

SMITHFIELD BESS

Economic impact assessment



Prepared for Arcadis Australia Pacific Pty
Limited

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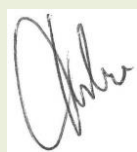
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INTRODUCTION

1.0 INTRODUCTION

Smithfield BESS Pty Ltd (Smithfield BESS), as owned by Iberdrola Australia Limited (Iberdrola) (the Proponent) is seeking development consent for the construction, operation and maintenance of a Battery Energy Storage System (BESS) at the Smithfield Energy Facility (SEF) (Lot 33, DP850596) at 6 Herbert Place, Smithfield NSW 2164 (the Project Site). The BESS will be up to 72 Megawatt (MW) and would provide up to 260 Megawatt hours (MWh) of battery storage capacity.

When operational, the Project will support the NSW Government’s electricity strategy for a reliable, affordable and sustainable electricity future that supports a growing economy. BESS facilities, such as the Project, assist with intermittency risks associated with renewable energy generation in NSW, and are considered a key element of the transformation of the NSW energy sector.

The Project would involve construction and operation of the following:

- A BESS including battery enclosures, inverters, transformers, switch room and control room.
- Medium voltage cables between transformers and the existing switchgear building in the northeast corner of the SEF.
- Switchgear building upgrades to facilitate connection of the BESS.
- Site access to the BESS from Herbert Place.
- Utilities to support operation of the BESS.
- Stormwater management infrastructure, lighting, fencing and security.

The Proponent is seeking State Significant Development (SSD) approval for the Project under Part 4, Division 4.7 of the Environmental Planning and Assessment Act 1979 (EP&A Act) and has received Planning Secretary’s Environmental Assessment Requirements (SEARs) for the Project.

HillPDA was engaged to undertake an assessment that addresses the ‘Economic’ component of the SEARs.

1.1 Assessment framework and purpose

This report has been prepared in accordance with the requirements of the NSW Department of Planning and Environment (DPE), which are set out in the Secretary’s Environmental Assessment Requirements (SEARs) (SSD 59325460) for the Project, issued on 13 July 2023. The SEARs identify matters which must be addressed in the Environmental Impact Statement (EIS).

Specifically, this report has been prepared to respond to the SEARs requirement issued below.

Table 1: Capital Investment Value and Employment SEARs requirements

	Description of requirement	Section of this report
Capital Investment Value and Employment		
	<ul style="list-style-type: none"> • Provide an estimate of the retained and new jobs that would be created during the construction and operational phases of the development, including details of the methodology to determine the figures provided. 	<ul style="list-style-type: none"> - Details of impact methodology – Section 1.3 - Construction phase impacts – Chapter 2 - Operational phase impacts – Chapter 3 - Retained jobs – Section 3.1 - New jobs and net impacts – Section 3.3
Key issues		
	<ul style="list-style-type: none"> • Economic – an assessment of the economic benefits and/or impacts of the project to the region and the State as a whole. 	<ul style="list-style-type: none"> - Construction phase impacts to the State – Chapter 2 - Operational phase impacts to the State – Chapter 3 - Net impacts of the Project to the State – Section 3.3

