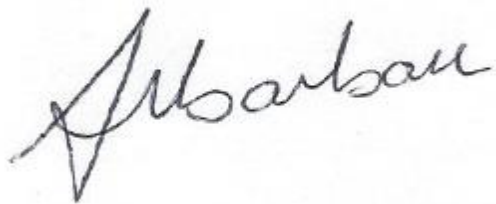
¹⁶ As indicated above, the applicant has met with the affected landowners to discuss the location of the proposed wind turbines in relation to their properties. This recommendation has therefore already been met.

¹⁷ Assumes development does not proceed.

Visual impact and impact on sense of place¹⁸	Medium (-) Low (-)	Medium (-) Low (-)
Impact on property values and adjacent operations	Medium (-)	Medium (-)
Impact on tourism¹⁹	Low (-) Medium (-)	Low (-) Medium (-)

The findings of the 2018 SIA relating to cumulative impacts on sense of place (low negative), services (low negative) and local economy (high positive) also apply, as do the findings relating to decommissioning (low negative).

The Part II Amendment for all three phases of the Highlands WEF (Highlands North, Central and South), including the establishment of the three BESSs, is therefore supported.



Tony Barbour
 Tony Barbour Environmental Consulting and Research
 20 August 2021

¹⁸ Ratings reflect findings of 2021 VIA (Moderate or Medium) and findings of stakeholders interviewed that do not regard wind farms as having a negative visual impact (Low Negative).

¹⁹ The rating applies to the impact on tourism in the broader area (Low Negative) and adjacent game farming and hunting operations (Medium).

ANNEXURE A

Tony Barbour

ENVIRONMENTAL CONSULTING AND RESEARCH

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Tony Barbour's experience as an environmental consultant includes working for ten years as a consultant in the private sector followed by four years at the University of Cape Town's Environmental Evaluation Unit. He has worked as an independent consultant since 2004, with a key focus on Social Impact Assessment. His other areas of interest include Strategic Environmental Assessment and review work.

EDUCATION

- BSc (Geology and Economics) Rhodes (1984);
- B Economics (Honours) Rhodes (1985);
- MSc (Environmental Science), University of Cape Town (1992)

EMPLOYMENT RECORD

- Independent Consultant: November 2004 – current;
- University of Cape Town: August 1996-October 2004: Environmental Evaluation Unit (EEU), University of Cape Town. Senior Environmental Consultant and Researcher;
- Private sector: 1991-August 2000: 1991-1996: Ninham Shand Consulting (Now Aurecon, Cape Town). Senior Environmental Scientist; 1996-August 2000: Steffen, Robertson and Kirsten (SRK Consulting) – Associate Director, Manager Environmental Section, SRK Cape Town.

LECTURING

- University of Cape Town: Resource Economics; SEA and EIA (1991-2004);
- University of Cape Town: Social Impact Assessment (2004-current);
- Cape Technikon: Resource Economics and Waste Management (1994-1998);
- Peninsula Technikon: Resource Economics and Waste Management (1996-1998).

RELEVANT EXPERIENCE AND EXPERTISE

Tony Barbour has undertaken in the region of 260 SIA's, including SIA's for renewable energy developments, infrastructure projects, dams, pipelines, and roads. In addition, he is the author of the Guidelines for undertaking SIA's as part of the EIA process commissioned by the Western Cape Provincial Environmental Authorities in 2007. These guidelines have been used throughout South Africa.

Tony was also the project manager for a study commissioned in 2005 by the then South African Department of Water Affairs and Forestry for the development of a Social Assessment and Development Framework. The aim of the framework was to enable the Department of Water Affairs and Forestry to identify, assess and manage social impacts associated with large infrastructure projects, such as dams. The study also included the development of guidelines for Social Impact Assessment, Conflict Management, Relocation and Resettlement and Monitoring and Evaluation.

Countries with work experience include South Africa, Namibia, Angola, Botswana, Zambia, Lesotho, Swaziland, Ghana, Nigeria, Senegal, Mozambique, Mauritius, Kenya, Ethiopia, Oman, South Sudan, Sudan and Armenia.

