MULLER partnership
QUANTITY SURVEYORS

25 October 2023

Spark Renewables
Level 4, 1A Rialto Lane
MANLY NSW 2095

ATTENTION: LAURIE WALLIS

RE: DINAWAN WIND AND SOLAR FARM PROJECTS – SOLAR FARM CAPITAL INVESTMENT VALUE ESTIMATE

As per our accepted fee proposal dated 28 August 2023, Muller Partnership has prepared a Capital Investment Value (CIV) estimate as required by the NSW Department of Planning and Environment for the Dinawan Energy Hub - Solar Farm state significant project and enclose our report.

Should you wish to discuss any of the above please do not hesitate to contact Frank Weng or the undersigned.

Yours faithfully
MULLER PARTNERSHIP

PETER DALLY – DIRECTOR (MRICS, MAIQS – 28135)

PD: FW 23290 Dinawan Energy Hub Solar Farm- CIV Estimate

MULLER partnership

Newcastle | Sydney | Melbourne

DINAWAN WIND AND SOLAR FARM PROJECTS – SOLAR FARM CAPITAL INVESTMENT VALUE ESTIMATE

25 October 2023

23290

Disclaimer

Muller Partnership have prepared this report in part on the basis of information supplied to it in the ordinary course of business by Spark Renewables.

Whilst all reasonable professional care and skill have been exercised to validate its accuracy and authenticity, Muller Partnership is unable to provide any Guarantee in that regard, and will not be liable to any party for any loss arising as a result of any such information subsequently being found to be inaccurate, lacking authenticity or having been withheld.

This report is only intended for use by Spark Renewables and Muller Partnership accepts no responsibility to other parties who use opinions or information contained herein. They do so at their own risk.

In acting as Quantity Surveyor for Spark Renewables, Muller Partnership's liability is limited to the scope of services and value limit, as defined in their Professional indemnity insurance cover. A copy is available on request.

This report covers only the items as contained in this report. Should Spark Renewables require additional items or areas of assessment, these should be specifically requested and will be actioned as agreed between the parties.

The construction costs are current as at the date of this assessment only. The values assessed herein may change significantly and unexpectedly over a relatively short period (including as a result of general market movements or factors specific to the particular property). We do not accept liability for losses arising from such subsequent changes in values.

Document history & status

Revision	Date	Description	By	Review	Approved
0	18/10/2023	Capital Investment Value Estimate	WN	FW	PD
1	24/10/2023	Capital Investment Value Estimate	WN	FW	PD
2	25/10/2023	Capital Investment Value Estimate	WN	FW	PD

CONTENTS

Capital Investment Value	Capital Investment Value of a development or project includes all costs necessary to establish and operate the project, including the design and construction of buildings, structures, associated infrastructure and fixed or mobile plant and equipment, other than the following costs: (a) amounts payable, or the cost of land dedicated or any other benefit provided, under a condition imposed under Division 6 or 6A of Part 4 of the Environmental Planning and Assessment Act or a planning agreement under that Division (b) costs relating to any part of the development or project that is the subject of a separate development consent or project approval (c) land costs (including any costs of marketing and selling land) (d) GST (as defined by A New Tax System (Goods and Services Tax) Act 1999
Construction Contingency	The Construction Contingency is a contingency allowance made for unknowns that may occur during construction due to latent conditions or issues with the documentation.
Design Development Allowance	The Design Development Allowance is a contingency included within our estimate to allow for unknown costs associated with progressing the development from the initial concept through until the 'For Construction'. At the time of For Construction documentation this contingency should be 0% as the entire project will have been designed and costed accordingly.
Preliminaries & Margin	The Preliminaries and Margin Allowance is an allowance for the builders' margin and their establishment and management of the site. This item will therefore include for items such as site fencing & amenities, site foreman, head office overheads, insurances, cranage, site cleaning, OH&S management, QA, etc.

1.0 EXECUTIVE SUMMARY

Muller Partnership has prepared a Capital Investment Value (CIV) estimate for the Dinawan Solar Farm project in support of NSW State Significant Development (SSD) application.

The CIV estimate has been prepared in accordance with the EPAA 2000 and State Environmental Planning Policy (SEPP) 2011 with consideration of the Planning Circular PS 21-020 issued 2 December 2021 and 'TPP 09-7 (Policy Paper).'

