THE BIOENERGY ROADMAP FOR SA
&
AUSTRALIAN BIOMASS FOR BIOENERGY ASSESSMENT

RenewablesSA

Low Carbon Economy Unit

Department for the Premier & Cabinet

INTRODUCTION

Bioenergy Roadmap for South Australia

Overview of ABBA Project

Overview of AREMI

Datasets & Analytics

Demonstration

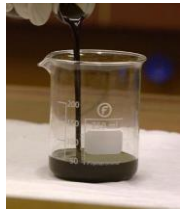
Key Drivers for Bioenergy

- Utilisation of waste streams
- Reduction in CO2 emissions
- Energy security
- Dispatchable power
- Regional development and employment
- Environmental improvement

Current State of Play in SA

- Combustion of waste crop material, purpose grown crop material, municipal and commercial wastes to produce heat and electricity

- Digestion of wastes to produce gas for heating, conversion to electricity or injection into gas reticulation systems

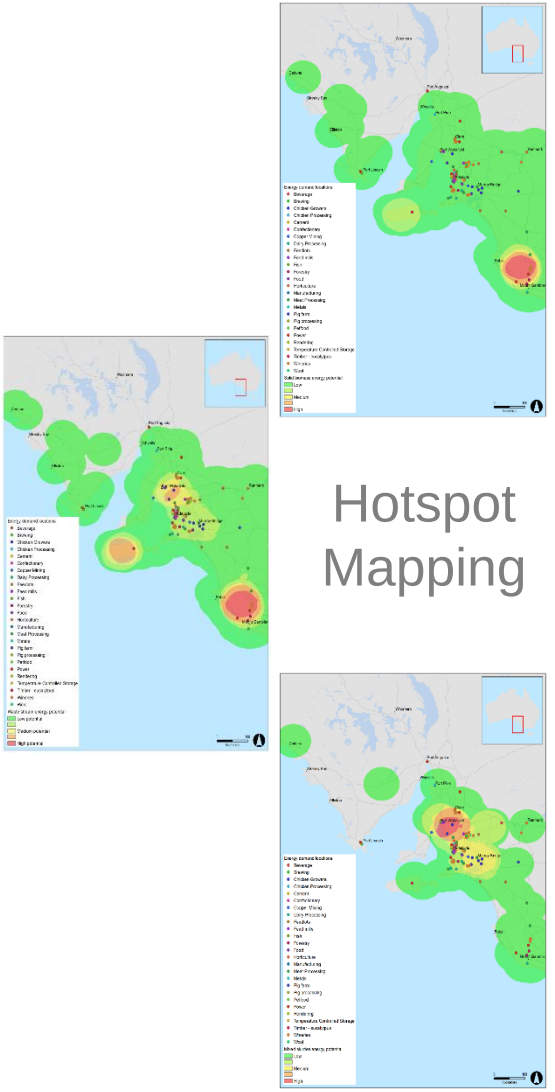


- Conversion of biomass to produce bio-fuels
- Capture of gas from decomposing wastes (landfill gas) to convert to electricity

In Australia the capture of gas from decomposing wastes and the combustion of waste crop material are the more typical applications.

Bioenergy Roadmap – Stage 1

- Bioenergy Roadmap for South Australia Report
- Identifies hotspot areas:
  - Sufficient feedstock quantities
  - Matched demand for heat and electricity with conversion technologies
  - Logistical issues: low 40-50km; high 100km
- GIS data loaded onto web-based application
  - Multiple data sources
  - Accessible and searchable



Hotspot Mapping

http://www.renewablessa.sa.gov.au/investor-information/bio-energy-roadmap/stage-1



Bioenergy Roadmap – Stage 2

Working in hotspot areas to lay the groundwork for new bioenergy projects by:

- Providing information on bioenergy alternatives for electricity and heat production
- Link biomass suppliers to users of energy
- Demonstrate how local businesses can be supported to add value

Forums

Feasibility Funding and Grants

ABBA

National database of biomass resources across Australia

Catalyse investment in the renewable energy sector by:

- Providing information on types, volumes and locations of potential bioenergy feedstocks
- Collates and presents information via the Australian Renewable Energy Mapping Infrastructure (AREMI) interface, a central source for renewable energy mapping data and information
- Includes interactive analytic tools







ABBA

- Funded by Australian Renewable Energy Agency (ARENA)
- Collaboration of 6 States, Queensland University of Technology, Sunshine Coast University, Industry and Data61/CSIRO
- Building on current regionally based data and filling the gaps, for a national approach with public accessibility.
- Project managed by Rural Industries Research & Development Corporation (RIRDC)

Representative states: Western Australia, South Australia, Tasmania, Victoria, New South Wales and Queensland

RenewablesSA

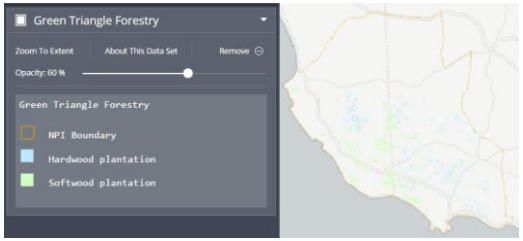
AREMI

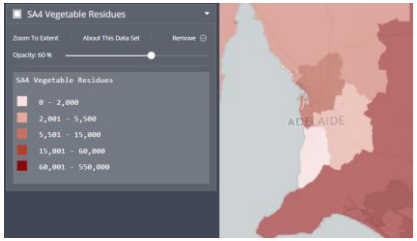
Australian Renewable Energy Mapping Infrastructure