ANNEXURE B

The specialist declaration of independence in terms of the Regulations_

I, Tony Barbour _____, declare that --

General declaration:

I act as the independent specialist in this application;

I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;

I declare that there are no circumstances that may compromise my objectivity in performing such work;

I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;

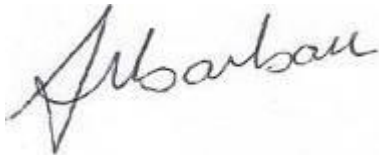
I will comply with the Act, Regulations and all other applicable legislation;

I have no, and will not engage in, conflicting interests in the undertaking of the activity;

I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;

all the particulars furnished by me in this form are true and correct; and

I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.



Signature of the specialist:

Tony Barbour Environmental Consulting and Research

Name of company (if applicable):

20 August 2021

Date:

ANNEXURE C

1. Draft Integrated Development Plan Review 2021-2022 Blue Crane Route Local Municipality

Under Section 2.8, Economic Analysis (p72), the Draft Integrated Development Plan Review 2021-2022 for the Blue Crane Route Local Municipality identifies a number of economic infrastructure/projects within the municipal area including renewable energy wind farms.

Section 2.8.1, The following opportunities exist in terms of renewable energy (p73), notes that wind generation initiatives in the Sarah Baartman District are fast growing with a large number of generation facilities under investigation. The importance of wind energy generation in the district was confirmed by the announcement by the Department of Energy, three of the eight approved wind farm developments were developed in the district, with an additional wind farm in Nelson Mandela Bay Metro Municipality. One of the largest energy generating wind farms, i.e. Cookhouse Wind Farm (135MW) has been developed and is currently supplying electricity to the National Grid.

Section 4.4, Environmental Management Plan (EMP) (p119), indicates that the Blue Crane Route Municipal Area has a number of strategic environmental advantages. It contains 97% natural land cover, is centrally located between three National Parks, contains biodiversity of regional and national significance, boasts incredible scenic beauty, and local conditions present a number of opportunities for *renewable energy generation on a large scale*. The section also notes that the growth of a nature-based tourism economy is evident in the increasing number of game and hunting farms, accommodation facilities and tourism businesses in the region.

2. Sarah Baartman District Municipality IDP (2021/22 Final Review, 26 May 2021)

Under investing in natural capital (p60), the IDP notes that the growth of tourism in the region is strongly associated with the exceptional and diverse natural assets. Of relevance the section notes that the key approaches to investing in natural capital include:

- Creating new generation green jobs and local income streams rooted in renewable energy.
- Growing the rural tourism economy based on natural capital through agri-, adventure- and ecotourism initiatives.

Under Chapter 3, Developmental interventions within the district (p68), Development Priority 3: Local Economic Development (p70) the IDP notes that the SBDM is committed to the consolidation and optimal utilisation of available resources to facilitate economic development, for the purpose of the creation of new, decent, sustainable employment opportunities, job creation and sustainable enterprise development, retention and expansion in the district. This will be achieved through targeted investment promotion to grow strategic sectors that are able to create employment opportunities on a substantial scale in the short to medium term, and more advanced industries that are crucial for long term economic growth. Of relevance, specific sectors earmarked for further development in the district include:

- Green economy (including, but not limited to renewable energy and ecosystem services)
- Tourism.

In this regard the IDP notes that the District Municipality needs to invest in fully understanding the developments occurring within its area, including renewable energy, and identify initiatives for communities to benefit therefrom.

Chapter 4, of the IDP focusses on the SBDM SDF, which was adopted in 2013. Under section 4.1.1, Spatial Synopsis, reference is made to the potential for renewable energy, specifically wind. The IDP also notes under Section 4.1.7 Economic Spatial Outcomes (p120), that the District serves as the economic hinterland /service area for the Nelson Mandela Bay Metro. In this regard:

- The economy is dependent on the natural resources of the area (Tourism and production).
- SDF to identify areas for renewable energy production recognizing that game reserves and farming are playing a bigger role in the economy

Chapter 5, Integration (p115), includes a detailed discussion on energy, climate change and renewable energy (Section 5.19 and 5.19.1)(P212). Section 5.19.1, Renewable Energy, notes that renewable energy is poised to be one of the major areas of investment both within the country and internationally in the years ahead. The renewable energy sector is an area of great emerging opportunity for the Eastern Cape. The anticipated massive growth in this sector provides major opportunities for growth in job creation in the province because of the potential of the area to host major renewable energy generation infrastructure as well as the potential to be a major manufacturer of such infrastructure leveraging off the automotive sector. In addition to the significance for the Eastern Cape, the announcement of successful wind farm developments is particularly significant for Sarah Baartman District Municipality, as three of the eight approved wind farm developments are to be developed in the district, with an additional wind farm to be developed in Nelson Mandela Bay Municipality. The two largest energy generating wind farms, i.e. Cookhouse Wind Farm (135MW) and Jeffreys Bay (133.86MW) have been built and are operational.