1.2 Location and context

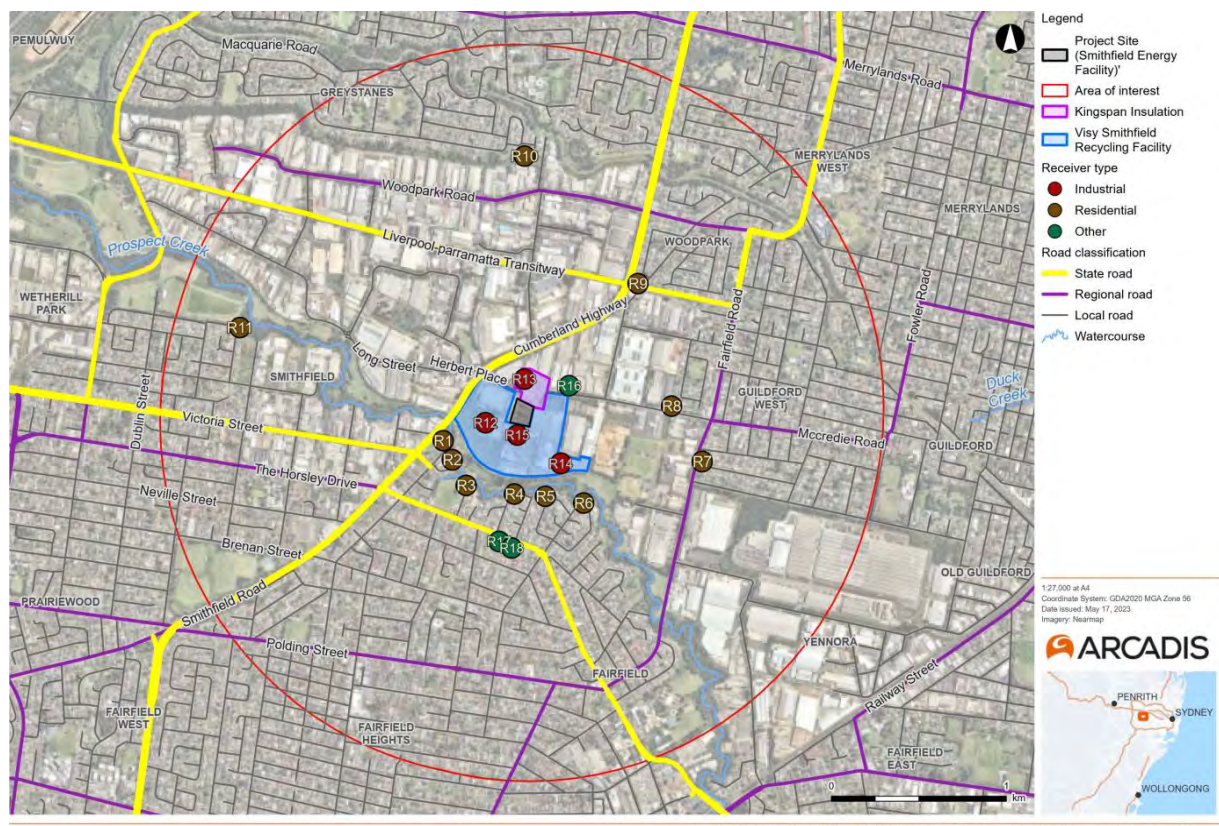
The Project is within the Cumberland local government area (LGA) in Western Sydney, around 30 kilometres west of the Sydney Central Business District (CBD). The Project location is shown in Figure 1.

The Project is located within an existing industrial area, part of the Smithfield Recycling and Manufacturing Precinct (SRMP). The Project is bounded to the south, west and east by the Visy Smithfield Recycling Facility (Visy site), and to the north by Kingspan. The Visy site operates a paper and plastics sorting and recycling facility. The Kingspan site includes a large carparking area and a warehouse used for assembly, service, and storage of retail and commercial water tanks. The nearest residential receiver is located approximately 400 metres south of the Project Site.

The SEF is owned and operated by Smithfield Power Generation Pty Ltd on land leased from Visy. The SEF has been in operation since 1996, originally designed and operated as a gas Combined Cycle Gas Turbine (CCGT or cogeneration) power plant, supplying both electricity to the NSW electricity grid and heat in the form of steam to the adjacent Visy Smithfield Recycling Facility. Since 2017, the SEF has operated as a gas peaking power plant supplying electricity to the NSW electricity grid during periods of peak demand and no longer supplies steam to the adjacent Visy Smithfield Recycling Facility.

