

# Regional Profiles

## Pilbara

**Total Area:** 506,778 sq. km    **Population:** 55,039    **Working Zones:** East Pilbara, Newman, Port Hedland and South Hedland, Ashburton, Karratha and Roebourne (*maps at end of profile*)

### Region Selection Rationale

Exposure to decarbonisation	Potential to harness economic opportunities from decarbonisation
<ul style="list-style-type: none"> <li><b>Carbon intensity:</b> High - 7 gas-fired power stations and 40 safeguards. As of 2023-24, safeguards in the region account for 68% of WA safeguard scope 1 emissions.</li> <li><b>Urgency:</b> High – heavy reliance on fossil fuels, driven by energy-intensive gas extraction and iron ore mining industries.</li> <li><b>Adaptive capacity:</b> Moderate (Karratha and Roebourne (average); Port Hedland and South Hedland; Newman (below average); Ashburton &amp; East Pilbara (least adaptive)).</li> <li><b>Readiness:</b> High – WA's state government plans include expansion of renewable energy infrastructure and emission reduction. Private sector initiative: mining companies have committed to significant decarbonisation targets.</li> </ul>	<ul style="list-style-type: none"> <li><b>Natural capital:</b> substantial mineral resources, strong solar energy and green industry potential.</li> <li><b>Workforce compatibility:</b> High proportion of workers in the region are in jobs highly compatible with clean energy industries.</li> <li><b>Enabling infrastructure:</b> Medium – Port infrastructure, including facilities at Port Hedland and Dampier, support mineral exports and is being adapted for future renewable energy and hydrogen exports. Port Hedland airport – largest airport in region. Connected by Great Northern Highway and NW Coastal Highway.</li> </ul>

### Carbon-Intensive Industries

#### Gas Fired Power Stations (GFPS)

Name		Owner	Scope 1 emissions (tCO2-e) (23/24)	% of WA scope 1 emissions (23/24)	% of Aus scope 1 emissions (23/24)
Yurralyi Maya		Rio Tinto	410,351	0.6%	0.1%
Port Hedland		APA	340,466	0.5%	0.1%
South Hedland		TransAlta	306,419	0.4%	0.1%
Karratha		ATCO	53,106	0.1%	0.02%
Paraburdoo		Rio Tinto	289,565	0.4%	0.1%
West Angelas		Rio Tinto	197,559	0.3%	0.1%
Cape Lambert		Rio Tinto	108,551	0.2%	0.04%
Total	7	4	1,706,017	2%	1%