The scope of works for the Dinawan Solar Farm includes 2 million solar photovoltaic (PV) panels; 300 MW (AC coupled) Battery Energy Storage System (BESS) with 2 hours storage and associated infrastructure.

A hi-level summary of cost associated with the project is tabled below.

Description	Amount $ (excl. GST)
Total Construction Cost	**$1,237M**
TOTAL PROJECT COST [EXCL. GST]	**$1,348M**

Amounts are rounded to the nearest $1M

KEY NOTES

The purpose of this assessment is to determine the current construction cost value of the development for state authority only and is not to be used for project budgeting, finance, insurance, sale, mortgage or any other purposes.

The following equipment costs provided by Spark renewables have been reviewed and are included in the CIV estimate:

- PV Plant, Beon Energy Solutions Excel = $919M or at $1.149 per watt.
- BESS, Trina Storage and SMA with exchange rate of $1AUD = $0.63USD = $261M or $871k per MW.

The CIV estimate excludes estimating employment as supported by the actions, programs, and policies of the NSW Government.

We also refer you to Appendix A where we have attached CIV estimate.

BENCHMARKING

We have benchmarked costs against comparable projects and note as follows:

- The cost of the PV module (supply and installation) at $553K per MW benchmarks within the range on other projects of $510K to $555K per MW.
- The project cost at $1.685M per MW AC is in line with costs of other projects (including both Solar and BESS) varying from $1.6M to $2.6M per MW AC.

2.0 SCOPE OF WORKS

Project Description

Spark Renewables Pty Limited (Spark Renewables) proposes to develop the Dinawan Solar Farm, a large-scale solar photovoltaic (PV) generation facility and battery energy storage system (BESS), supported by associated infrastructure (the project). The project will be located about halfway between the towns of Coleambally and Jerilderie and lies within the Murrumbidgee local government area (LGA) in New South Wales (NSW).

The project is part of the Dinawan Energy Hub, which comprises a hybrid wind and solar farm and BESS, and will be delivered through two separate, but related, State Significant Development (SSD) applications to the NSW Department of Planning and Environment (DPE).

The project will have a generation capacity of up to approximately 800 MW(AC). The BESS will have a capacity of up to approximately 300 MW (AC coupled) and will have provision for up to two hours of storage (600 MWh).

Physical layout and design of the project will comprise the following key infrastructure elements:

- Solar farm – approximately 2 million PV modules will be mounted on single-axis tracking systems within the development footprint. The solar farm will also include power conversion units (PCUs), a cable network and internal access tracks.
- Battery energy storage system (BESS) – to store and discharge electricity as required with a storage capacity of up to approximately 300 MW (AC or DC coupled)/2 hr (600 MWh).
- Substation and control room – an on-site substation connected to the solar farm and BESS.
- Operations and maintenance (O&M) facility – including site offices, O&M buildings, amenities, equipment sheds, storage and parking areas.
- Electricity transmission line infrastructure – connecting the project substation to the proposed Dinawan Substation.

- Site access – including access to the eastern and western sections of the solar farm from Kidman Way.
- Temporary construction infrastructure – to facilitate construction and likely to include laydown and storage areas and site offices.

3.0 COST SUMMARY

Summary of the CIV estimate is as follows (refer to Appendix A for detail).

Ref	Description	$/ Excl. GST
1.0	Demolition & Site Preparation	542,000
2.0	PV Modules and Associated Infrastructure	919,101,000
3.0	Battery Energy Storage System (BESS) and Associated Infrastructure	261,328,000
4.0	Electrical Collection System, Substations and Control Room	31,456,000
5.0	Transmission Line Infrastructure Connecting the Project Substations to the Dinawan Substation	9,758,000
6.0	Temporary Works	14,800,000
7.0	Operations and Maintenance (O&M) Infrastructure	Incl.
8.0	Client Project Management	Excl.
9.0	Construction Management Supervision & Coordination	Incl.
10.0	As- Builts, Training and Manuals, Maintenance	Incl.
11.0	Engineering and Commissioning	Incl.
12.0	Maintenance	Excl.
13.0	Decommissioning and Rehabilitation	Excl.
14.0	Preliminaries, Overheads & Margin	Incl.
15.0	**Sub-Total Construction Cost**	**1,236,985,000**
16.0	Escalation	68,549,000
17.0	Contingency	37,109,000
18.0	Professional Fees	5,656,000
19.0	Authority Fees	Excl.
20.0	Land Costs	Excl.
21.0	Client Costs	Excl.
22.0	GST	Excl.
23.0	**TOTAL PROJECT COST [EXCL. GST]**	**1,348,299,000**

The above costs are rounded to the nearest thousand.

