



30 October 2022

Stephen Archer
Development Manager
Lightsource bp

Dear Stephen

GOULBURN RIVER SOLAR FARM AND BATTERY ENERGY STORAGE SYSTEM – CIV ESTIMATE

As requested WT Partnership has prepared a Capital Investment Value (CIV) estimate for the Goulburn River Solar PV Farm and Battery Energy Storage System (the Project) in accordance with the definition contained in the *State Environmental Planning Policy (Planning Systems) 2021*, and as required by the *Planning Secretary's Environmental Assessment Requirements, issued 23 December 2021*. Under the policy, the CIV has the meaning as in Clause 3 of the *Environmental Planning Assessment Regulation 2000*;

A 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 7.1 or 7.2 of the 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* of the Commonwealth).

Based upon the above definition we estimate the CIV for the Project to be \$878,760,000 (excl GST), as tabled below. We confirm that this information is accurate as of the date of this report.

Should you require any further information or wish to discuss any aspect of the attached please do not hesitate to contact us.

Yours faithfully

DAVID QUINCEY
MRICS MACostE
Director – Engineering Services

WT

SUMMARY OF ESTIMATE

ITEM DESCRIPTION	WTP ASSESSMENT
<u>Direct cost</u>	
Site clearance and general works	\$ 10,108,090
PV – Civil works	\$ 27,400,350
PV – Electrical works	\$ 543,915,765
BESS Electrical works	\$ 140,100,000.
TX – Substation	\$ 7,582,281
Transmission line	\$ 5,000,000
Testing & commissioning	\$ 11,011,601
<u>Indirect Costs</u>	
Preliminaries @ 7%	\$ 52,158,281
Design costs @ 0.5%	\$ 3,725,592
Contractors OH&P @ 4%	\$ 32,040,087
Contract Value	\$ 833,042,263
Consultant Costs @ 0.5%	\$ 4,165,211
Contingency @ 5%	\$ 41,652,113
Escalation	Excl.
TOTAL PROJECT COST	\$ 878,860,000

Note: the above figures may not sum exactly due to rounding



GOULBURN RIVER PV FARM & BESS

CAPITAL INVESTMENT VALUE REPORT –
REV 1

30 October 2022

CONTENTS

1	CONTACT	1
2	SUMMARY OF ESTIMATED COST	2
3	SCHEDULE OF INFORMATION USED	3
4	SCOPE OF WORKS	3
5	METHODOLOGY	3
6	SCHEDULE OF EXCLUSIONS	4
7	CONCLUSION	4

APPENDICES

APPENDIX A

APPENDIX A – DETAIL OF ESTIMATE

1 CONTACT

DETAIL	DESCRIPTION
NAME OF COMPANY / TRADING NAME	WTP Australia Pty Ltd
ABN	69 605 212 182
NAME OF REPRESENTATIVE	David Quincey
POSITION	Director – Engineering Services
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DOCUMENT STATUS	NAME	DATE
PREPARED BY:	T Robertson	19 October 2022
REVIEWED BY:	D Quincey	19 October 2022
e-SIGNATURE APPROVED		

REVISION NO.	REVISION DATE	DRAFT / FINAL
Rev 0	19 October 2022	Draft for review
Rev 1	30 October 2022	Final Draft

2 SUMMARY OF ESTIMATED COST

This Capital Investment Value (CIV) estimate has been prepared independently by WT and has been assessed as **\$ 878,860,000** (ex-GST). The breakdown of this value is tabled below, with a further detailed breakdown of cost in Appendix 1.

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3 SCHEDULE OF INFORMATION USED

3.1 INFORMATION RECEIVED

The following documents have been used in the preparation of the estimate:

DOCUMENT TITLE
AUS_Goulburn River Solar_LP1-IDL_03
GLBSF-PYD-SKT-100001_SLD_Rev 2
GLBSF-PYD-SKT-100101_GA_Rev 2 (1)

These documents have been reviewed against similar scopes in WT's library, and with the experience of the WT estimators and peer reviewers to validate their accuracy and completeness.