Part of the 'National Map' which provides an open framework of geospatial data services

Provides access to renewable energy and general information

Overlay, download, upload datasets





RenewablesSA

SOUTH AUSTRALIA

Government of South Australia
Department of the Premier and Cabinet

AREMI

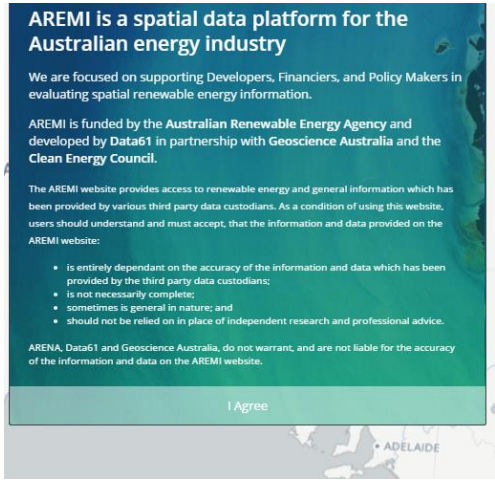
Data layers include:

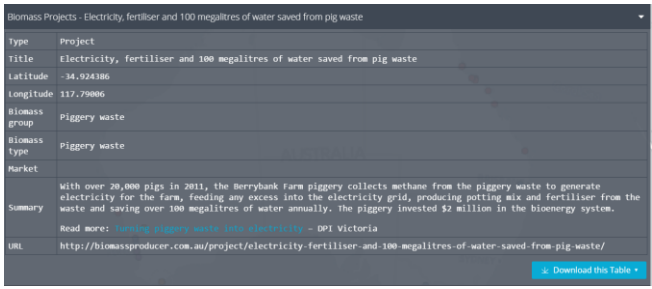
Biomass location, type & volume

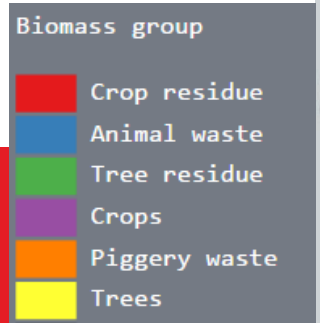
Existing bioenergy providers, location & volume

Existing infrastructure - e.g. gas, electricity

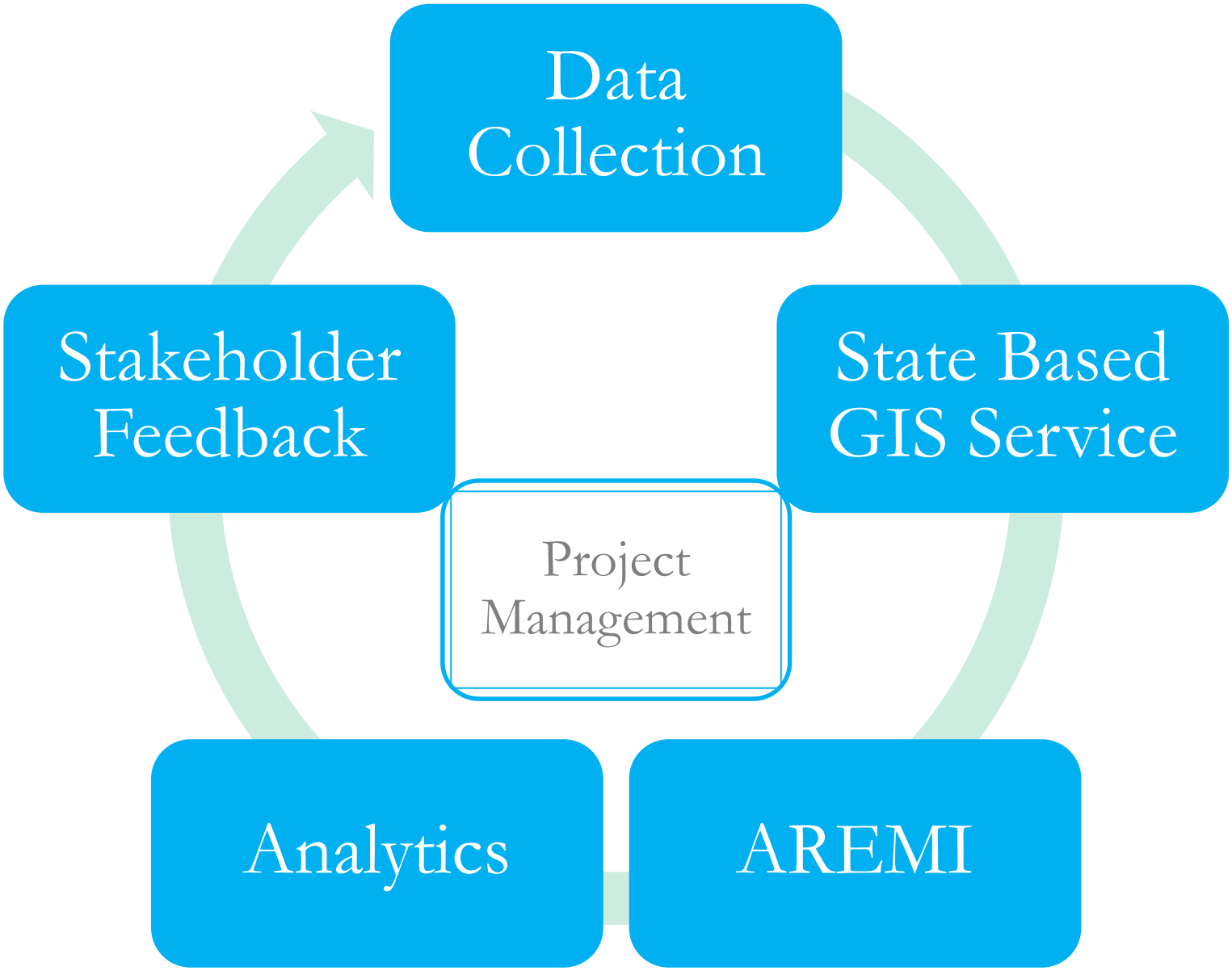
Information tools relating to biomass availability, economics and sustainability