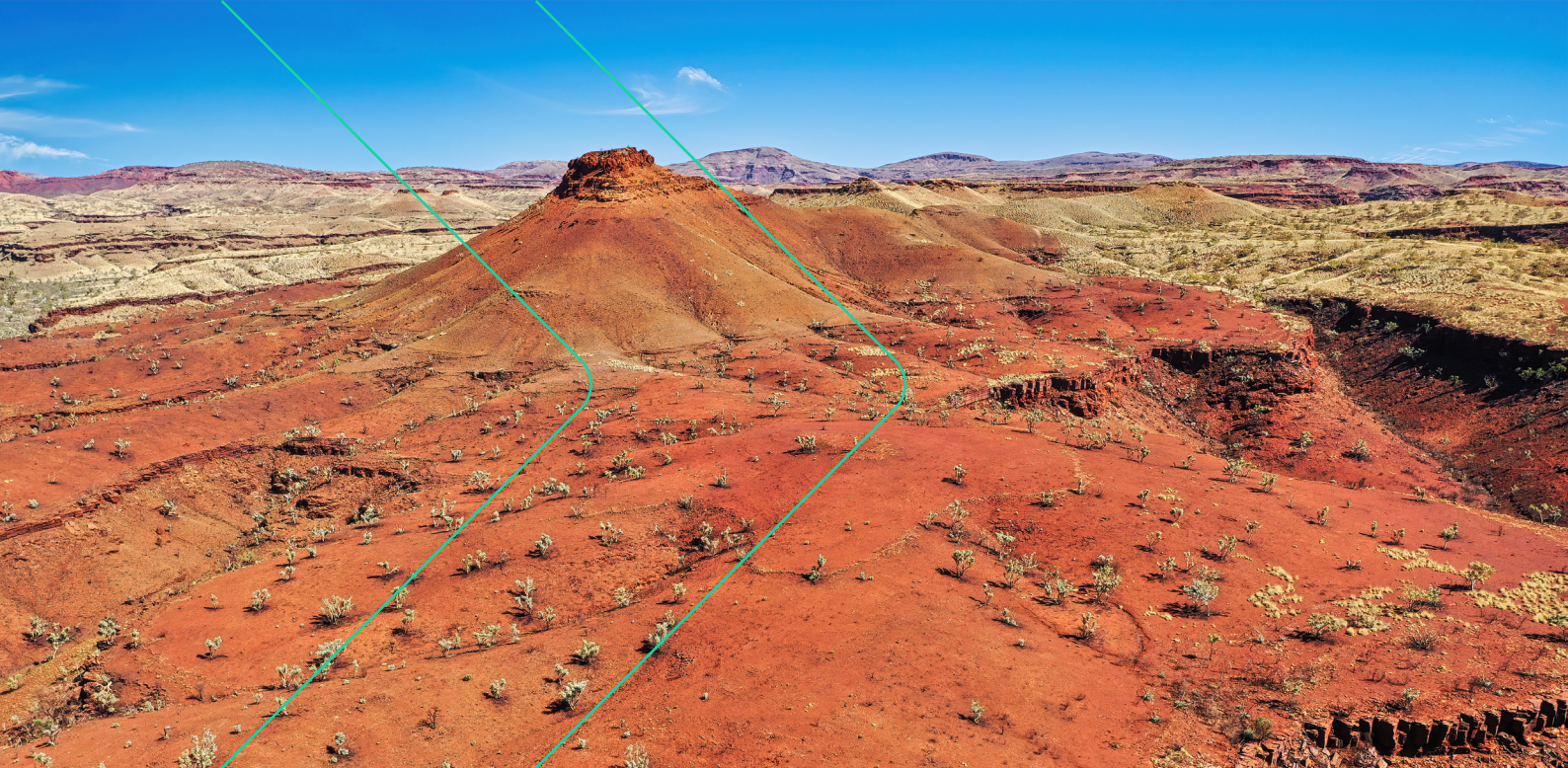
## Manufacturing

Name	Owner	Scope 1 emissions (tCO <sub>2</sub> -e) (23/24)	% of WA scope 1 emissions (23/24)	% of Aus scope 1 emissions (23/24)
YPF Ammonia Plant	Yara Pilbara Fertilisers Pty Ltd	1,366,029	2%	0.5%

## Safeguard Facilities *(Emit 100,000+ tonnes CO<sub>2</sub> annually - power stations connected to grid are exempt)*

Type	No.	Scope 1 emissions (tCO <sub>2</sub> -e) (23/24)	% of WA scope 1 safeguard emissions (23/24)	% of Aus scope 1 safeguard emissions (23/24)
Electricity generation	3	1,040,732	2%	1%
Fertiliser and pesticide manufacturing	1	1,366,029	3%	1%
Metal ore mining	25	6,855,870	14%	5%
Oil & Gas Extraction	8	21,716,129	46%	17%
Rail freight transport	3	1,470,398	3%	1%
<b>Total Safeguards</b>	<b>40</b>	<b>32,449,158</b>	<b>68%</b>	<b>25%</b>





## Major Industries

**Gross Regional Product (GRP): \$88.8 billion (20.3% of WA's Gross State Product)<sup>1</sup>**

Ranked Industries with most value	Value (m)	% of GRP
Mining	\$82,479	92.9%
Construction	\$1,884	2.1%
Rental, Hiring & Real Estate Services	\$1,090	1.2%
Transport, Postal & Warehousing	\$635	0.7%
Public Administration & Safety	\$351	0.4%

