Table of Contents

Contents

Executive Summary

Glossary

Abbreviations

1	Introd	luction	1
	1.1	Proposal overview	1
	1.2	Proposal objectives	3
	1.3	Site description	4
	1.4	About the applicant	10
	1.5	Delivery of the WSERRC	13
	1.6	Assessment process	13
	1.7	Document purpose and structure	15
2	Strategic context		17
	2.1	Introduction to Energy from Waste	17
	2.2	EfW in the waste hierarchy	18
	2.3	Global EfW context	20
	2.4	Australian EfW context	21
	2.5	Strategic policy	22
	2.6	Consideration of alternatives	35
3	Proposal description		61
	3.1	Overview	61
	3.2	Construction	67
	3.3	Site layout and design	82
	3.4	Operation	91
	3.5	Ancillary equipment and Balance of Plant	119
	3.6	Fire and emergency procedures	119
4	Statutory context		121
	4.1	Introduction	121
	4.2	Permissibility	121
	4.3	Assessment pathway and consent authority	122
	4.4	Relevant NSW legislation	123
	4.5	Relevant Commonwealth legislation	136
	4.6	Matters for consideration	140

Arup Page xxxvi

5	EfW p	olicy	159
	5.1	Overview	159
	5.2	NSW EfW policy and requirements	161
	5.3	Policy context	172
	5.4	Proposed feedstock strategy	173
	5.5	Feedstock modelling	175
	5.6	Feedstock eligibility and compliance with the NSW EfW policy	177
	5.7	Accommodating variability	186
	5.8	Waste acceptance protocol	188
	5.9	Reference facilities	193
	5.10	Emissions to air	202
	5.11	Management of process residuals	206
6	Engagement		209
	6.1	Community and stakeholder engagement strategy	210
	6.2	Engagement activities and tools	213
	6.3	Issues raised during consultation	217
	6.4	Ongoing and future consultation	246
7	Environmental assessment scope		248
	7.1	Overview	248
	7.2	Existing environment	248
	7.3	Scoping process	251
	7.4	Environmental impact assessment: overview	266
8	Air quality and odour		267
	8.1	Introduction	267
	8.2	Existing environment	271
	8.3	Assessment	275
	8.4	Mitigation	291
9	Human health risk		294
	9.1	Introduction	294
	9.2	Existing environment	294
	9.3	Assessment	299
	9.4	Mitigation	309
10	Waste management		310
	10.1	Introduction	310
	10.2	Existing environment	310
	10.3	Assessment	311
	10.4	Mitigation	319

Arup Page xxxvii

11	Soils a	ndwater	320
	11.1	Introduction	320
	11.2	Existing environment	321
	11.3	Assessment	329
	11.4	Mitigation	334
12	Hydrology and flooding		335
	12.1	Introduction	335
	12.2	Existing environment	336
	12.3	Assessment	339
	12.4	Mitigation	348
13	Noise and vibration		350
	13.1	Introduction	350
	13.2	Existing environment	350
	13.3	Assessment	353
	13.4	Mitigation	361
14	Hazard and risk		362
	14.1	Introduction	362
	14.2	Existing environment	364
	14.3	Assessment of potentially hazardous development	364
	14.4	Assessment of potentially offensive industry	373
	14.5	SEPP 33 – matters for consideration	376
	14.6	Mitigation	377
15	Traffic and transport		379
	15.1	Introduction	379
	15.2	Existing environment	379
	15.3	Assessment	382
	15.4	Mitigation	393
16	Landscape and visual		394
	16.1	Introduction	394
	16.2	Existing environment	395
	16.3	Assessment	396
	16.4	Mitigation	413
17	Social		414
	17.1	Introduction	414
	17.2	Existing environment	415
	17.3	Assessment	419
	17.4	Mitigation	434
	17.5	Residual impact assessment	435

Arup Page xxxviii

18	Green	house gas and energy efficiency	440
	18.1	Introduction	440
	18.2	Existing environment	441
	18.3	Assessment	443
	18.4	Mitigation	447
19	Heritage		450
	19.1	Introduction	450
	19.2	Existing environment	451
	19.3	Assessment	454
	19.4	Mitigation	455
20	Utilities and services		456
	20.1	Introduction	456
	20.2	Existing environment	456
	20.3	Assessment	464
	20.4	Mitigation	470
21	Biodiversity		472
	21.1	Introduction	472
	21.2	Existing environment	472
	21.3	Assessment	481
	21.4	Mitigation	491
22	Related development		493
	22.1	What is related development	493
	22.2	Processing facility	496
	22.3	IBA processing facility	501
	22.4	Electrical connection to the high-voltage network	504
	22.5	Water and sewer connection	509
	22.6	Telecommunications connection	515
	22.7	Site access works	517
23	Cumulative impacts		522
	23.1	Identifying relevant projects	522
	23.2	Cumulative impact assessment	527
24	Summ	ary of management and mitigation measures	536