RenewablesSA


Data Collection
State Based GIS Service
AREMI
Analytics
Stakeholder Feedback
Project Management

Spatial Data Layers

Biomass Feedstocks mapped to April 2017

WA

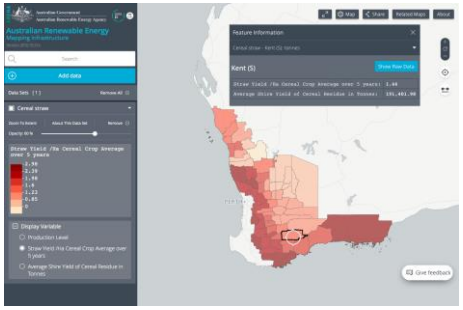
Cereal Straw

Oil Mallee plantings

Grape Marc

Cattle Feedlots

Seaweed Wrack

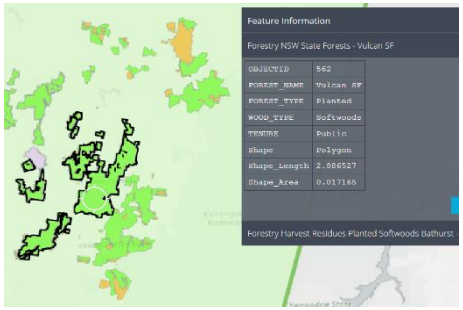


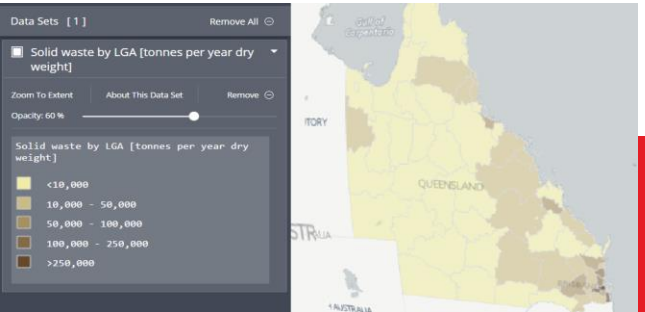
NSW

Cropping Residues

Forestry

Wood Processing Facilities





QLD

Forestry

Urban Waste

Sugarcane

TAS

Forestry:

Harvest Residues – Hardwood/Softwood

2014-2018 + estimates to 2043

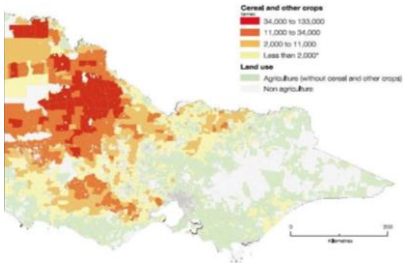
VIC

Cropping Residues

Forestry & Wood Production Livestock

Waste Management

Food Processing

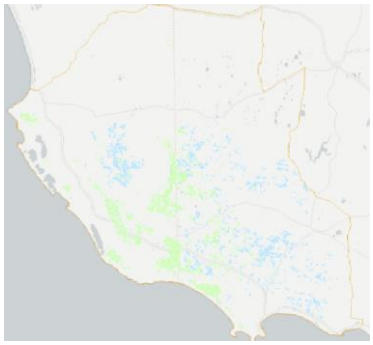


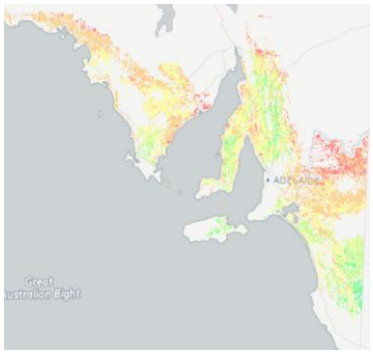
SOUTH AUSTRALIA

Government of South Australia
Department of the Premier and Cabinet

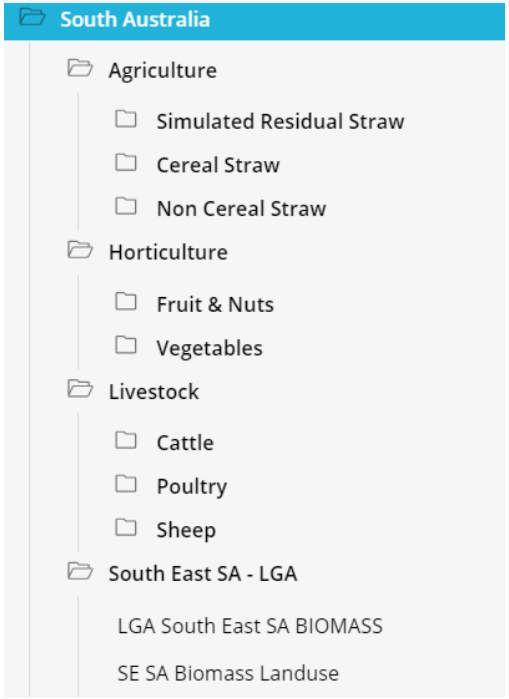
South Australian data

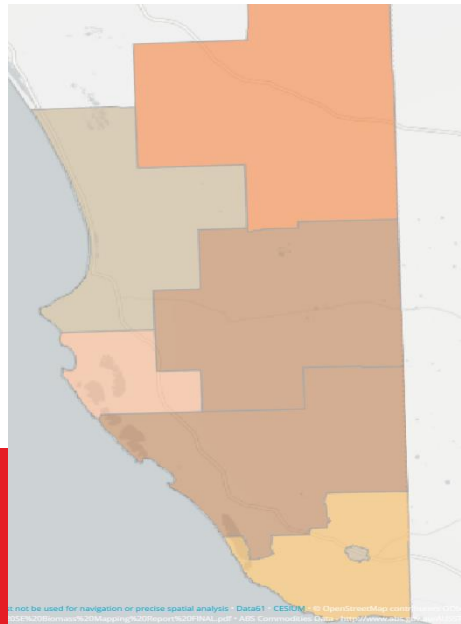
- Horticulture
- Livestock
- Cropping Residues
- Simulated Residual Straw
- Green Triangle Forestry production
- SE SA Biomass Mapping





LGA South East SA BIOMASS - Grant	
OBJECTID	5
REGION TYPE	Local Government Area - LGA
REGION NAME	Grant
RESIDUE TYPE	South East South Australia R
RESIDUE UNIT	Tonnes pa
BIOMASS DESCRIPTION	Locations and aggregate amou Australia
TIMEFRAME	2014
TOTAL RESIDUES	2,986,951
MINIMUM	2,000,000
MAXIMUM	4,000,000
Crop Residues	1,000,000 - 2,000,000
Manufacturing & Processing Residues	2,000 - 5,000
Animal Waste	1,000,000 - 2,000,000
Municipal Solid Waste/Construction & Industry	2,000 - 5,000

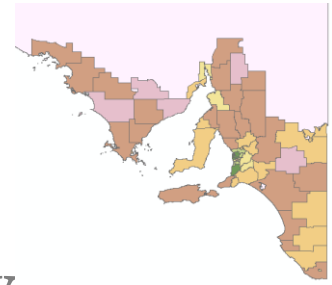




RenewablesSA

SOUTH AUSTRALIA

Coming up……..



Municipal Solid & Liquid Waste

Construction & Demolition

Commercial & Industrial

Forestry Residues

Green Triangle, KI and Mt Lofty Ranges

Timber Processing Residues

And…

Livestock – Piggeries (National dataset)

Winery and Vineyard Residues (National dataset)