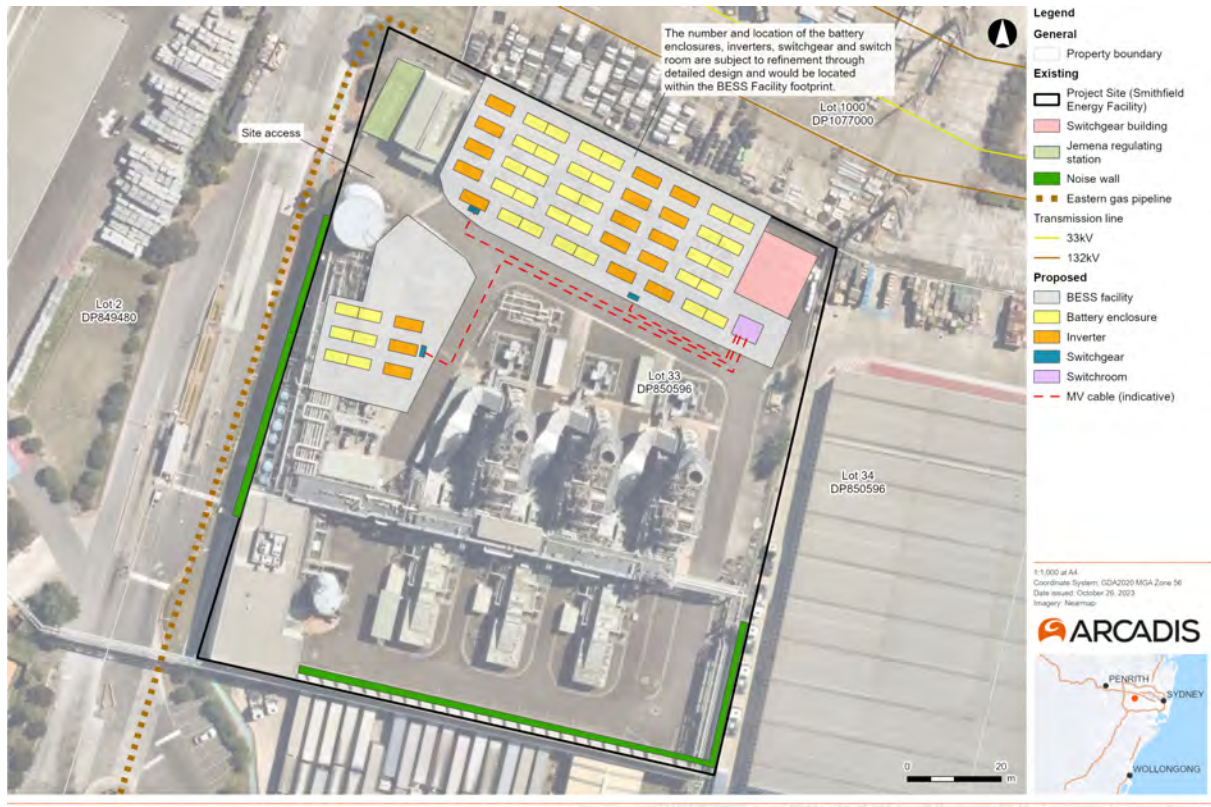
Access to the Project Site is via Herbert Place, a 40 kilometre per hour dual lane local road. Herbert Place is accessed by Cumberland Highway (a state road) from the north and south, and Long Street (a local road) from the west.

Figure 1: Local context



Source: ARCADIS

Figure 2: Project overview



Source: ARCADIS

1.3 Economic impact assessment approach

Direct impacts and economic multipliers

Direct impacts refer to the economic activity supported onsite by the Project during its construction or operational phase.

Economic multipliers refer to the level of additional economic activity generated and/or supported by a source industry. There are two types of effects captured by multipliers:

Production induced effects: which is made up of:

- *First round effects:* which are all outputs and employment required to produce the inputs for the source industry, and
- *Industrial support effects:* which is the induced extra output and employment from all industries to support the increased production by suppliers in response to increased sales.

Consumption induced effects: which relates to the demand for additional goods and services due to increased spending by the wage and salary earners across all industries arising from employment.

Modelling sources and economic metrics assessed

In this report, direct economic activity is based on IBIS World 2023 world reports and ABS Input Output tables. The IBIS World reports provide revenue, remuneration and industry value add for a range of industry types (down to the ANZSIC 4-digit level) at the national level.

Indirect economic activity is estimated using Australian National Accounts Input Output tables 2020-21. Specifically, the multipliers for the Electricity Transmission in Australia; and Electricity Distribution in Australia are applied to determine indirect economic activity.

Economic activity supported by the Project is assessed through examination of four types of economic impact metrics described in the table below.

Table 2: Economic impact metrics assessed

Metric	Description
Output	Output is a gross measure of the total sales generated by the types of land uses present on the site or in the Project
Employment	Employment generated by the types of land uses present on the site or in the Project. Employment is expressed as Full-Time Equivalent (FTE).
Wages	The wages and salaries paid to employees on the site or in the Project
Gross Value Added	Gross value added (GVA) of an industry refers to the value of outputs less the costs of inputs. It measures the contribution that the industry makes to the country's wealth or gross domestic product (GDP).

The economic impacts have been assessed at the NSW state level. That is, economic activity supported by the Project in NSW. If the impacts were assessed at the local government or national level the impacts would be different to that provided in this report.

Economic impact phases

Economic impacts are further assessed and discussed during the Project's construction and operational phases.

- **Design and construction phase:** is the economic activity generated/supported through the design and construction phase of the Project. These impacts are expected to be short-term, concluding when development activity is completed.
- **Operational phase (post-construction):** is the economic activity generated/supported during and post-construction or operational phase. This phase assumes the development is occupied by the proposed land uses.