Arup Page xxxix

25	Evaluation and conclusions		548
	25.1	Proposal need and benefits	548
	25.2	Avoidance and minimisation of impacts	550
	25.3	Engagement	553
	25.4	Objectives of the EP&A Act	553
	25.5	Ecologically sustainable development	556
	25.6	Conclusions	558
26	Referen	ices	560
Append	dices		
Append		cretary's Environmental Assessment Requirements cross	
		chitecture and landscape design strategy report	
	lix C: Dra		
1 1		tement of CIV	
		ndowners consent	
		nmunity and stakeholder engagement report	
Append (VPA)	lix G: Info	ormation relating to the draft Voluntary Planning Agreemen	ıt
Figures	S		
1.1: Pro	posal site	e location	
1.2: Lo	cal contex	κt	
1.3: Pro	posal site	e boundary	
1.4: Exi	isting site	layout	
1.5: Sta	te signific	cant development process	
2.1 Was	ste hierard	ehy	
3.1: Ind	licative tin	meframe of construction stages	
3.2: Ind	licative C	onstruction Site Layout	
3.3: Pro	posed fac	cility layout	
3.4: Ind	licative 31	D facility dimensions	
3.5: Sar	nple imag	ge of MSW	
3.6: Sar	nple imag	ge of C&I waste	
3.7: Fir	ing diagra	am	
3.8: Sch	nematic o	f the EfW operational process	
3.9: Ind	licative W	SERRC energy balance	
3.10: W	aste boile	er system	
3.11: P1	oposed to	reatment system	
		policy requirements and the information sources which information information sources which information	m
5.2: WS	SERRC p	roposed short-term and long-term feedstock strategy Scenar	io 1

Arup Page xl

- 5.3: Resource recovery outcomes for mixed residual waste from a 3-bin GO kerbside collection, illustrating the impact of regulatory change on the application of the NSW EfW policy
- 5.4: Scenario 2 WSERRC proposed short-term and long-term feedstock strategy.
- 5.5: WSERRC and Cleanaway's approach to supporting waste avoidance, reuse and recycling
- 6.1: IAP2s Public Participation Spectrum (IAP2, 2014)
- 7.1: Sensitive receivers
- 8.1: Air quality and odour impact assessment receptors
- 8.2: Annual and seasonal wind roses from CALMET (Cell Ref 5349)
- 11.1: Testing locations
- 11.2: Identified contamination at the proposal site
- 12.1: Existing stormwater features and site water quality test locations
- 12.2: Stormwater management features
- 12.3: Cross-section of proposed overland flow channel (indicative and subject to detailed design)
- 13.1: Sensitive noise receivers
- 15.1: Existing site access and the surrounding road network
- 15.2: Daily traffic profile during construction of the proposal
- 15.3: Daily traffic generation during operation of the proposal
- 15.4: Indicative route for residual waste from the Cleanaway Erskine Park Waste Transfer Station
- 15.5: Route for vehicle access to the site
- 15.6: Traffic routes on site
- 16.1: Landscape character areas 16.2: LCAs for impact assessment
- 16.3: Visual envelope map and representative viewpoints
- 16.4: Viewpoint 3
- 16.5: Viewpoint 3 with proposal
- 16.6: Viewpoint 7
- 16.7: Viewpoint 7 with proposal
- 16.8: Viewpoint 10
- 16.9: Viewpoint 10 with proposal
- 16.10: Modelled overshadowing from the proposal
- 18.1: Projected changes in Sydney Climate
- 20.1: Existing utilities and services
- 20.2: Existing electrical assets
- 20.3: Existing water asset
- 20.4: Existing sewer assets
- 20.5: Existing telecommunication assets
- 21.1: Biodiversity features in the surrounding environment
- 21.2: Mapped vegetation on the proposal site
- 21.3: Proposal impacts to biodiversity values
- 21.4: Proposed vegetation restoration