ANALYTIC TOOLS

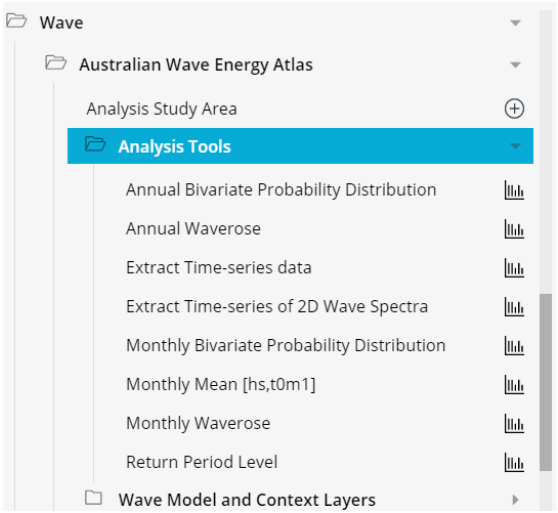
Queensland University of Technology

University of the Sunshine Coast

+ PhD Students

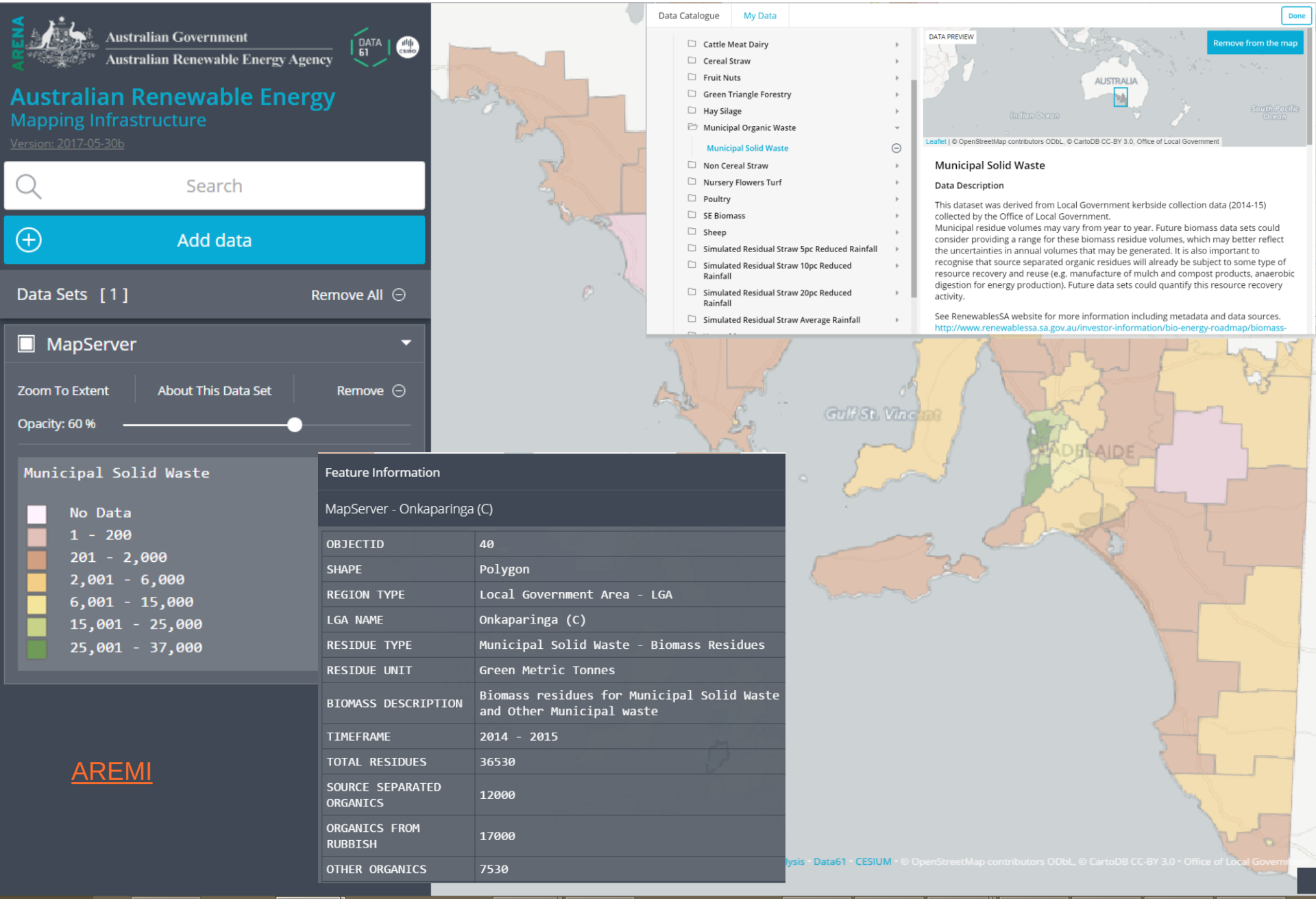
Users will be able to interact with the platform & select scenarios

Survey undertaken to measure stakeholders' preferences for different types of assessments