Ranked Employing Industries (by usual residence <sup>2</sup> )	No. of employees (% of workforce)	Ranked Employing Industries (by place of work <sup>3</sup> )	No. of employees (% of workforce)
Total labour force living in region	27,594 <sup>4</sup>	Total labour force working in region	55,594 <sup>5</sup>
Mining	9,072 (34%)	Mining	28,014 (50%)
Construction	2,394 (9%)	Construction	5,554 (10%)
Education	1,971 (7%)	Accommodation & Food Services	2,729 (5%)
Healthcare & Social Assistance	1,889 (7%)	Transport, Postal and Warehousing	2,579 (5%)
Transport, Postal and Warehousing	1,680 (6%)	Health Care and Social Assistance	2,056 (4%)

- 1 Data sourced using REMPLAN (incorporating ABS 2021 Census Place of Work Employment (Scaled); 2022 / 2023 National Input Output Tables; June 2024 Gross State Product figures)
- 2 Data by usual residence means only employees living in Pilbara region would be captured (regardless of whether or not they actually work in Pilbara).
- 3 Data by place of work means only employees working in Pilbara region would be captured (regardless of whether or not they actually reside in Pilbara).
- 4 Note, for purposes of calculating shares of workforce, total of 26,449 was used (total workforce minus those workers in 'Industry of Employment' categories listed as 'inadequately described' and 'not stated').
- 5 Note, for purposes of calculating shares of workforce, total of 53,592 was used (total workforce minus those workers in 'Industry of Employment' categories listed as 'inadequately described' and 'not stated').

## Major Investments

Clean energy and heavy industry projects (excluding cancelled and completed) (top 5 projects by value)

Project	Description	Category	Status	Value
Australian Renewable Energy Hub <sup>6</sup>	To integrate solar and onshore wind power, green hydrogen and green ammonia for export and domestic markets	Green hydrogen	Under development	\$30,000 m
Port Hedland Green Steel (POSCO) <sup>7</sup>	Reduce magnetite iron ore to HBI before being shipped to South Korea for steelmaking; the project would replace natural gas for green hydrogen to reduce carbon emissions	Green metals	Proposed	\$27,000 m
Balla Balla River desalination plant <sup>8</sup>	Plant will provide nearby industry 150 gegalitres per year of desalinated seawater	Water	Announced	\$5,000 m
Yindjibarndi Energy Hub <sup>9</sup>	Development of renewable energy and storage projects on Yindjibarndi Ngurra (country). Plans include up to 3GW of wind, solar and battery storage to be in construction in the next several years.	Renewable energy	Announced	\$1,000 m
Pilbara Generation Project <sup>10</sup>	A new hybrid solar gas energy solution to support the incorporation of large scale renewable energy and battery storage that will power existing projects	Renewable energy	Announced	\$718 m

## Transmission Infrastructure Projects

NWIS (North West Interconnected Grid System) Transmission Planning Update

Name	Description	Status	Timing	Costs
Pilbara Green Link <sup>11</sup>	550 km of transmission lines will connect Horizon Power's infrastructure to the Australian Renewable Energy Hub (AREH) and other renewable energy projects.  Aim is to support renewable energy generation and decarbonisation efforts in the mining sector.	Announced	Construction to commence in 2025	N/A
Transmission Upgrades <sup>12</sup>	Includes various expansions to existing NWIS to improve capacity and facilitate the integration of renewable energy projects.	Ongoing	N/A	N/A

6 <https://research.csiro.au/hyresource/australian-renewable-energy-hub/> (Access may be restricted on a secure network)

7 <https://www.abc.net.au/news/2023-12-16/south-korean-green-steel-iron-ore-plans-port-hedland/103201750> (Access may be restricted on a secure network)

8 <https://www.abc.net.au/news/2024-06-28/legacie-suez-ngarluma-pilbara-desalination-plant-balla-balla/104030948> (Access may be restricted on a secure network)

9 <https://international.austrade.gov.au/en/news-and-analysis/success-stories/yindjibarndi-people-partner-with-acen-to-bring-clean-energy-to-western-australia>

10 <https://www.industry.gov.au/publications/resources-and-energy-major-projects-2024>

11 <https://reneweconomy.com.au/engineer-named-for-new-transmission-line-from-massive-renewable-hub-to-pilbara-iron-ore-mines/> (Access may be restricted on a secure network)

12 <https://www.wa.gov.au/organisation/energy-policy-wa/pilbara-energy-transition-plan>