3. Independent Power Producers Procurement Programme (IPPPP): An Overview

The section presents an overview of the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) undertaken by the Department of Energy, National Treasury and the Development Bank of South Africa in June 2020. The programme's primary mandate is to secure electrical energy from the private sector for renewable and non-renewable energy sources. With regard to renewables, the programme is designed to reduce the country's reliance on fossil fuels, stimulate an indigenous renewable energy industry and contribute to socio-economic development and environmentally sustainable growth. The IPPPP has been designed not only to procure energy but has also been structured to contribute to the broader national development objectives of job creation, social upliftment and broadening of economic ownership.

Energy supply

By the end of June 2020, the REIPPPP had made the following significant impacts.

- 6 422MW of electricity had been procured from 112 RE Independent Power Producers (IPPs) in seven bid rounds.
- 4 276 MW of electricity generation capacity from 68 IPP projects has been connected to the national grid.
- 49 461GWh of energy has been generated by renewable energy sources procured under the REIPPPP since the first project became operational in November 2013.

Renewable energy IPPs have proved to be very reliable. Of the 68 projects that have reached COD, 64 projects have been operational for longer than a year. The energy generated over the past 12-month period for these 64 projects is 11 079GWh, which is 93% of their annual energy contribution projections (P50) of 11 882GWh over a 12-month delivery period. Twenty-eight (24) of the 64 projects (38%) have individually exceeded their P50 projections.

Energy costs

In line with international experience, the price of renewable energy is increasingly cost competitive when compared with conventional power sources. The REIPPPP has effectively captured this global downward trend with prices decreasing in every bid window. Energy procured by the REIPPPP is progressively more cost effective and has approached a point where the wholesale pricing for new coal-and renewable-generated energy intersect.

Through the competitive bidding process, the IPPPP effectively leveraged rapid, global technology developments and price trends, buying clean energy at lower and lower rates with every bid cycle, resulting in SA getting the benefit of renewable energy at some of the lowest tariffs in the world. The price for wind power has dropped by 50% to R0.91/kWh, with the BW4 price directly comparable with the per kWh price of new coal generation. Solar PV has dropped most significantly with a price decrease of 75% to R1.10/kWh between BW1 and BW4.

This compares with the industry estimates in April 2020 of R1.45/kWh for Medupi. Considering the on-going delays in completion, indications are that these costs may even be significantly higher.

Investment

The document notes that the REIPPPP has attracted significant investment in the development of the REIPPs into the country. The total investment (total project costs²⁰), including interest during construction, of projects under construction and projects in the process of closure is R209.7 billion (this includes total debt and equity of R209.2 billion, as well as early revenue and VAT facility of R0.5 billion).

The REIPPPP has attracted R41.8 billion in foreign investment and financing in the seven bid windows (BW1 – BW4, 1S2 and 2S2). This is almost double the inward FDI attracted into South Africa during 2015 (R22.6 billion). The document notes that the share of foreign investment and equity showed an increase in the most recent bid window (2S2), suggesting that the REIPPPP continued to generate investor confidence despite the poor economic conditions in South Africa in recent years.

South African citizen shareholding

The importance of retaining local shareholding in IPPs is key condition of the procurement requirements. The RFP notes that bidders are required to have South African Equity Participation of 40% in order to be evaluated. In terms of local equity shareholding, 52% (R31.5 billion) of the total equity shareholding (R61.0 billion) was held by South African's across BW1 to BW4, 1S2 and 2S2. This equates to substantially more than the 40% requirement. Foreign equity amounts to R29.5 billion and contributes 48% of total equity.