Limitations with multipliers

Both the ABS and the NSW Treasury Employment Calculator describe several limitations with input-output multipliers, or at least shortcomings with typical interpretations of the multipliers, which generally result in an over-estimation of impacts. The main shortcomings or limitations are as follows:

- Production induced impacts can leave the impression that extra output can be produced without taking resources away from other activities.
- Multipliers assumed fixed input ratios and hence measure impacts based on average effects rather than marginal effects.
- The impacts are nationwide and are not regional or local impacts which would be smaller.

Other limitations are described in both the NSW Treasury Guide and on the ABS website.¹

¹ <https://www.abs.gov.au/statistics/economy/national-accounts/australian-national-accounts-input-output-tables/latest-release>
<https://www.treasury.nsw.gov.au/information-public-entities/nsw-treasury-employment-calculator>

2.0 ECONOMIC IMPACT - CONSTRUCTION PHASE

This section assesses the economic impact of the Project during its construction phase. HillPDA has been provided a construction cost estimate of \$92,982,681. Of this, 60% relates to the procurement and physical construction of the BESS. This would occur outside of Australia, and hence would not have any economic benefit to the Australian economy. As such, this section examines the economic impact of the 40% of the construction cost estimate which occurs on the Project Site.

2.1 Construction phase – gross output

The Project would have a direct impact on construction output as well as indirectly stimulating other industries which assist in production and cater to increased consumption.

The table below details the output multipliers and shows the impact of the change in demand supported by the development and the impact on NSW's economy. The forecast increase in total output supported across NSW is estimated at approximately \$107 million (directly and indirectly).

Table 3: Design and construction impact on gross output (\$m)

	Direct effects	Production induced effects	Consumption induced effects	Total
Output multipliers	1	1.12	0.76	2.88
Gross Output (\$million)	\$37.2	\$42	\$28	\$107

Source: HillPDA estimate using data from ABS Australian National Accounts: Input-Output Tables 2020-21

2.2 Construction phase – job creation

Every million dollars of construction work undertaken generates 2.17 full time job years² onsite directly in construction³. Based on the estimated design and construction cost, a total of around 81 job years would be directly supported by development of the Project as shown in the table below.

Table 4: Design and construction impact on employment (job years)

	Direct effects	Production induced effect	Consumption induced effect	Total
Multipliers	1	1.55	1.14	3.69
Job Years per \$million	2.17	3.36	2.49	8.02
Total Job Years Generated	81	125	92	298

Source: HillPDA estimate using data from ABS Australian National Accounts: Input-Output Tables 2020-21

Every job year generated directly in construction would support a further 1.55 job years in production induced support (providing the inputs to construction). And for every job year directly in construction a further 1.14 job years is supported in consumption induced impacts (providing the goods and services for the workers directly employed in construction).

A total of 298 job years would be directly and indirectly be supported across NSW as a result of the development.

² Note: One job year equals one full-time job over one year

³ Source: ABS Australian National Accounts: Input – Output Tables 2020-21 (ABS Pub: 5209.0)

2.3 Construction phase – workers’ remuneration

We estimate the remuneration of workers directly in design and construction would be around \$6 million. Total remuneration of workers supported by the development both directly and indirectly would be around \$23 million as shown in the table below.

Table 5: Design and construction impact on wages (\$m)

	Direct effects	Production induced effects	Consumption induced effects	Total
Workers remuneration per \$ of gross output	0.17	0.26	0.19	0.63
Workers remuneration (\$million)	\$6	\$10	\$7	\$23

Source: HillPDA estimate using data from ABS Australian National Accounts: Input-Output Tables 2020-21

2.4 Construction phase – Gross Value Added (GVA)

The Gross value added (GVA) of an industry refers to the value of outputs less the costs of inputs. It also measures the contribution that the industry makes to gross regional product (GRP). The major components of GVA are workers’ remuneration, company profits and government taxes from production.

Design and construction would directly contribute around \$12 million to the NSW economy or gross regional product (GRP). Including the multiplier impacts, a total of around \$44 million would be contributed both directly and indirectly to the NSW GRP.

Table 6: Construction – impact on gross value added (GVA)

	Direct effects	Production induced effects	Consumption induced effects	Total
Output multipliers	0.31	0.47	0.41	1.19
Output (\$million)	\$12	\$18	\$15	\$44

Source: HillPDA Estimate using data from ABS Australian National Accounts: Input-Output Tables 2020-21

2.5 Construction phase - economic impact summary

During its construction, the Project would support the following economic activity.