AREMI - Demonstration

http://nationalmap.gov.au/renewables/



ABBA

Data that is on AREMI so far is a first pass

Engagement with industry to validate and provide feedback

Continuity plan for usefulness & longevity of ABBA

Advocacy and awareness raising in the community

e.g. Bioenergy Roadmap Forums and pre-feasibility grants

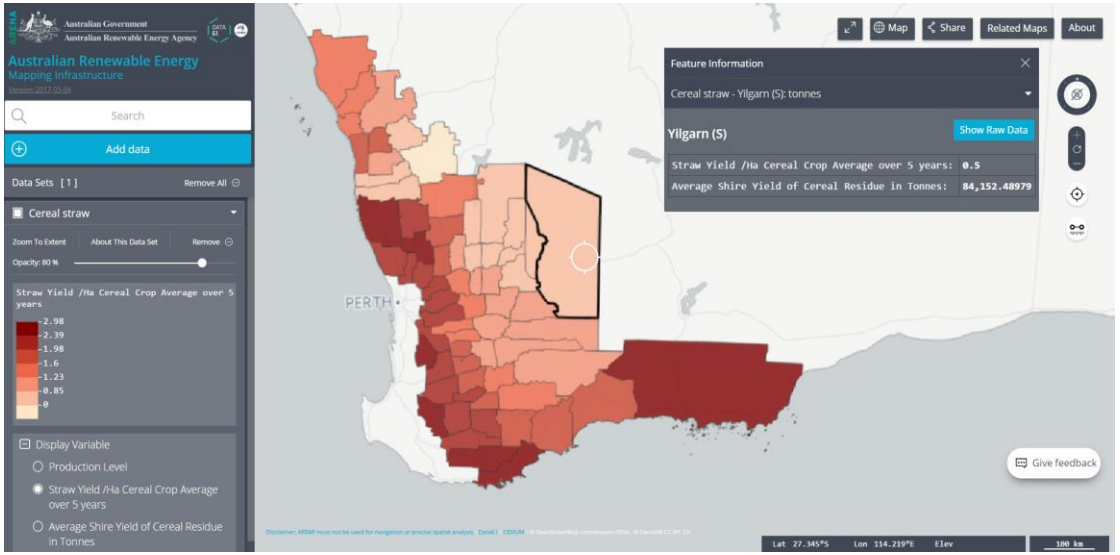


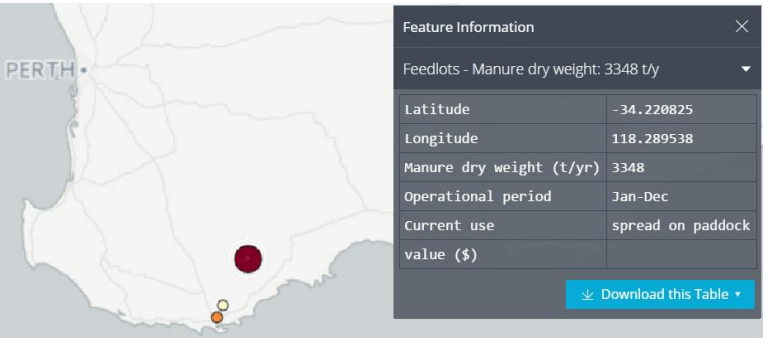


THANK YOU



Biomass Feedstocks - Western Australia