4.0 BENCHMARKING

We have benchmarked costs against comparable projects and note as follows:

- The cost of the PV module (supply and installation) at $553K per MW benchmarks within the range on other projects of $510K to $555K per MW.
- The project cost at $1.685M per MW AC is in line with costs of other projects varying from $1.6M to $2.6M per MW AC.

5.0 METHODOLOGY AND SCHEDULE OF INFORMATION

Estimate has been prepared using CostX estimating software in trade type format. As design is hi-level concept only, we have used quantities where provided, referred to Google Maps where need and estimated lengths of roads, transmission lines, etc.

All rates used within our CIV have been gathered from our in-house database as well as being constructed from first principles namely labour, materials and waste to reflect current market and project specific value.

The following equipment costs provided by Spark Renewables have been reviewed and are included in the CIV estimate:

- PV Plant, Beon Energy Solutions Excel = $919M or at $1.149 per watt AC.
- BESS, Trina Storage and SMA with exchange rate of $1AUD = $0.63USD = $261M or $871k per Mw.

Muller Partnership has used the following documentation in preparing our CIV estimate:

- Dinawan Solar Farm Environmental Impact Statement dated October 2023 prepared by EMM.
- Dinawan Energy Hub High Level Civil Site Assessment dated 18 September 2022 prepared by Donnelly Civil Consulting.
- Project Layout drawing prepared by EMM.
- Road upgrade drawings prepared by EMM.

- Email from Laurie Wallis of Spark Renewables Pty Ltd on 12 October 2023.
- Excel file named '800MW Solar Farms (October 2023)' providing the prices for full EPC solar farm.
- Excel file named 'Dinawan BESS Capex V003' providing the prices for Trina BESS, SMA PCS, freight, commissioning and installation.

6.0 ASSUMPTIONS

We have made the following assumptions in the preparation of our CIV Estimate:

1. The works will be competitively tendered to a number of suitable qualified contractors on a lump sum basis.
2. Works will be completed during normal working hours.
3. We have followed the WBS structure as provided.
4. Allowed excavation in material other than rock.
5. No demolition works are required.
6. Excavated material can be kept on site.
7. Builder will have clear access to the work area.
8. No hazardous material to be removed from site.
9. No road widening to intersection approach.
10. Shipping containers will be selected for BESS.
11. Provided BESS price includes shipping type containers, heating, ventilation, air conditioning and fire protection.
12. Length of 330kV overhead transmission line is 8,100m.
13. Size of the control building is 40m^2 and switch room is 75m^2.
14. Assumed 4 bedrooms per pod for workers accommodation compound.
15. Escalation included at 3.5% p.a with project construction is expected to commence in 2025, The project is expected to be commissioned in 2026. Assumed midpoint of construction May 2025
16. Contingency (Design & Construction) allowed at 3%.

17. Professional fees and commissioning on BESS and Solar Equipment are included within the supplied prices and Professional fees on other items including site preparation, temporary works, civil services and services has been allowed at 10% of these items.

18. Authority fees are excluded.

7.0 EXCLUSIONS

Within the following CIV the acronym 'EXCL' means work that has ***not*** been included in our estimate. We specifically note the following exclusions from the estimated cost:

1. Demolition works.
2. Services diversions.
3. Contamination and remediation of hazardous material and associated tip fees.
4. Excavation in rock.
5. Gravel borrow pit including processing plant, sediment basin and associated tracks.
6. Silt fence to one side of rivers / streams.
7. Retaining walls / fill to road widening at intersection.
8. Culvert type animal crossings.
9. Signalised intersection.
10. Upgrading the bridge across the Coleambally Irrigation Channel.
11. Industrial shed for BESS.
12. Concrete batching plant.
13. Solar farm operation cost.
14. Maintenance.
15. Decommissioning at the end of design life and rehabilitation.
16. Client project management cost.
17. Price escalation.
18. Land cost.
19. Authority fees.
20. Works outside normal hours.
21. Delays resulting from approvals such as Environmental/ Authorities.
22. GST.

