

Empowering stakeholder engagement and social science with next-gen AI

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Building social license for industries like **advanced recycling of plastic** starts with understanding community views and concerns. We are developing AI text-analysis tools to augment and accelerate this process.

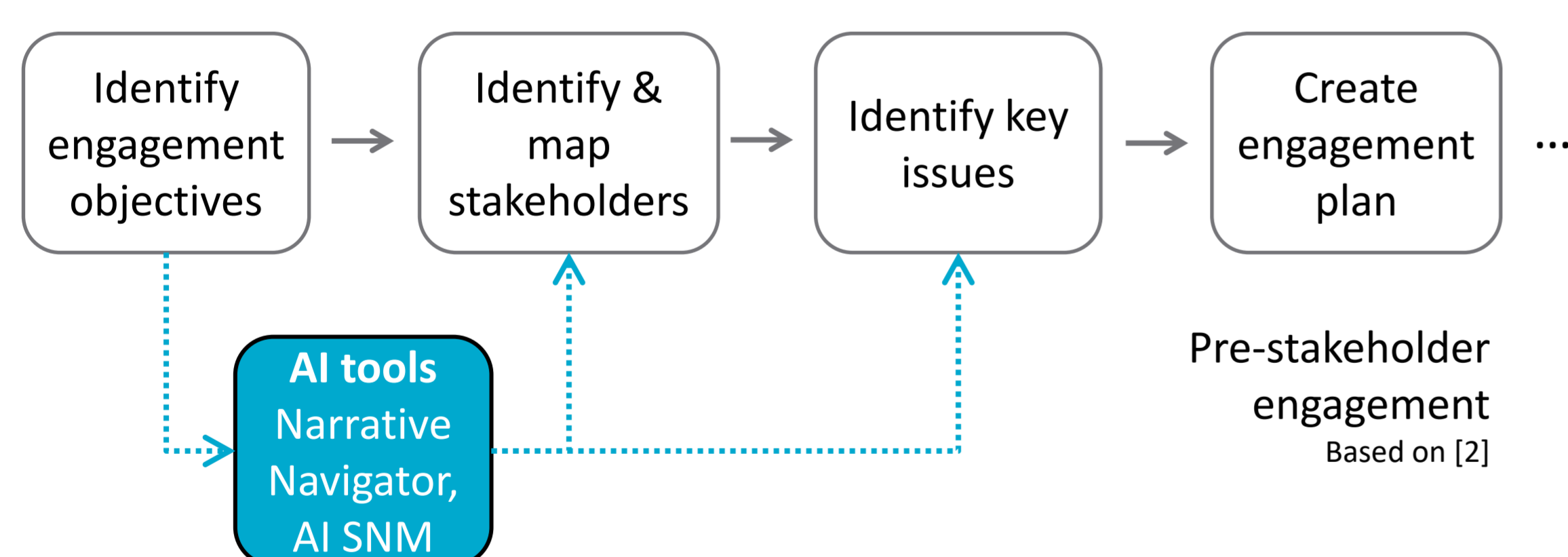
Online text data, such as news articles and social media, provide rich and up-to-date information on community attitudes to emerging industries. This can be used by:

- **Stakeholder engagement** practitioners seeking to inform how they engage the community.
- **Social scientists** researching the mechanisms of social license

However, existing text analysis approaches are limited:

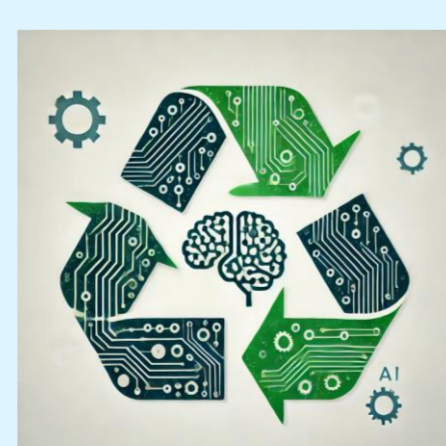
Manually text summarisation ← *Time & resource intensive*
 Off-the-shelf text-mining software ← *Lack flexibility*
Not suitable for nuanced analysis (e.g. narratives)

Stakeholder engagement practitioners see high potential in **tailored, AI-based tools to streamline the pre-engagement phase.**^[1]



Application: Advanced recycling of plastic ^[1]

What are the current & emerging public narratives on ARP, and how do they relate to Australian stakeholder networks?