## Employment

Indicator (2021 Census unless otherwise stated)	Pilbara	WA
Average working age	37	37
Median income (annual gross, exc. super)	\$78.0K - \$91.0K	\$41.6K - \$52.0K
Participation in workforce	67%	64%
Female participation in workforce	65%	60%
Unemployment rate (Dec 2024)	2.2%	3.4%
Regional Labour Market Index (Mar 2025)	Below average <sup>13</sup>	N/A

## Demographics

Indicator (2021 Census)	Pilbara	WA
Median age	32	38
First Nations (% of population)	15%	3%
Population growth (2016-2021)	-8%	8%
Educational attainment (% of population aged 15 & above): <sup>14</sup>		
Below Y12	45%	40%
Y12 or equivalent	55%	60%
Cert III & IV	31%	19%
Bachelor and above	16%	26%

## Housing

Indicator (2021 Census unless otherwise stated)	Pilbara	WA
Homelessness <sup>15</sup>	0.7%	0.4%
Commonwealth Rent Assistance (Dec 2024) <sup>16</sup>	1%	4%
Mortgage stress <sup>17</sup>	8%	13%
Rental stress <sup>18</sup>	9%	28%

<sup>13</sup> Note, the Pilbara region falls within the 'Western Australia – Outback North & South' labour market region, where the Regional Labour Market Index (RMLI) is assessed as 'Below average'. However, the unemployment rate is much higher across this region than it is in Pilbara, meaning using this as a proxy for Pilbara would be misleading.