APPENDIX A – ESTIMATE BREAKDOWN

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Trade Summary

Project: 23290 Dinawan Energy Hub – Solar Farm **Details:** Capital Investment Value Estimate

Building:

Code	Description	Quantity	Unit	Rate	Total
	23290 Dinawan Energy Hub - Solar Farm				
	Demolition and Site Preparation	2,000	ha	271.04	542,085
	PV Modules and Associated Infrastructure	800	MW AC	1,148,876.19	919,100,952
	Battery Energy Storage System (BESS) and Associated Infrastructure	352	No	742,407.72	261,327,518
	Electrical Collection System, Substations and Control Room	3	No	10,485,329.21	31,455,988
	Transmission Line Infrastructure Connecting the Project Substations to the Dinawan Substation	8	km	1,204,691.36	9,758,000
	Temporary Works	1	item	14,800,000.00	14,800,000
	Operations and Maintenance (O&M) Infrastructure	1	item		Incl.
	Client Project Management	1	item		Excl.
	Construction Management Supervision & Coordination	1	item		Incl.
	As- Builts, Training and Manuals, Maintenance	1	item		Incl.
	Engineering and Commissioning	1	item		Incl.
	Maintenance	1	item		Excl.
	Decommissioning and Rehabilitation	1	item		Excl.
	Overheads & Margin	1	item		Incl.
	Total Construction Cost	**800**	**MW AC**	**1,546,230.68**	**1,236,984,542**
	Escalation - 3.5% p.a (Project construction is expected to commence in 2025, The project is expected to be commissioned in 2026. Assumed midpoint of construction May 2025)	1	item		68,549,560
	Contingency - 3%	1	item		37,109,536
	Professional Fees - 10%	1	item		5,655,607
	Authority Fees	1	item		Excl.
	Land cost	1	item		Excl.
	Client Fees	1	item		Excl.
	GST	1	item		Excl.
	Total Project Cost	**800**	**MW AC**	**1,685,374.06**	**1,348,299,246**

Project: 23290 Dinawan Energy Hub – Solar Farm **Details:** Capital Investment Value Estimate

Building:

Code	Description	Quantity	Unit	Rate	Subtotal	Total
Demolition and Site Preparation						
	Demolition					
	Demolition	1	item			Excl.
	Site Preparation					
	Project area is approximately 3,800 ha		Note			Noted
	Development footprint is approximately 2,500 ha		Note			Noted
	Development footprint area could actually support 1,000MW. Whilst the EIS assesses a full project footprint of 2500ha this is a conservative assumption. The 800MW project would likely only require 2,000ha		Note			Noted
	Site preparation is covered in Balance of Plant item in Beon Energy Solutions price proposal.		Note			Noted
	Site clearance for 800MW panels	2,000	ha			Incl.
	Bulk Earthworks					
	Assumed no contamination or excavated material removed from site		Note			Noted
	Balance cut & fill in other than rock average 200mm deep		Note			Noted
	Minimal earthworks are expected- ie the full site would note require cut and fill levelling, and site preparation would predominantly involve slashing. Nominate 10% of the site requiring earthworks		Note			Noted
	Bulk earthworks is covered in Balance of Plant item in Beon Energy Solutions price proposal.		Note			Noted
	Allow for balanced cut & fill to developed surfaces (as above) 200mm deep, 10% of the site clearance area	40,000	m3			Incl.
	Gravel Borrow Pit					
	Potential use of gravel pit referred to EIS report		Note			Noted
	Gravel borrow pit incl. processing plant, sediment basin and associated tracks	1	item			Excl.
	Services Diversions					
	Services diversions	1	item			Excl.
	Erosion Fence					
	Silt fence to one side of rivers / streams	1	item			Excl.
	New Four-way Intersection on Kidman Way					
	No road widening to intersection approach		Note			Noted
	Site clearance	2,353	m2	5.00	11,763	11,763
	Tree removal	1	item			Excl.
	Excavation for roadway construction - 300mm box out	678	m3	35.00	23,730	23,730

Project: 23290 Dinawan Energy Hub - Solar Farm **Details:** Capital Investment Value Estimate
Building:

Code	Description	Quantity	Unit	Rate	Subtotal	Total
Demolition and Site Preparation						*(Continued)*
	Excavated material disposed and spread on site	678	m3	15.00	10,170	10,170
	Retaining walls / fill to road widening at intersection	1	item			Excl.
	Asphalt road	2,353	m2	90.00	211,770	211,770
	Signs and road marking	1	item	10,000.00	10,000	10,000
	Culvert type animal crossings	1	item			Excl.
	Drainage swales to curved new road alignment at intersection	200	m	50.00	10,000	10,000
	Signalised intersection	1	item			Excl.
	Sub-Total	*2,353*	*m2*	*117.91*	*277,433*	*277,433*
	Upgrade to the Intersection of Bundure Road.					
	No road widening to intersection approach		Note			Noted
	Site clearance	2,224	m2	5.00	11,121	11,121
	Tree removal	1	item			Excl.
	Excavation for roadway construction - 300mm box out	667	m3	35.00	23,352	23,352
	Excavated material disposed and spread on site	667	m3	15.00	10,008	10,008
	Retaining walls / fill to road widening at intersection	1	item			Excl.
	Asphalt road	2,224	m2	90.00	200,172	200,172
	Signs and road marking	1	item	10,000.00	10,000	10,000
	Culvert type animal crossings	1	item			Excl.
	Drainage swales to curved new road alignment at intersection	200	m	50.00	10,000	10,000
	Signalised intersection	1	item			Excl.
	Sub-Total	*2,224*	*m2*	*118.99*	*264,652*	*264,652*
	Internal Bridge Upgrade					
	Upgrading the bridge across the Coleambally Irrigation Channel (if required)	1	item			Excl.
	Construction Fence					
	Assumed permanent fence will be installed prior to construction commencing		Note			Noted
	Permanent fence is covered in Balance of Plant item in Beon Energy Solutions price proposal.		Note			Noted
	Installation of construction fence along the perimeter of development of footprint	20,000	m			Incl.
	Demolition and Site Preparation				**542,085**	**542,085**
PV Modules and Associated Infrastructure						
	Civil Works - PV Plant					
	Foundations					

Project: 23290 Dinawan Energy Hub – Solar Farm **Details:** Capital Investment Value Estimate

Building:

Code	Description	Quantity	Unit	Rate	Subtotal	Total
PV Modules and Associated Infrastructure						*(Continued)*
	Rows of piles will be driven into the ground, depending on the geotechnical conditions, and the supporting racking framework will be mounted on top. Pre-drilling and/or cementing of foundations will be avoided, and will only be used where required by geotechnical conditions		Note			Noted
	Assumed PV structure pole is included in the pricing from Beon Energy Solutions		Note			Noted
	Structure Poles	1	Item			Incl.
	Main Equipment - PV Plant					
	Please see latest solar pricing from Beon Energy Solutions excel sheet in folder "800MW Solar Farms (October 2023)". Note that his price is for MWp. DC/AC ratio for pricing would be 1.2 which would give AU$1.149/watt AC. Also, this price does not include onsite substation and HV overhead line connection however, does include MV (33kV) reticulation system		Note			Noted
	Modules (CIF)	800	MW AC	266,667	213,333,334	213,333,334
	Tracker (CIF)	800	MW AC	142,857	114,285,714	114,285,714
	PCU (FOB)	800	MW AC	144,000	115,200,000	115,200,000
	Balance Of Plant (BOP)	800	MW AC	595,352	476,281,904	476,281,904
	Sub-Total	*800*	*MW AC*	*1,148,876.19*	*919,100,952*	*919,100,952*
	PV Modules and Associated Infrastructure				**919,100,952**	**919,100,952**
Battery Energy Storage System (BESS) and Associated Infrastructure						
	Battery Energy Storage System - BESS					
	The BESS will have a capacity of up to approximately 300 MW (AC or DC coupled) and will have provision for up to 2 hours of storage (600 MWh).		Note			Noted
	Batteries – most likely a lithium-ion technology		Note			Noted
	Bi-directional inverters to convert DC current to AC current (when exporting electricity) and vice versa (when importing electricity)		Note			Noted
	Skid-mounted transformers adjacent to each inverter		Note			Noted
	Heating ventilation air conditioning (HVACs) is required		Note			Noted
	Fire protection (BESS will have an active gas-based fire protection system with thermal sensors and smoke/gas detectors connected to a fire control panel)		Note			Noted
	Battery modules are installed in racks, then the racks are wired together in strings, and strings of batteries are connected to the inverter stations.		Note			Noted
	The batteries will be housed in self-contained steel enclosures resembling shipping containers, or within a building resembling a large industrial shed		Note			Noted
	We have assumed that shipping containers will be selected		Note			Noted

Project: 23290 Dinawan Energy Hub - Solar Farm **Details:** Capital Investment Value Estimate

Building:

Code	Description	Quantity	Unit	Rate	Subtotal	Total
Battery Energy Storage System (BESS) and Associated Infrastructure						*(Continued)*
	Battery Energy Storage System - BESS					
	Prices are based on Dinawan BESS Capex_V003		Note			Noted
	$1 AUD = $0.63USD		Note			Noted
	Proposal for batery modules supply (AUD) (352 No)	1	item	174,937,429.33	174,937,429	174,937,429
	Proposal for inverter supply (AUD) (88 No)	1	item	44,193,952.00	44,193,952	44,193,952
	Power Plant Manager supply (PPM) (1 No)	1	item	100,197.00	100,197	100,197
	Freight (4% for BESS and PPM, 5% for Inverters)	1	item	9,211,202.64	9,211,203	9,211,203
	Commissioning and Installation - 15%	1	item	32,884,736.70	32,884,737	32,884,737
	Spare Parts	1	item			Excl.
	Controls and monitoring (Redundant plant level controls/BESS SCADA)	1	item			Excl.
	Sub-Total	*300*	*MW*	*871,091.73*	*261,327,518*	*261,327,518*
	Battery Energy Storage					
	Industrial shed	1	item			Excl.
	Shipping type containers	1	item			Incl.
	Heating ventilation air conditioning (HVACs)	1	item			Incl.
	Fire protection with active gas-based fire protection system with thermal sensors and smoke/gas detectors connected to a fire control panel	1	item			Incl.
	Battery Energy Storage System (BESS) and Associated Infrastructure				**261,327,518**	**261,327,518**
Electrical Collection System, Substations and Control Room						
	Electrical Collection System					
	Underground cables will be installed at a depth of at least 600 millimetres (mm) below ground level.		Note			Noted
	Power poles carrying 33-kV lines within the development footprint are expected to be between 10–20 m tall.		Note			Noted
	The eastern and western sections of PV module arrays will be connected via an underground or overhead line crossing Kidman Way		Note			Noted
	Lines may also need to cross Coleambally Irrigation Channel, and the proposed locations are shown in Figure 3.1 in the EIS; however, it is not known whether these will be overhead or installed by horizontal directional drilling		Note			Noted
	33kv Overhead Transmission Line					
	Cost of 33kv steel pole overhead transmission lines is included within item 'BoP' of the pricing provided by Beon Energy Solutions for Main Equipment - PV Plant .		Note			Noted
	33kv steel pole overhead transmission lines	1	item			Incl.

Project: 23290 Dinawan Energy Hub – Solar Farm **Details:** Capital Investment Value Estimate

Building:

Code	Description	Quantity	Unit	Rate	Subtotal	Total
Electrical Collection System, Substations and Control Room						*(Continued)*
	33kv Underground Cabling					
	Cost of underground 33kv cabling is within item 'BoP' of the pricing provided by Beon Energy Solutions for Main Equipment - PV Plant .		Note			Noted
	33kv underground cables. Rate includes trench excavation, electrical cabling, conduits and backfilling.	1	item			Incl.
	Other					
	Cost of other cabling is included in 'Main Equipment - PV Plant'.		Note			Noted
	Cabling fastened to structure	1	m			Incl.
	Assumed Trenching to cross Coleambally Irrigation Channel is included in pricing provided by Beon Energy Solutions.		Note			Noted
	Trenching to cross Coleambally Irrigation Channel, length n.e. 10m	1	item	0.00		Incl.
	On-Site Substations					
	There would be up to three on-site substations that would convert the electricity generated from 33 kV to 330kV or 500-kV for export to the Dinawan Substation		Note			Noted
	The substations would each contain a 33 kV – 330 kV transformer along with the necessary switchgear, located in an adjacent switchyard.		Note			Noted
	The substation will have lightning protection		Note			Noted
	Electrical Substation					
	Allow 33 kV switchgear	3	No	55,000.00	165,000	165,000
	Allow power transformer - 330.0 kV/33.0 kV, 384 MVA	3	No	5,600,000.00	16,800,000	16,800,000
	Allow 330kV Outdoor switchgear	3	No	1,550,000.00	4,650,000	4,650,000
	Allow for 315 kVa transformer	1	No	275,000.00	275,000	275,000
	Allow for 315kVa diesel generator	1	No	185,000.00	185,000	185,000
	Spill retention tank	1	No	250,000.00	250,000	250,000
	Ancillary equipment	1	item	750,000.00	750,000	750,000
	Installation of items above - 20%	1	item	4,615,000.00	4,615,000	4,615,000
	Sub Total	*3*	*No*	*9,230,000.00*	*27,690,000*	*27,690,000*
	Electrical Switchyard					
	Control building - size assumed	40	m2	2,100.00	84,000	84,000
	33 kV switchroom- size assumed	75	m2	3,800.00	285,000	285,000
	330 kV switchyard estimate	1	No	3,150,000.00	3,150,000	3,150,000