Table 7: Construction phase economic impact summary

Performance indicator	Direct effects	Production induced effects	Consumption induced effects	Total
Employment (job years)	81	125	92	298
Output (\$m)	\$37	\$42	\$28	\$107
Remuneration (\$m)	\$6	\$10	\$7	\$23
GVA (\$m)	\$12	\$18	\$15	\$44

3.0 ECONOMIC IMPACT - OPERATIONAL PHASE

This section estimates the economic activity generated and supported through the operational phase of the Project. This activity is compared to that to generated by the current uses present on the Project Site. This is referred to as the “base case”.

3.1 Economic impact - base case

The following estimates the economic contribution that the Project Site currently generates. This is referred to as the “base case”. The purpose of this is to assess the economic net uplift generated under the proposals operational phase.

HillPDA has been instructed that 4 FTE jobs are provided on the Project Site to operate the exiting SEF. Based on this, coupled with ABS Input Output tables and IBIS world reports, the following assesses the current economic activity generated/supported by the Project Site’s current land use (referred to as the base case):

- **Employment:** A total of 26 Full-time equivalent (FTE) jobs generated and supported. Of these, 4 FTE jobs are directly generated on the Project Site.
- **Output:** A total of \$5.1 million in generated and supported output. Of this, \$2 million is directly generated on the Project Site per annum.
- **Remuneration:** A total of \$1.6 million in generated and supported wages. Of this, \$0.4 million per annum are wages for workers directly on the Project Site.
- **GVA:** A total of \$5 million in generated and supported GVA. Of this, \$1.5 million is directly generated per annum by the current uses on the Project Site.

The base case employment and economic metrics/multipliers would be retained.

Table 8: Base case – economic performance

Impact metric	Direct	Indirect	Total
Employment (FTE)	4	22	26
Gross Output (\$m/ann)	\$2.0	\$3.1	\$5.1
Remuneration (\$m/ann)	\$0.4	\$1.2	\$1.6
GVA (\$m/ann)	\$1.5	\$3.5	\$5.0

Source: Australian National Accounts Input Output tables 2020-2021, IBIS World Reports 2023, HillPDA

3.2 Operational phase – economic impact

Based on advice provided to HillPDA, it is estimated that upon operation of Project, the Project Site would directly generate 5 Full-time Equivalent (FTE) jobs. This is an increase of 1 FTE job over what is currently generated on the Project Site (base case).

Based on this, coupled with ABS Input Output tables and IBIS world reports, the following assesses the economic activity generated/supported on the Project Site upon operation of the Project. This activity is estimated at:

- **Employment:** A total of 33 Full-time equivalent (FTE) jobs generated and supported. Of these, 5 FTE jobs are directly generated on the Project Site.
- **Output:** A total of \$6.6 million in generated and supported output. Of this, \$2.6 million is directly generated on the Project Site per annum.

- **Remuneration:** A total of \$2.0 million in generated and supported wages. Of this, \$0.5 million per annum are wages for workers directly on the Project Site.
- **GVA:** A total of \$6.5 million in generated and supported GVA. Of this, \$2.0 million is directly generated per annum by the c uses on the Project Site.

Table 9: Project case– economic performance upon Project Site

Impact metric	Direct	Indirect	Total
Employment (FTE)	5	28	33
Gross Output (\$m/ann)	\$2.6	\$4.0	\$6.6
Remuneration (\$m/ann)	\$0.5	\$1.6	\$2.0
GVA (\$m/ann)	\$2.0	\$4.5	\$6.5

Source: Australian National Accounts Input Output tables 2020-2021, IBIS World Reports 2023, HillPDA

3.3 Operational phase – net economic impact

Compared to the base case, the Project would support an increased economic outcome for the Project Site. In fact, the net increase in economic activity supported on the Project Site during the operation phase, when compared to the base case, is estimated at:

- **Employment:** a total net increase of around 7 jobs. Of these, 1 FTE job is directly on the Project Site.
- **Output:** a total net increase of around \$1.3 million in output. Of this, \$0.5 million is directly generated onsite.
- **Remuneration:** a total net increase of around \$0.4 million in wages. Of this, \$0.1 million increase is for additional workers onsite.
- **GVA:** a total net increase of around \$1.3 million in output. Of this, \$0.4 million is directly generated onsite.

The net economic impact of the Project is provided in the table below.

Table 10: Project net economic impact summary

Impact metric	Direct	Indirect	Total
Employment (FTE)	1	6	7
Gross Output (\$m/ann)	\$0.5	\$0.8	\$1.3
Remuneration (\$m/ann)	\$0.1	\$0.3	\$0.4
GVA (\$m/ann)	\$0.4	\$0.9	\$1.3

Source: Australian National Accounts Input Output tables 2020-2021, IBIS World Reports 2023, HillPDA

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