The REIPPPP also contributes to Broad Based Black Economic Empowerment and the creation of black industrialists. In this regard, Black South Africans own, on average, 33% of projects that have reached financial close (BW1-BW4), which is 3% higher than the 30% target. This includes black people in local communities that have ownership in the

²⁰ Total project costs means the total capital expenditure to be incurred up to the commercial operations date in the design, construction, development, installation, and or commissioning of the project)

IPP projects that operate in or near their communities and represents the majority share of total South African Entity Participation.

On average, black local communities own 9% of projects that have reached financial close. This is well above the 5% target. In addition, an average of 21% shareholding by black people in engineering, procurement, and construction (EPC) contractors has been attained for projects that have reached financial closure. This is higher than 20% target. The shareholding by black people in operating companies of IPPs has averaged 24% (against the targeted 20%) for the 68 projects in operation (i.e. in BW1–4).

The target for shareholding by black people in top management has been set at 40%, with an average 67% achieved to date. The target has therefore been significantly exceeded.

Community shareholding and community trusts

The regulations require a minimum ownership of 2.5% by local communities in IPP projects as a procurement condition. This is to ensure that a substantial portion of the investments has been structured and secured as local community equity. An individual community's dividends earned will depend on the terms of each transaction corresponding with the relevant equity share. To date all shareholding for local communities have been structured through the establishment of community trusts. For projects in BW1 to BW4, 1S2 and 2S2, qualifying communities will receive R26.9 billion net income over the life of the projects (20 years). The report notes that the bulk of the money will however only start flowing into the communities from 2028 due to repayment obligations in the preceding years (repayment obligations are mostly to development funding institutions). However, despite the delay this represents a significant injection of capital into mainly rural areas of South Africa. If the net projected income for the first seven bid windows (BW1-BW4, 1S2 and 2S2) was structured as equal payments overtime, it would represent an annual net income of R1.34 billion per year.

Income to all shareholders only commences with operation of the facility. Revenue generated to date by the 68 operational IPPs amounts to R105 billion.

Procurement spend

In addition to the financial investments into the economy and favourable equity structures aimed at supporting BEE, the REIPPPP also targets broader economic and socio-economic investment. This is through procurement spend and local content.

The total projected procurement spend for BW1 to BW4, 1S2 and 2S2 during the construction phase was R73.1 billion, while the projected operations procurement spend over the 20 years operational life is estimated at 76.8 billion. The combined (construction and operations) procurement value is projected as R149.9 billion of which R81 billion has been spent to date. For construction, of the R70.2 billion already spent to date, R57.7 billion is from the 68 projects which have already been completed. These 68 projects had planned to spend R52.9 billion. The actual procurement construction costs have therefore exceeded the planned costs by 9% for completed projects.

Preferential procurement

The share of procurement that is sourced from Broad Based Black Economic Empowered (BBBEE) suppliers, Qualifying Small Enterprises (QSE), Exempted Micro Enterprises (EME) and women owned vendors are tracked against commitments and targeted percentages. The IA target requirement for BBBEE is 60% of total procurement spend. However, the actual share of procurement spend by IPPs from BBBEE suppliers for construction and operations combined is currently reported as 83%, which is significantly higher than the target of 60%, but also the 71% that had been committed by IPPs. BBBEE, as a share of procurement spend for projects in construction, is also reported as 84% with operations slightly lower at 74%. However, these figures have not been verified and the report notes that they are reported with caution.

The majority of the procurement spend to date has been for construction purposes. Of the R70.2 billion spent on procurement during construction, R59 billion has reportedly been procured from BBBEE suppliers, achieving 87% of total procured. Actual BBBEE spend during construction for BW1 and BW2 alone was R25.5 billion, 81% more than the 14.1 billion planned by the IPPs. The R59 billion spent on BBBEE during construction is 15% more than the R51.1 billion that had originally been anticipated by all IPPs procured.

Total procurement spend by IPPs from QSE and EMEs has amounted to R24.7 billion (construction and operations) to date, which exceeds commitments by 96% and is 30% of total procurement spend to date (while the required target is 10%). QSE and EME's procurement spend for construction was R 22 billion, which is 4.4 times the targeted spend for construction of R4.9 billion during this procurement phase.