Project: 23290 Dinawan Energy Hub - Solar Farm **Details:** Capital Investment Value Estimate
Building:

Code	Description	Quantity	Unit	Rate	Subtotal	Total
Electrical Collection System, Substations and Control Room						*(Continued)*
	Sub Total	*115*	*m2*	*30,600.00*	*3,519,000*	*3,519,000*
	Security and Control					
	2m high chain link fence	714	m	85.00	60,688	60,688
	Access gate	2	No	1,500.00	3,000	3,000
	Video camera foundation	3	No	450.00	1,350	1,350
	Light pole foundation	7	No	350.00	2,450	2,450
	Sub Total	*1*	*item*	*67,487.62*	*67,488*	*67,488*
	Monitoring system					
	Allowance for monitoring system (SCADA)	1	item	100,000.00	100,000	100,000
	Security and Control System					
	Allowance for fire system	3	item	7,500.00	22,500	22,500
	Allowance for surveillance system	3	item	4,000.00	12,000	12,000
	Allowance for lightning system	3	item	15,000.00	45,000	45,000
	Sub Total	*3*	*item*	*26,500.00*	*79,500*	*79,500*
	Electrical Collection System, Substations and Control Room				**31,455,988**	**31,455,988**
Transmission Line Infrastructure Connecting the Project Substations to the Dinawan Substation						
	Transmission Line Infrastructure Connecting the Project Substations to the Dinawan Substation					
	An overhead 330-kV or 500-kV transmission line will connect the on-site substations to the Dinawan Substation.		Note			Noted
	The part of the overhead 330-kV or 500-kV transmission line within the development footprint is considered as part of this application		Note			Noted
	The transmission towers are expected to be between 40–80 m tall. The distance between transmission towers will be dependent on the type of structure used. The indicative grid connection corridor is provided on Figure 1.1.		Note			Noted
	Measured from Traffic Management Impact Project Layout (Maroon colour on legend)		Note			Noted
	330kv Overhead Transmission Line					
	The overhead transmission line connecting internal substations to the Transgrid substation would be 330kV up to 8,100m length		Note			Noted
	Allowance for 330kv steel pole overhead transmission lines	8,100	m	1,180.00	9,558,000	9,558,000
	Allowance for connection to proposed transmission line and Network infrastrcture	1	item	200,000.00	200,000	200,000
	Transmission Line Infrastructure Connecting the Project Substations to the Dinawan Substation				**9,758,000**	**9,758,000**

Project: 23290 Dinawan Energy Hub - Solar Farm **Details:** Capital Investment Value Estimate

Building:

Code	Description	Quantity	Unit	Rate	Subtotal	Total
Temporary Works						
	Temporary works including lay down areas, construction compound, parking, onsite sewage system and construction facilities (including diesel generator) is covered in Balance of Plant item in Beon Energy Solutions price proposal.		Note			Noted
	Workers accommodation is excluded in Beon Energy Solutions price proposal.		Note			Noted
	Construction Compounds					
	Fencing for construction compound	1,808	m			Incl.
	Site office building incl. toilets and lunchroom	1,200	m2			Incl.
	Laydown areas	1	item			Incl.
	Construction materials storage	1	item			Incl.
	Storage and parking areas	1	item			Incl.
	Concrete Batching Plant					
	Concrete Batching Plant	1	item			Excl.
	Workers Accommodation Compound					
	Assumed 4 beds per pod		Note			Noted
	400 bed accommodation camp is proposed inclusive accommodation units, car parking and basic amenities		Note			Noted
	Workers Accommodation Compound as above	400	bed	37,000.00	14,800,000	14,800,000
	Water Supply					
	Construction water demand is 105ML and water demand during operations is anticipated to be negligible.		Note			Noted
	Water will be either transported to site via water trucks or from existing bores within the project area if groundwater is of suitable quality and an acceptable licensing pathway is identified.		Note			Noted
	Allow for 300,000 L water tank	1	item			Incl.
	Allow for refurbishment of existing water bore	1	item			Incl.
	Allow for water supply pipe including trenching and backfill	1	item			Incl.
	On-site Sewerage Treatment Infrastructure					
	On-site sewerage treatment infrastructure will be required during construction and operations.					
	Sewer pipe including trenching and backfill	1	item			Incl.
	On-site sewage management system for amenities facilities	1	item			Incl.
	Elelctricity Supply					