4 SCOPE OF WORKS

WT understand that Lightsource bp are developing a solar PV farm at Goulburn River, located near Merriwa NSW. This comprises a 550 MW solar PV and 280 MW / 540 MWh BESS, connected at 500 kV.

This project is approaching the submission of Environmental Impact Studies (EIS) under the banner of a State Significant Development. A requirement for the EIS submission is that a Capital Investment Valuation estimate (CIV), prepared in accordance with applicable Planning Circulars and guidance notes. Lightsource bp have invited WT to provide an independent CIV estimate for this work.

This report assesses what WT independently believe to be a fair and reasonable cost for the construction of the Photovoltaic Solar facility at Goulburn River.

5 METHODOLOGY

WT were provided with the current high level scope document as listed above. WT used these documents to ascertain quantities and scope intent where possible. WT were also able to call upon our vast understanding and knowledge of these types of projects, drawn from our own database and experience, to provide the high level cost estimate within this report. This knowledge enabled WT to make various assumptions and judgement calls to "fill in the gaps" where design detail has not yet been provided. WT are also able to benchmark our estimate against other recent projects of a similar nature, in order to cross check our high level assessment is in the right ballpark for this type of facility.

Materials and equipment rates have been sourced from recent cost data received and/ or benchmarked against our in house cost data where required. Plant and labour costs have been assessed using published norms and in house data.

WT are active in monitoring current market conditions and trends and have factored this into our estimate, noting current exponential cost rises of certain materials, labour shortages and lead in times/ delivery of plant and materials.

6 SCHEDULE OF EXCLUSIONS

The following items have been excluded from the estimate:

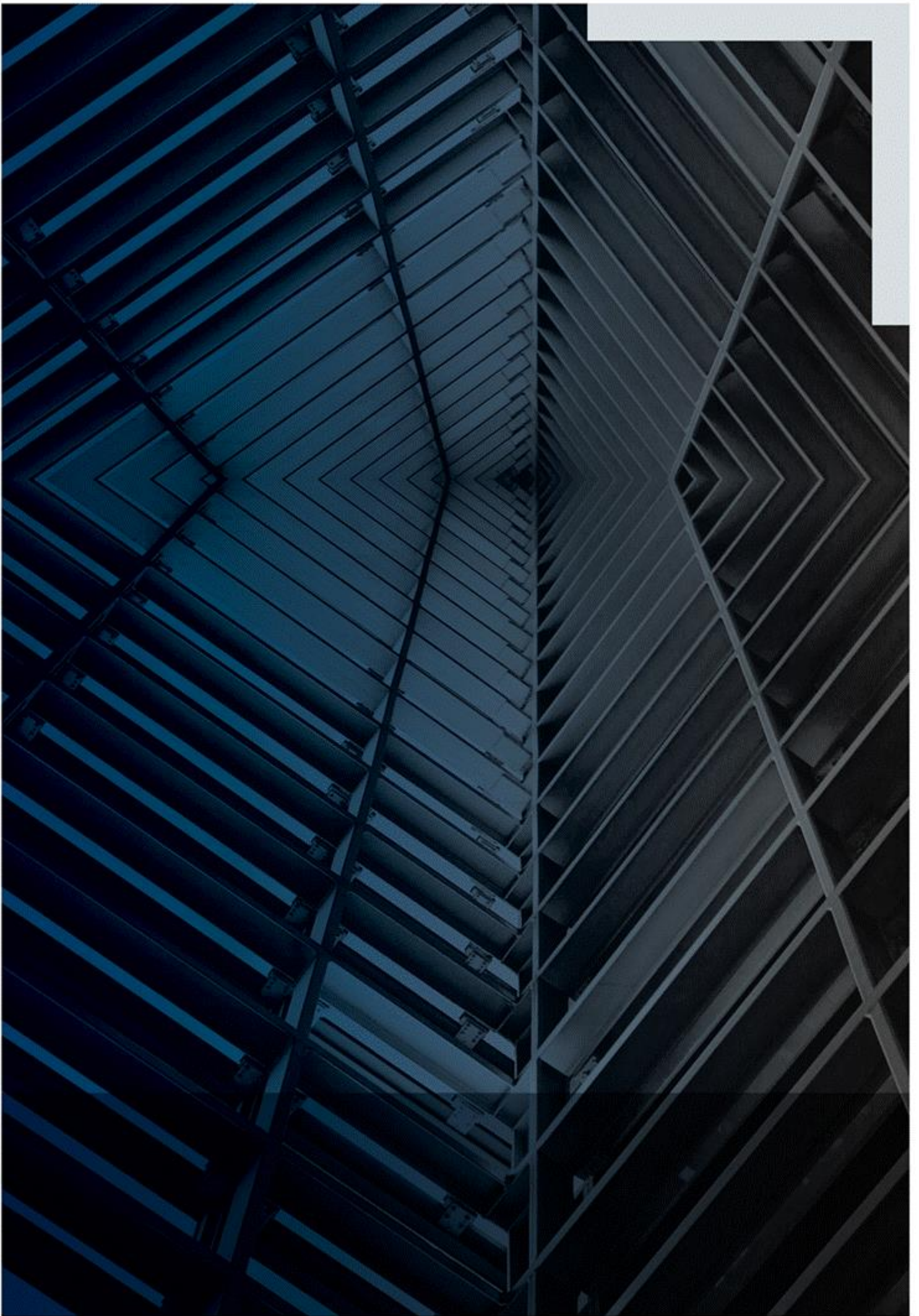
- Values associated with a voluntary agreement with the Government
- Escalation (Estimate based on present day value)
- GST
- Land Costs
- Planning Fees