In terms of procurement from women-owned vendors to date, 5% of total construction procurement spend has been from woman-owned vendors (against a targeted 5%), and 6% of operational procurement spend has been realised from woman-owned vendors to date, thereby exceeding the targeted 5%. In terms of construction spend, R 3.2 billion was undertaken by women-owned vendors, which is almost double the R 1.9 billion estimated for the construction of projects that have reached financial close.

The REIPPPP has therefore created significant employment opportunities for black South African citizens and local communities beyond planned targets. This highlights the importance of the programme in terms of employment equity and the creation of more equal societies.

Local Content²¹

The report notes that the REIPPPP programme represents the country's most comprehensive strategy to date in achieving the transition to a greener economy. Local content minimum thresholds and targets were set higher for each subsequent bid window. The report notes that for a programme of this magnitude, with construction procurement spend alone estimated at R73.1 billion, the result is a substantial stimulus for establishing local manufacturing capacity. The local content strategy has created the required incentives for a number of international technology and component manufactures to establish local manufacturing facilities.

The documents notes that for the portfolio as a whole, the expectation would reasonably be for local content spend to fall between 25% and 65% of the total project value (considering the range of targets and minimum requirements). Local content commitments by IPPs amount to R67.6 billion or 45% of total project value (R151.1billion for all bid windows).

Actual local content spend reported for IPPs that have started construction amounts to R57.6 billion against a corresponding project value (as realised to date) of R114 billion. This means that 50% of the project value has been locally procured, exceeding the 45% commitment from IPPs and the thresholds for BW1 – BW4 (25-45%).

To date, the R57.6 billion local content spend reported by active IPPs is already 87% of the R66billion local content expected. This is with 23 projects still in construction, and 68 of the 91 active projects having reached COD (i.e. 75% of the active portfolio complete). For the 68 projects that have reached COD, local content spend has been R 46.96 billion of a committed R46.55 billion, which is 0.9 more than the planned local spend.

Leveraging employment opportunities

²¹ Local content is expressed as a % of the total project value and not procurement or total project costs.

To date, a total of 52 603 job years²² have been created for South African citizens, of which 42 355 job years were in construction and 10 248 in operations. These job years should rise further past the planned target as more projects enter the construction phase. Employment opportunities across all five active bid windows are 126% of the planned number during the construction phase (i.e. 33 707 job years), with 23 projects still in construction and employing people. The number of employment opportunities is therefore likely to continue to grow beyond the original expectations. By the end of June 2020, 68 projects had successfully completed construction and moved into operation. These projects created 33 449 job years of employment, compared to the anticipated 23 619. This was 42% more than planned.

The report notes that employment thresholds and targets were consistently exceeded across the entire portfolio. The average share of South African citizens of total South Africa based employees for BW1 – BW4 was 91% during construction (against a target of 80%), while it was 91% during operations for BW1 – BW4 (against a target of 80%). The report notes that the construction phase offers a high number of opportunities over shorter durations, while the operations phase requires fewer people, but over an extended operating period.

To date, 42 355 job years for SA citizens were achieved during construction, which is 26% above the planned 33 707 job years for active projects. These job years are expected to rise further since 23BW4 projects are still in or entering, construction.

In terms of benefits for local communities, significantly more people from local communities were employed during construction than was initially planned. For active projects, the expectation for local community participation was 13 284 job years. To date 22 935 job years have been realised (i.e. 73% more than initially planned), with 23 projects still in, or entering, construction. The number of black SA citizens employed during construction also exceeded the planned numbers by 53%.

Black South African citizens, youths and rural or local communities have been the major beneficiaries during the construction phases, as they respectively represent 81%, 43% and 49% of total job opportunities created by IPPs to date. However, woman and disabled people could still be significantly empowered as they represent a mere 10% and 0.4% of total jobs created to date, respectively. Nonetheless, the fact that the REIPPPP has raised employment opportunities for black South African citizens and local communities beyond planned targets, indicates the importance of the programme to employment equity and the drive towards more equal societies.

The share of black citizens employed during construction (81%) and the early stages of operations (84%) has significantly exceeded the 50% target and the 30% minimum threshold. Likewise, the share of skilled black citizens (as a percentage of skilled employees) for both construction (69%) and operations (80%) has also exceeded the 30% target and minimum threshold of 18%. The share of local community members as a share of SA-based employees was 49% and 68% for construction and operations respectively – exceeding the minimum threshold of 12% and the target of 20%.