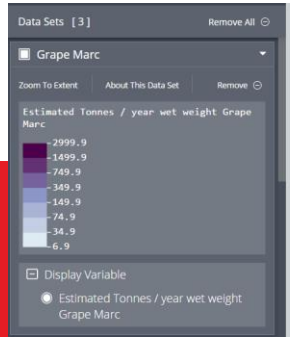
Seaweed Wrack

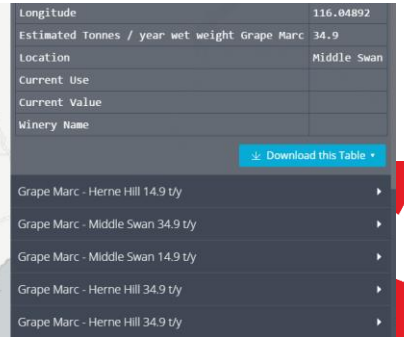
Cereal Straw

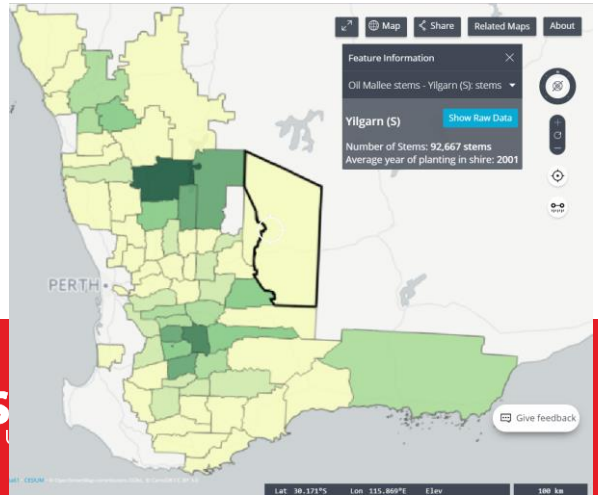
Cattle Feedlots

Oil Mallee plantings

Grape Marc



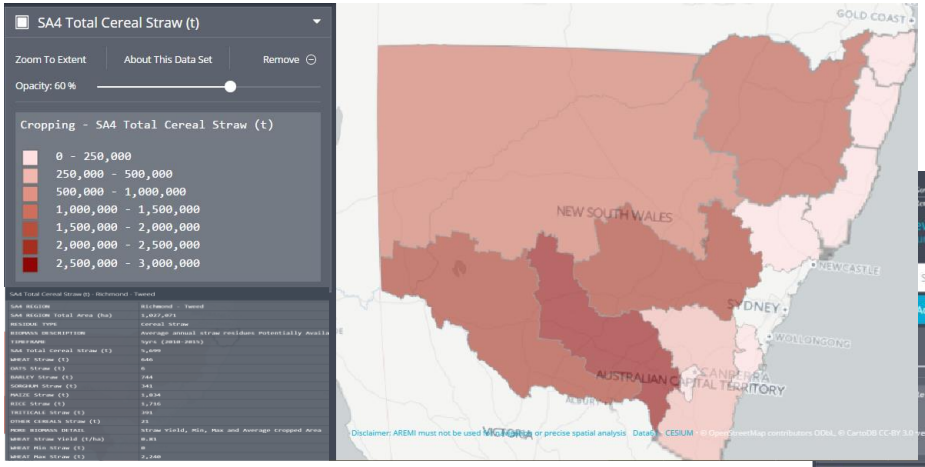


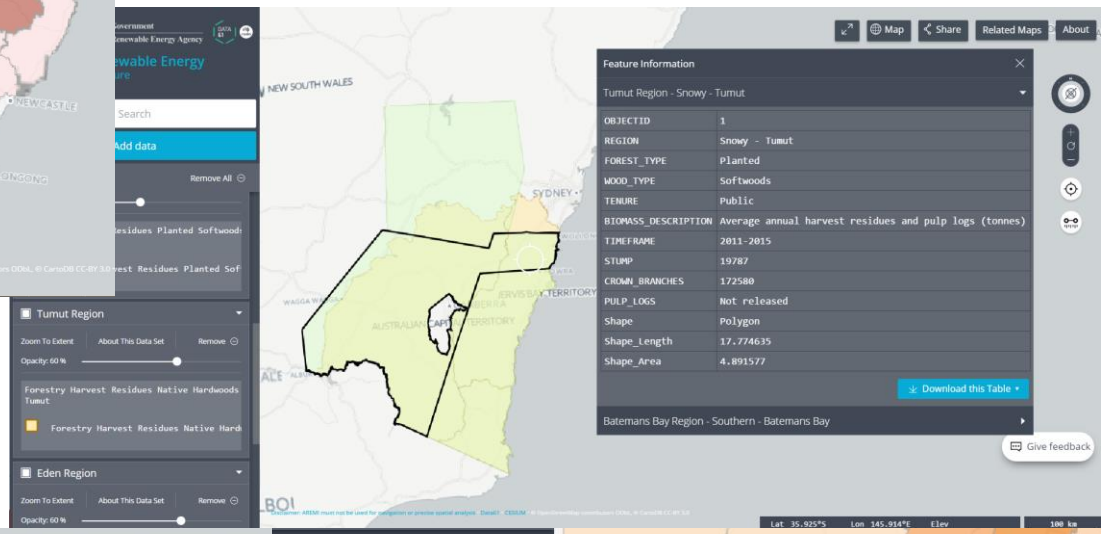


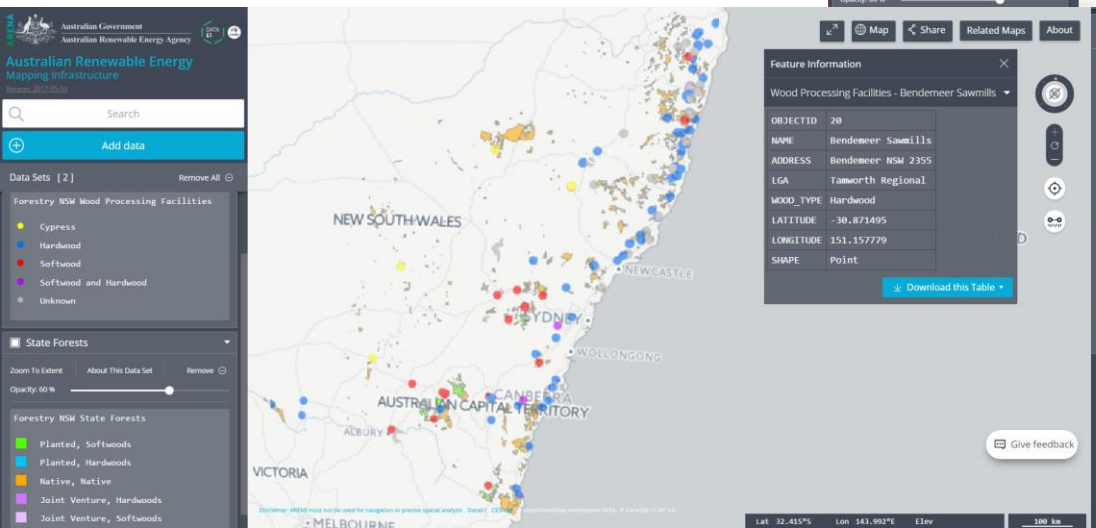
Biomass Feedstocks – New South Wales

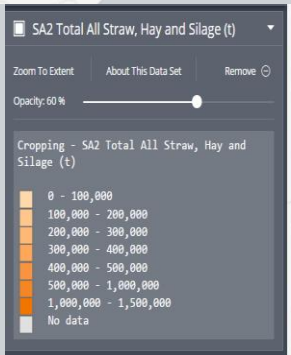
Cropping Residues - Forestry