7 CONCLUSION

WT assessed the information provided and reviewed the scope in order to evaluate the Capital Investment Value estimate.

The development of the cost is an ongoing process and will need to be further refined during the preliminary design and pre-tender stage in order to develop more detailed project specific costing based on the further design and project development.

Taking into considerations the limitations stated above, the Capital Investment Value of the proposed Project has been determined to be **\$ 878,860,000** (excluding GST).





GOULBURN RIVER SOLAR FARM

CIV ESTIMATE FOR PV & BESS - REV3



GOULBURN RIVER SOLAR FARM



Estimate Summary

REF.	DESCRIPTION	QUANTITY	UNIT	RATE	TOTAL
	Goulburn River Solar Farm - CIV Estimate				
	30/10/2022				
	Rev3				
	SOLAR INFRASTRUCTURE WORKS				
	SITE CLEARANCE AND GENERAL WORKS				10,108,087
	PV – CIVIL WORKS				27,400,350
	PV – ELECTRICAL WORKS				543,915,765
	BESS ELECTRICAL WORKS				140,100,000
	TX – SUBSTATION				7,582,500
	TX – TRANSMISSION LINE				5,000,000
	TEST & COMMISSION				11,011,601
1/A	Indirects /Prelims	7.0	%		52,158,281
1/B	Design	0.5	%		3,725,592
1/C	Contractor OH&P	4.0	%		32,040,087
	Contract value				833,042,263
1/D	Consultant Costs	0.5	%		4,165,211
1/E	Contingency	5	%		41,652,113
	Escalation to mid point construction				Excl
	ESTIMATE COST				878,860,000
	Total Cost				878,859,587