Arup Page xli

- 22.1: Location of Erskine Park Waste Transfer Station and likely route to the WSERRC
- 22.2: WSERRC electrical connection options
- 22.3: WSERRC water connection
- 22.4: WSERRC sewer connection
- 22.5: WSERRC site access
- 23.1: Major projects surrounding the proposal site

Tables

- 1.1: Entity and site details
- 2.1: Evaluation of strategic waste policies, strategies and plans relevant to this proposal
- 2.2: Evaluation of strategic energy policies, strategies and plans relevant to this proposal
- 2.3: Evaluation of strategic land use policies, strategies and plans relevant to this proposal
- 2.4: Summary of thermal treatment technologies considered for WSERRC
- 2.5: FGT comparison
- 2.6: Pros and cons for the areas considered
- 2.7: Design options for building façade
- 3.1: Key components of the proposal
- 3.2: Preliminary earthworks material quantities
- 3.3: Peak and average workforce predictions
- 3.4: Site layout description
- 3.5: Key technical parameters
- 3.6: Key components of the flue gas treatment system
- 3.7: Maximum quantity of on-site waste storage
- 3.8: Operating conditions (including upset conditions)
- 4.1: Schedule 2 of the EP&A Regulation 2000
- 4.2: Other NSW legislation relevant to the proposal.
- 4.3: An assessment of the proposal against section 12 and 19 of the WSP Act
- 4.4: State environmental planning policies relevant to the proposal
- 4.5: Assessment of potential impacts to MNES
- 4.6: General matters for consideration section 4.15 of the Act
- 4.7: WSP SEPP matters for consideration
- 4.8: WSP SEPP Aim of Policy
- 5.1: Summary of NSW EfW policy requirements and WSERRC compliance
- 5.2: Estimated residual MSW arising in the Greater Sydney region (tpa)
- 5.3: Estimated residual C&I waste arising in the Greater Sydney region (tpa)
- 5.4: Summary of material recovery during pre-processing and the EfW process
- 5.5: Impact of feedstock sourcing on expected calorific value
- 5.6: Overview of reference facilities
- 5.7: Comparison of waste material categories for WSERRC and Dublin
- 5.8: Filborna exceedances of emission limit values in 2019

Arup Page xlii

- 5.9: Dublin incidences and exceedances in 2019
- 5.10: Comparison of emission limit values and facility performance
- 5.11: Summary of solid residues and management approaches
- 6.1: Engagement activities and tools
- 6.2: The engagement tools employed for each stakeholder group
- 6.3: Stakeholders identified in the SEARs
- 6.4:Community stakeholder issues raised and where this is addressed in the EIS
- 7.1: Environmental receivers
- 7.2: Environmental assessment scope
- 8.1: Summary of PM10 levels from NSW DPIE monitoring (µg/m³)
- 8.2: Summary of PM2.5 levels from NSW DPIE monitoring (µg/m³)
- 8.3: Incremental dispersion modelling results, maximum predicted concentrations
- 8.4: Cumulative dispersion modelling results, maximum predicted concentrations with background levels (without the addition of predicted emissions from the Next Generation)
- 8.5: Cumulative dispersion modelling results, maximum predicted concentrations with background levels and Next Generation Energy from Waste Facility
- 8.6: Proposed in-stack emission limit concentrations for licence limits
- 8.7: Air quality and odour impact mitigation measures
- 9.1: Summary of health indicators 9.1: Summary of health indicators
- 9.2: Substances that will be emitted from the proposal and route of exposure
- 9.3: Criteria pollutants (maximum offsite location)
- 9.4: Short-term exposure and risks (maximum offsite –one hour average)
- 9.5: Receptors and possible exposure pathways
- 9.6: Calculated risks Scenario 1
- 9.7: Calculated risks EPA limit modelling scenario
- 10.1: Preliminary earthworks estimates
- 10.2: Waste generation and management summary
- 10.3: Summary of potential impacts and proposed mitigations for construction and operational waste
- 11.1: Summary of asbestos HSL exceedances
- 11.2: Summary of exceedance of ANZECC standards detected in groundwater and surface water samples taken in 2019.
- 11.3: Summary of exceedances of ANZG (2018) detected in groundwater and surface water samples taken in 2020.
- 11.4: Soils and water mitigation measures
- 12.1: Site water quality test results
- 12.2: Proposal site water balance
- 12.3: Hydrology and flooding mitigation measures
- 13.1: Receiver and noise logger locations
- 13.2: Long-term noise monitoring results, dB(A)
- 13.3: ICNG Construction noise management levels
- 13.4: Predicted construction noise levels at sensitive receivers, dB(A)