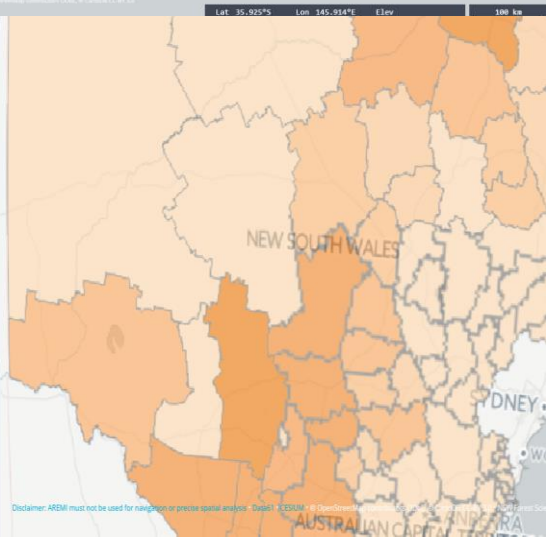
Wood Processing facilities





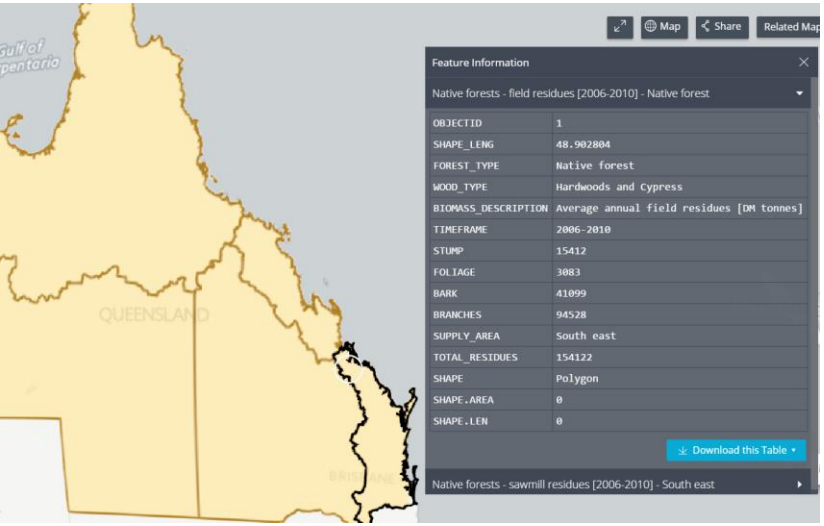


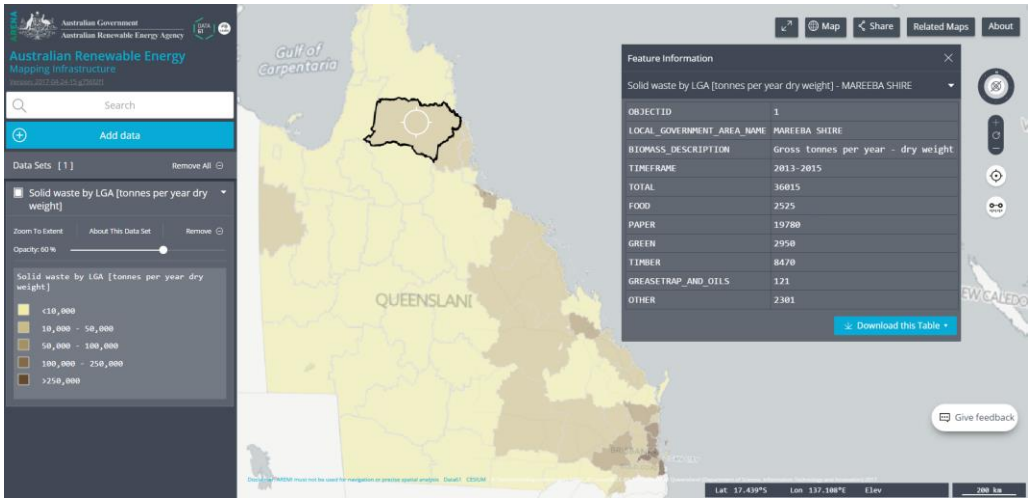


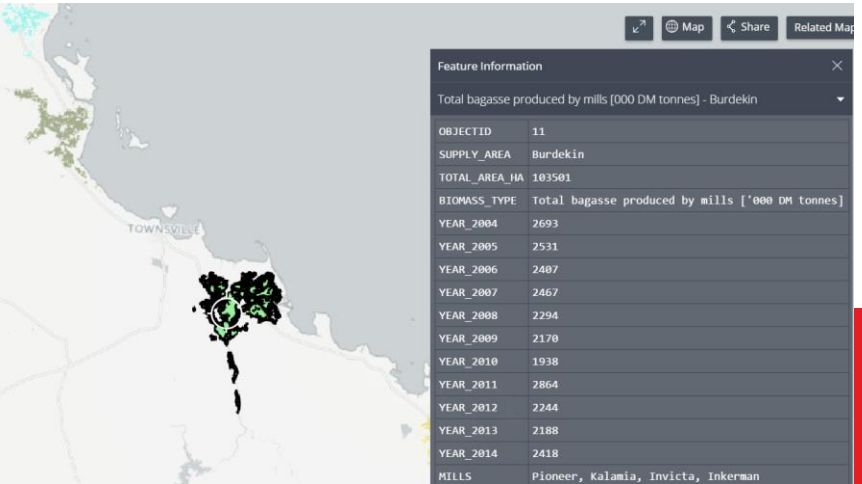


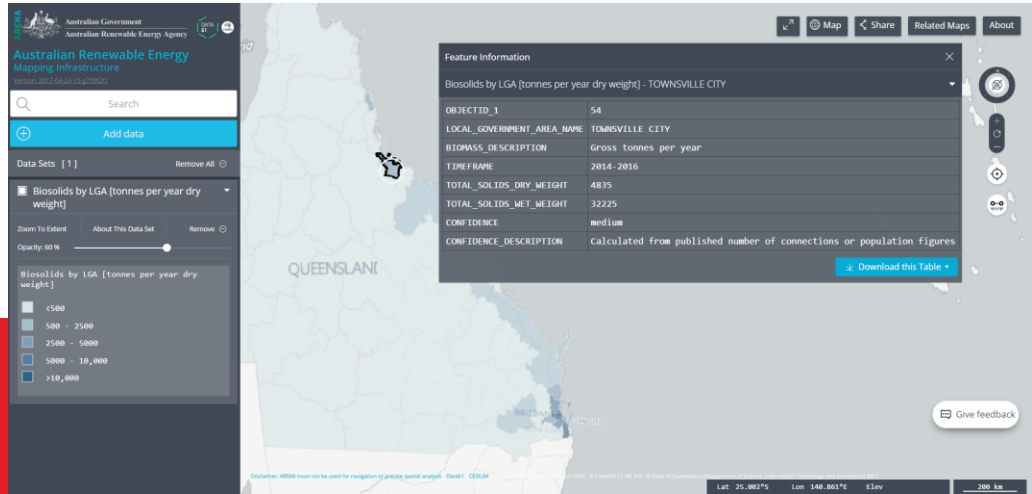
Biomass Feedstocks – Queensland

Forestry Urban Waste Sugarcane









Biomass Feedstocks – South Australia

Cropping – Livestock - Horticulture
Simulated Residual Straw
Green Triangle Forestry
MSW (Coming)