Socio-economic development (SED) contributions

An important focus of the REIPPPP is to ensure that the build programme secures sustainable value for the country and enables local communities to benefit directly from the investments attracted into the area. In this regard, IPPs are required to contribute a percentage of projected revenues accrued over the 20-year project operational life toward

²² The equivalent of a full-time employment opportunity for one person for one year

SED initiatives. These contributions accrue over the 20-year project operation life and are used to invest in housing and infrastructure as well as healthcare, education, and skills development.

The minimum compliance threshold for SED contributions is 1% of the revenue with 1.5% the targeted level over the 20-year project operational life. For the current portfolio of projects, the average commitment level is 2.2%, which is 125% higher than the minimum threshold level. To date (across seven bid windows) a total contribution of R23.1 billion has been committed to SED initiatives. Assuming an even, annual revenue spread, the average contribution per year would be R1.2 billion. Of the total commitment, R18.8 billion is specifically allocated for local communities where the IPPs operate. With every new IPP on the grid, revenues and the respective SED contributions will increase.

As a percentage of revenue, SED obligations become effective only when operations commence, and revenue is generated. Of the 91 IPPs that have reached financial close (BW1–BW41), 68 are operational. The SED contributions associated with these 68 projects has amounted to R 1.2 billion to date.

In terms of ED and SED spend, education, social welfare, and health care initiatives have a SED focus. SED spend on education has been almost double the expenditure on enterprise development. This is despite enterprise development being a stand-alone commitment category in terms of the IA. This is, in part, due to the fact that some early childhood development programmes have also been incorporated in educational programmes. IPPs have supported 1 123 education institutions with a total of R312 million in contributions, from 2015 to the end of June 2020. A total of 1 142 bursaries, amounting to R183.8 million, have been awarded by 55 IPPs from 2015 until the end of June 2020. The largest portion of the bursaries were awarded to African and Coloured students (97%), with women and girls receiving 56% of total bursaries. The Northern Cape province benefitted most from the bursaries awarded, with 61%, followed by the Eastern Cape (18%) and Western Cape (14%). Enterprise development and social welfare are the focus areas that have received the second highest share of the contributions to date.

Enterprise development contributions

The target for IPPs to spend on enterprise development is 0.6% of revenues over the 20-year project operational life. However, for the current portfolio, IPPs have committed an average of 0.63% or 0.03% more than the target. Enterprise development contributions committed for BW1 to BW4, 1S2 and 2S2 amount to R7.2 billion. Assuming an equal distribution of revenue over the 20-year project operational life, enterprise development contributions would be R360 million per annum. Of the total commitment, R5.6 billion is specifically committed directly within the local communities where the IPPs operate, contributing significantly to local enterprise development. Up until the end of June 2020 a total of R 384.2 million had already been made to the local communities located in the vicinity of the 68 operating IPPs. This represents 93% of the total R384.2 million enterprise development contributions made to date.

Contribution to cleaner energy and water savings

As part of the global commitment, South Africa is targeting an emissions trajectory that peaks at 34% below a “business as usual” case in 2020, 42% below in 2025 and from 2035 declines in absolute terms. These commitments are incorporated into the National Development Plan in Outcome 10 and sub-outcome 3. The REIPPPP contributes constructively to economic stability, energy security and environmental sustainability.

The emission reductions for the programme during the preceding 12 months (June 2019–June 2020) is calculated as 11.5 million tonnes CO₂ (MtonCO₂) based on the 1 1313 GWh energy that has been generated and supplied to the grid over this period. This represents 56% of the total projected annual emission reductions (20.5MtonCO₂) achieved with only

partial operations. A total of 50.2 Mton CO2 equivalent reduction has been realised from programme inception to date.

The March 2019 Report also notes that since operation, the IPPs have saved 42.8 million kilolitres of water related to fossil fuel power generation. This saving will have increased with the increase in energy generated by renewable energy since 2019. The REIPPPP therefore contributes significantly towards meeting South Africa's GHG emission targets and, at the same time, supporting energy security, economic stability and environmental sustainability.