Arup Page xliii

- 13.5: Predicted noise levels during the operation of the proposal
- 13.6: Noise and vibration mitigation measures
- 14.1: Dangerous goods used or created as a by-product from the EfW facility and screening
- 14.2: Hazards, the required level of analysis and impact assessment
- 14.3: Environmental matters likely to be regulated by an EPL
- 14.4: Assessment of SEPP 33 Clause 13 criteria
- 14.5: Hazard and risk mitigation measures
- 15.1: Wallgrove Road / Austral Bricks Road intersection construction traffic modelling
- 15.2: Austral Bricks Road / site access intersection construction traffic modelling
- 15.3: Wallgrove Road / Austral Bricks intersection operation traffic modelling
- 15.4: Austral Bricks / site access intersection operation traffic modelling
- 15.5: Traffic and transport mitigation measures
- 16.1: Landscape and visual impact assessment matrix
- 16.2: Lighting impact assessment matrix
- 16.3: Summary of the LCAs that are directly impacted by the proposal
- 16.4: Landscape impacts during construction
- 16.5: Visual impacts during construction
- 16.6: Landscape impacts during operation of the proposal
- 16.7: Visual impacts during operation of the proposal
- 16.8: Night-time lighting impacts from the proposal
- 16.9: Mitigation measures
- 17.1: Impact evaluation matrix adopted for the proposal
- 17.2: Summary of construction impacts
- 17.3: Summary of operation impacts
- 17.4: Social impact mitigation and management measures
- 17.5: Residual impacts during construction
- 17.6: Residential impacts during operation
- 18.1: Construction emissions
- 18.2: Gross emissions from the first year of operation of the proposal
- 18.3: Net GHG emissions balance
- 18.4: GHG and energy efficiency mitigation measures
- 20.1: Water demands for operation of the proposal
- 20.2: Utilities and services mitigation measures
- 21.1: Threatened fauna species recorded during field surveys
- 21.2: Biodiversity impacts
- 21.3: Impacts to native vegetation
- 21.4: Proposed restoration
- 21.5: Biodiversity impact mitigation measures
- 22.1: Relationship between WSERRC and related development
- 22.2: Indicative timeframes for planning approval and construction

Arup Page xliv

- 22.3: Erskine Park potential environmental impacts
- 22.4: Indicative timeframes for ash storage and secondary metals recovery planning approval and construction
- 22.5: Ash storage and secondary metals recovery potential environmental impacts
- 22.6: Indicative timeframes for electrical connection planning approval and construction
- 22.7: Electrical connection to high-voltage network potential environmental impacts
- 22.8: Indicative timeframes for water and sewer connections planning approval and construction
- 22.9: Water and sewer connection potential environmental impacts
- 22.10: Indicative timeframes for telecommunications connection works planning approval and construction
- 22.11: Telecommunications connection potential environmental impacts
- 22.12: Indicative timeframes for site access works planning approval and construction
- 22.13: Site access works potential environmental impacts 23.1: NSW Major Projects
- 23.2: Identification of key impacts and potential cumulative impacts
- 23.3: Potential cumulative impacts during construction and operation of the proposal
- 24.1: Summary of recommended mitigation and management measures
- 25.1 Objectives of the EP&A Act

Technical Reports

Technical Report A: Air quality and odour impact assessment

Technical Report B: Human health risk assessment

Technical Report C: Waste and resource management assessment report

Technical Report D: Best available techniques assessment report

Technical Report E: Waste flow analysis for Greater Sydney

Technical Report F: Soils and water assessment report

Technical Report G: Detailed site investigation

Technical Report G1: Factual report on geotechnical investigations

Technical Report G2: Remediation action plan

Technical Report G3: Due diligence contamination investigation

Technical Report H: Hydrology and flooding assessment report

Technical Report I: Noise and vibration impact assessment

Technical Report J: Preliminary hazard analysis

Technical Report K: Traffic and transport assessment report

Technical Report L: Landscape and visual impact assessment

Technical Report M: Social impact assessment report

Technical Report N: Greenhouse gas and energy efficiency assessment report

Technical Report O: Aboriginal cultural heritage assessment report

Technical Report O1: Aboriginal and non-aboriginal heritage assessment

Arup Page xlv

Technical Report P: Utilities and services assessment report

Technical Report Q: Biodiversity development assessment report

Arup Page xlvi