GOULBURN RIVER SOLAR FARM



Estimate Details

REF.	DESCRIPTION	QUANTITY	UNIT	RATE	TOTAL
<u>SITE CLEARANCE AND GENERAL WORKS</u>					
SITE CLEARANCE AND GENERAL					
2/A	Site clearance	868	ha	3,000.00	2,604,004
2/B	Site levelling	868	ha	incl	incl
2/C	Connection to public road		nr	25,000.00	0
2/D	Perimeter road, 6m wide		m	216.00	0
2/E	Internal road, 6m wide		m	216.00	0
2/F	Road for substation access		m	216.00	0
2/G	Perimeter security fence, 2m high	29,323	m	250.00	7,330,750
2/H	Gates in fence	3	nr	15,000.00	45,000
2/J	Landscaping – allowance		item	50,000.00	0
2/K	Lighting to road to substation	500	m	166.67	83,333
2/L	CCTV of access points etc	6	nr	7,500.00	45,000
2/M	EACS		item	200,000.00	Excl
Total - SITE CLEARANCE AND GENERAL WORKS					10,108,087
<u>PV - CIVIL WORKS</u>					
PV – CIVIL WORKS					
2/N	Trenching for CSR, along access roads	49,370	m	555.00	27,400,350
Total - PV - CIVIL WORKS					27,400,350
<u>PV - ELECTRICAL WORKS</u>					
PV – ELECTRICAL WORKS					
2/P	PV modules, 540W Bifacial	1,026,256	nr	210.25	215,770,324
2/Q	Tracker array framework c/w motor	12,415	nr	6,880.00	85,415,200
2/R	Array combiner box	1,035	nr	5,000.00	5,172,917
2/S	Twin–end inverter station	140	nr	538,278.68	75,359,015
2/T	10mm2 DI cable, PV to array box	21,991,200	m	4.15	91,263,480
2/U	300mm2 DI cable, array box to inverter	78,000	m	44.38	3,461,250
2/V	3c 70mm2 33kV cable, inverter to s/stn	700,000	m	94.00	65,800,000
2/W	Fibreoptic	83,679	m	20.00	1,673,580
Total - PV - ELECTRICAL WORKS					543,915,765
<u>BESS ELECTRICAL WORKS</u>					
2/X	BESS (280MW for 2hrs)	5.6	MWh	25,000,000.00	140,000,000
2/Y	500kv Connection	1	item	100,000.00	100,000
Total - BESS ELECTRICAL WORKS					140,100,000
<u>TX - SUBSTATION</u>					

GOULBURN RIVER SOLAR FARM



Estimate Details

REF.	DESCRIPTION	QUANTITY	UNIT	RATE	TOTAL
3/A	33kV switchgear, GIS	2	item	235,000.00	470,000
3/B	Inverter & TX for DC battery system	1	item	190,000.00	190,000
3/C	33/500kV TX	2	nr	1,500,000.00	3,000,000
3/D	Aux TX	2	nr	12,500.00	25,000
3/E	Earthing	1	item	20,000.00	20,000
3/F	Protection, monitoring, control	1	item	750,000.00	750,000
3/G	33kV CT	6	nr	20,000.00	120,000
3/H	33kV VT	6	nr	20,000.00	120,000
3/J	33kV SA	6	nr	20,000.00	120,000
3/K	LV systems, DC batteries, UPS	1	item	500,000.00	500,000
3/L	33kV conductors	1	item	150,000.00	150,000
3/M	TX bund, oil trap, blast walls etc	2	item	75,000.00	150,000
3/N	Yard prep; clear, gravel	500	m2	25.00	12,500
3/P	MV switch building, cable basement	100	m2	6,000.00	600,000
3/Q	MV fitout, cable supports, aux systems	100	m2	2,000.00	200,000
3/R	Control room building	200	m2	4,000.00	800,000
3/S	Security fencing	300	m	400.00	120,000
3/T	Gates	6	nr	10,000.00	60,000
3/U	Comms link	1	item	25,000.00	25,000
3/V	Power supply to buildings	1	item	50,000.00	50,000
3/W	Roads, civil works	1	item	20,000.00	20,000
3/X	45k water tank, conc base	2	nr	35,000.00	70,000
3/Y	Rainwater collection & treatment	1	nr	10,000.00	10,000
Total - TX - SUBSTATION					7,582,500
<u>TX - TRANSMISSION LINE</u>					
TRANSMISSION LINE					
3/Z	500kV line and connection to existing	1	nr	5,000,000.00	5,000,000
Total - TX - TRANSMISSION LINE					5,000,000