

## Methodology for defining the Illawarra Renewable Energy Zone geographic area

The NSW Electricity Infrastructure Roadmap is enabled by the *Electricity Infrastructure Investment Act 2020*, which became law on 2 December 2020. Together, they outline the NSW Government's plan to deliver five Renewable Energy Zones (REZs) including in the Illawarra. The Energy Corporation of NSW is the NSW Government-controlled statutory authority that is leading the delivery of NSW REZs.

Beginning in 2022, the Energy Corporation of NSW undertook a geospatial mapping analysis investigation of the Illawarra region to identify a nominal boundary for the REZ.

This initial analysis was undertaken in six key stages as summarised below:

1. Consultation with a range of NSW Government stakeholders from relevant agencies to identify key boundary considerations and source relevant data. 19 data layers were identified and collected.
2. 13 data layers were selected to create heatmaps of modelled land use considerations, technical constraints and optimal wind and solar resource locations. Each of these layers was broken down into sublayers, with the respective sublayers ranked to reflect the unique opportunities and constraints relevant to each data layer.
3. These sublayers were then combined using 50-metre wide cells to create heatmaps for wind and solar resource potential, land uses and key constraints.
4. Modelling was then run to identify the mean score for each 50-metre cell across all 13 data layers.
5. In addition to the above resource potential and technical feasibility layers, 6 further model layers were included to enable qualitative factors to be incorporated, such as environmental, economic and land-use considerations.
6. Project locations identified through the industry Registration of Interest were considered as a reasonable indication of energy resources with a likelihood of being developed within the REZ geographic area. This data was used to inform the consideration of potential amendments to the REZ boundary to capture areas with greater prospects for wind and solar projects and proximal connection distances to transmission assets.
7. The potential Illawarra REZ boundary was then identified based on a balanced consideration of the quality of the energy resource, economic considerations, investor support, communities and considerations of environmental and land-use constraints. Where suitable, the boundary proposes to use natural alignments such as coastline, roads, mountain ridges, rivers and other clear delineating features such as LGA boundaries.

## Data layers

The tables below detail the data layers used for identifying the Illawarra REZ boundary.

Data layer	Source
<b>Heatmap analysis layer</b>	
Solar PV resource	DIGS, Geological Survey of NSW
Wind resource (speed)	DIGS, Geological Survey of NSW
Site slope	Geoscience Australia DEM_S_1s
Site aspect	Geoscience Australia DEM_S_1s
Site elevation	Geoscience Australia STRM 1s
Land use	Australian Bureau of Agricultural and Resource Economics, Catchment Scale Land Use of Australia 2014. Department of Planning and Environment.
Land cover	NSW Department of Planning and Environment
Protected areas	Collaborative Australian Protected Area Database 2020 and NPWS 2021
Prohibited areas	Geoscience Australia
Land-use zoning	NSW Department of Planning and Environment
Biophysical Strategy Agricultural Land (BSAL)	NSW Department of Planning and Environment
Biodiversity	NSW Office of Environment and Heritage
Population and housing density	Australian Bureau of Statistics, Census 2016
Registration of Interest projects	Results of industry Registration of Interest process for Illawarra REZ, EnergyCo NSW
<b>View layer</b>	
Local Government Area	NSW Department of Planning and Environment
NSW Electorates	NSW Department of Planning and Environment
Transmission corridors and capacity	NSW Department of Planning and Environment
Common Ground mining data - Mining Tenure	NSW Department of Planning and Environment
Other planned energy developments	NSW Department of Planning and Environment
Land tenure details Crown/private	NSW Department of Planning and Environment

should ensure that the information upon which they rely is up to date and to check the currency of the information with the appropriate departmental officer or the user's independent adviser.