Project: 23290 Dinawan Energy Hub - Solar Farm **Details:** Capital Investment Value Estimate

Building:

Code	Description	Quantity	Unit	Rate	Subtotal	Total
Temporary Works						*(Continued)*
	Electricity will be generated on-site using solar panels and batteries. Electricity may also be sourced via the local distribution network, where available and via diesel generation where access to the grid is unavailable.		Note			Noted
	Allow for electrical supply	1	item			Incl.
	Allow for diesel generator	1	item			Incl.
	Temporary Works				**14,800,000**	**14,800,000**
Operations and Maintenance (O&M) Infrastructure						
	Operations and Maintanance Infrastructure					
	Operations and Maintenance (O&M) Infrastructure, Procurement and installation perimeter security fence, Revegetation of construction disturbed areas, Procurement and installation of met stations, security cameras and SCADA system is covered in Balance of Plant item in Beon Energy Solutions price proposal.		Note			Noted
	Control Room					
	Control room building is included in substation		Note			Noted
	Control Room Building					Incl.
	Site offices and amenities					
	Allowance for Colorbond clad steel framed maintenance and service building including base building fitout complete	1	item			Incl.
	Equipment and maintenance sheds					
	Allowance for Colorbond clad steel framed maintenance and service building including base building fitout complete	1	item			Incl.
	Hardstands					
	Allow for 300 thick crushed gravel hardstand bases to substation, BESS, O&M buildings including drainage	1	item			Incl.
	Security fencing					
	Security fencing around the perimeter of the solar farm and high voltage electrical equipment such as the BESS and on-site substation		Note			Noted
	2.4m high steel Security fencing	20,000	m			Incl.
	Single pedestrian gate	1	item			Incl.
	Double vehicle gate	1	item			Incl.
	Internal tracks					
	All internal access tracks will be unsealed		Note			Noted
	Perimeter track up to 6m wide. Allow for 300 thick gravel access roads	1	item			Incl.
	Internal access tracks between 2m and 5m wide	1	item			Incl.

Project: 23290 Dinawan Energy Hub - Solar Farm **Details:** Capital Investment Value Estimate
Building:

Code	Description	Quantity	Unit	Rate	Subtotal	Total
Operations and Maintenance (O&M) Infrastructure						*(Continued)*
	500 wide x 200 deep open drain	1	item			Incl.
	Signage					
	Signage to facilities	1	item			Incl.
	Lighting, security cameras and weather stations					
	Security cameras within BESS and O&M facility as a minimum during operations.		Note			Noted
	Security cameras	1	item			Incl.
	Weather Station	1	item			Incl.
	Remote terminal units	1	item			Incl.
	Monitoring system (SCADA)	1	item			Incl.
	Microwave barriers, quantity assumed	1	item			Incl.
	Microphone cable (perimeter fence)	1	item			Incl.
	Landscaping					
	Revegetation of disturbed areas	1	item			Incl.
	Operations and Maintenance (O&M) Infrastructure				**0**	**0**
Construction Management Supervision & Coordination						
	Construction Management Supervision & Coordination					
	Construction Management Supervision & Coordination is covered in Balance of Plant item in Beon Energy Solutions price proposal.		Note			Noted
	Construction Management Supervision & Coordination	1	item			Incl.
	Construction Management Supervision & Coordination				**0**	**0**
Engineering and Commissioning						
	Engineering and Commissioning					
	Engineering and Commissioning is covered in Balance of Plant item in Beon Energy Solutions price proposal.		Note			Noted
	Engineering and Commissioning	1	item			Incl.
	Engineering and Commissioning				**0**	**0**
Professional Fees - 10%						
	Professional Fees on BESS and Solar Equipment are included in the supplied fees		Note			Noted
	Professional fees on BESS and solar equipment	1	item			Incl.
	Comissioning on BESS and solar equipment	1	item			Incl.
	Professional fees on other items including site preparation, temporary works, civil services and services	1	item	5,655,607	5,655,607	5,655,607
	Professional Fees - 10%				**5,655,607**	**5,655,607**