<sup>14</sup> Excludes 'not stated' and categories are not cumulative

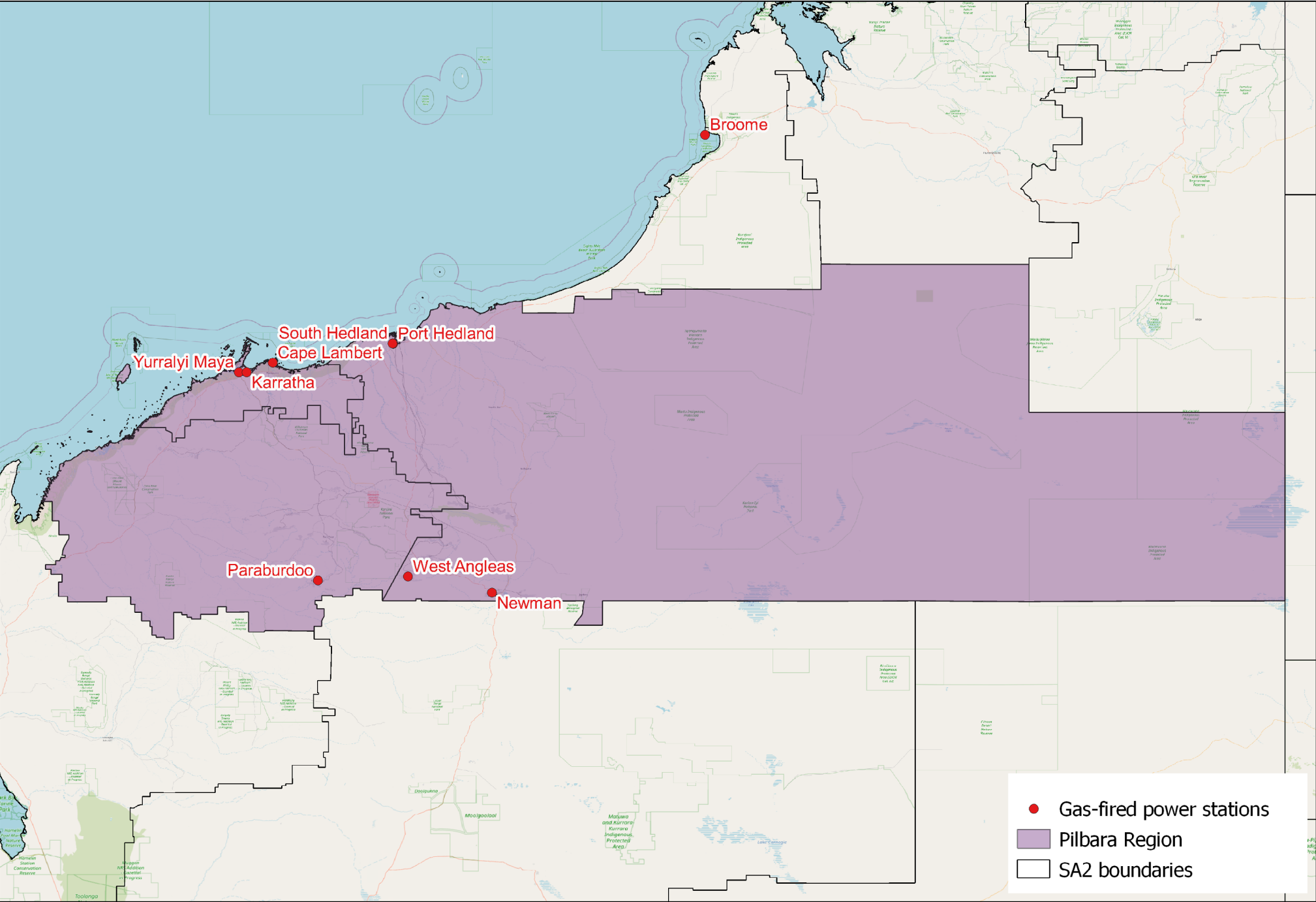
<sup>15</sup> Share of population

<sup>16</sup> Share of population

<sup>17</sup> Share of households where repayments are >30% of household income

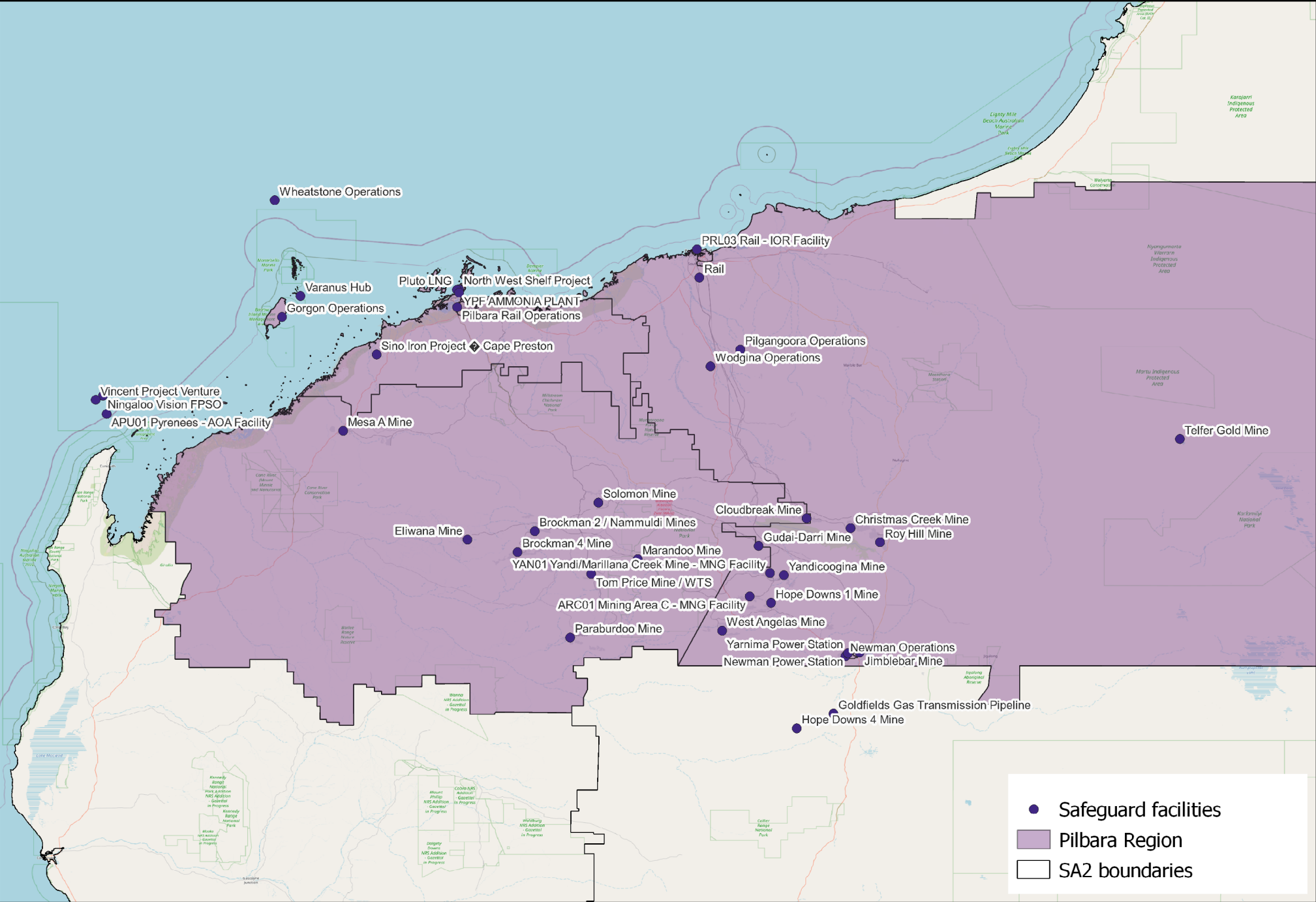
<sup>18</sup> Share of households where rent payments are >30% of household income

Map of Region – Power Stations and Mines





# Map of Region – Safeguards





## Data Sources

Section	Source	Date
<b>Overview</b>		
Total Population	<a href="#">Census</a> , ABS	2021
Area	<a href="#">Mesh Blocks - SA2 Allocation Files</a> , ABS	2021
<b>Region Selection Rationale</b>		
All	<a href="#">Regional identification framework</a>	February 2025
<b>Carbon Intensive Industries</b>		
Gas Fired Power Stations	<a href="#">Greenhouse &amp; energy information by designated generation facility</a> , CER (Pilbara) <a href="#">Greenhouse &amp; energy information - published data highlights</a> (WA)	2023-24
Manufacturing	<a href="#">Safeguard facilities data</a> , CER	2023-24
Safeguard facilities	<a href="#">Safeguard facilities data</a> , CER	2023-24
<b>Major Industries</b>		
Ranked industries by most value	<a href="#">Economic data</a> <sup>a</sup> , REMPLAN	2025
Ranked Employing Industries	<a href="#">Census</a> , ABS	2021
<b>Major Investments</b>		
All	<a href="#">Funded projects</a> , ARENA	2025
	<a href="#">HyResource</a> <sup>b</sup> , CSIRO	2025
	<a href="#">Resources and Energy Major Projects</a> , DISR	2024

a Access may be restricted on a secure network: <https://www.remplan.com.au>

b Access may be restricted on a secure network: <https://research.csiro.au/hyresource/projects/projects-spreadsheet/>





Section	Source	Date
<b>Transmission Infrastructure Projects</b>		
Pilbara Green Link	<a href="#">Pilbara Green Link</a> <sup>c</sup> , Horizon Power	November 2024
NWIS Upgrades	<a href="#">\$3 billion Rewiring the Nation deal to power WA jobs and growth</a> , DCCEE	August 2023
<b>Employment</b>		
Average working age, median income, labour force participation	<a href="#">Census</a> , ABS	2021
Regional Labour Market Index	<a href="#">Regional Labour Market Indicator</a> , Jobs and Skills Australia	March 2025
Unemployment rate:		
• Pilbara	<a href="#">Small Area Labour Markets</a> , Jobs and Skills Australia	December 2024
• WA	<a href="#">Labour Force</a> , Australia, ABS	December 2024
<b>Demographics</b>		
All	<a href="#">Census</a> , ABS	2021
<b>Housing</b>		
Homelessness, mortgage stress, rental stress	<a href="#">Census</a> , ABS	2021
Commonwealth Rental Assistance	<a href="#">Benefit and Payment Recipient Demographics - quarterly data</a> , DSS	December 2024
<b>Maps</b>		
All	Produced using data from <a href="#">Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES)</a> , DAFF	December 2023

Note: All datasets maintained by third party providers listed above and date reflects most recent data available.

<sup>c</sup> Access may be restricted on a secure network: <https://infrastructurepipeline.org/project/pilbara-green-link>