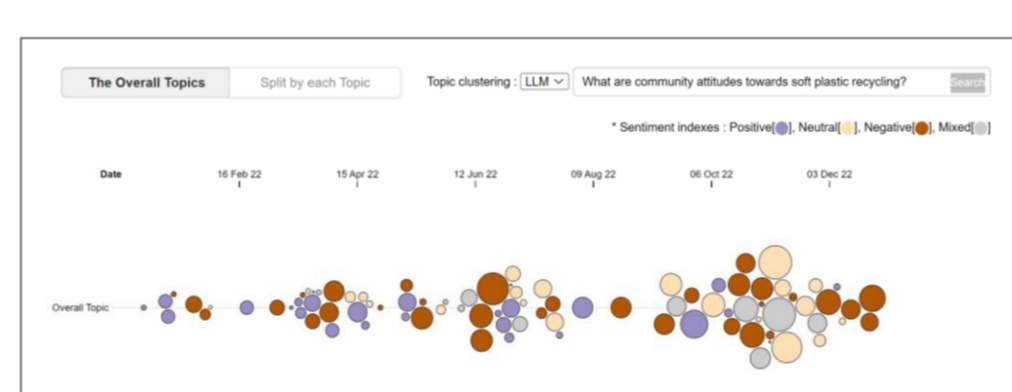


Aim: Working with social scientists, develop tools to help extract key **topics, narratives** and **networks**.

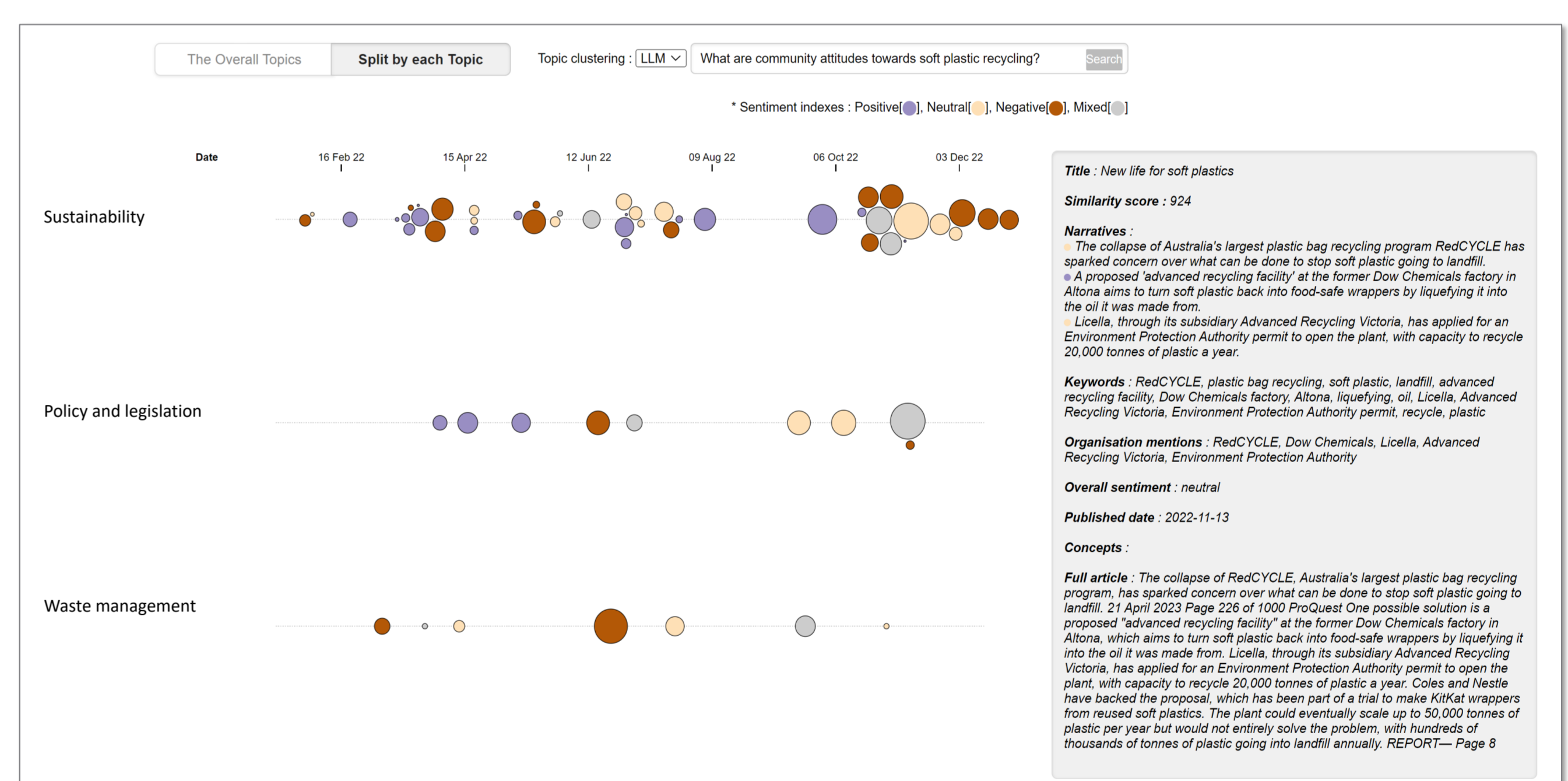
Dataset: 2200+ media articles from 2019-2022

Narrative Navigator

An interactive tool utilising a natural language processing pipeline with a large language model and dense retrieval techniques to:



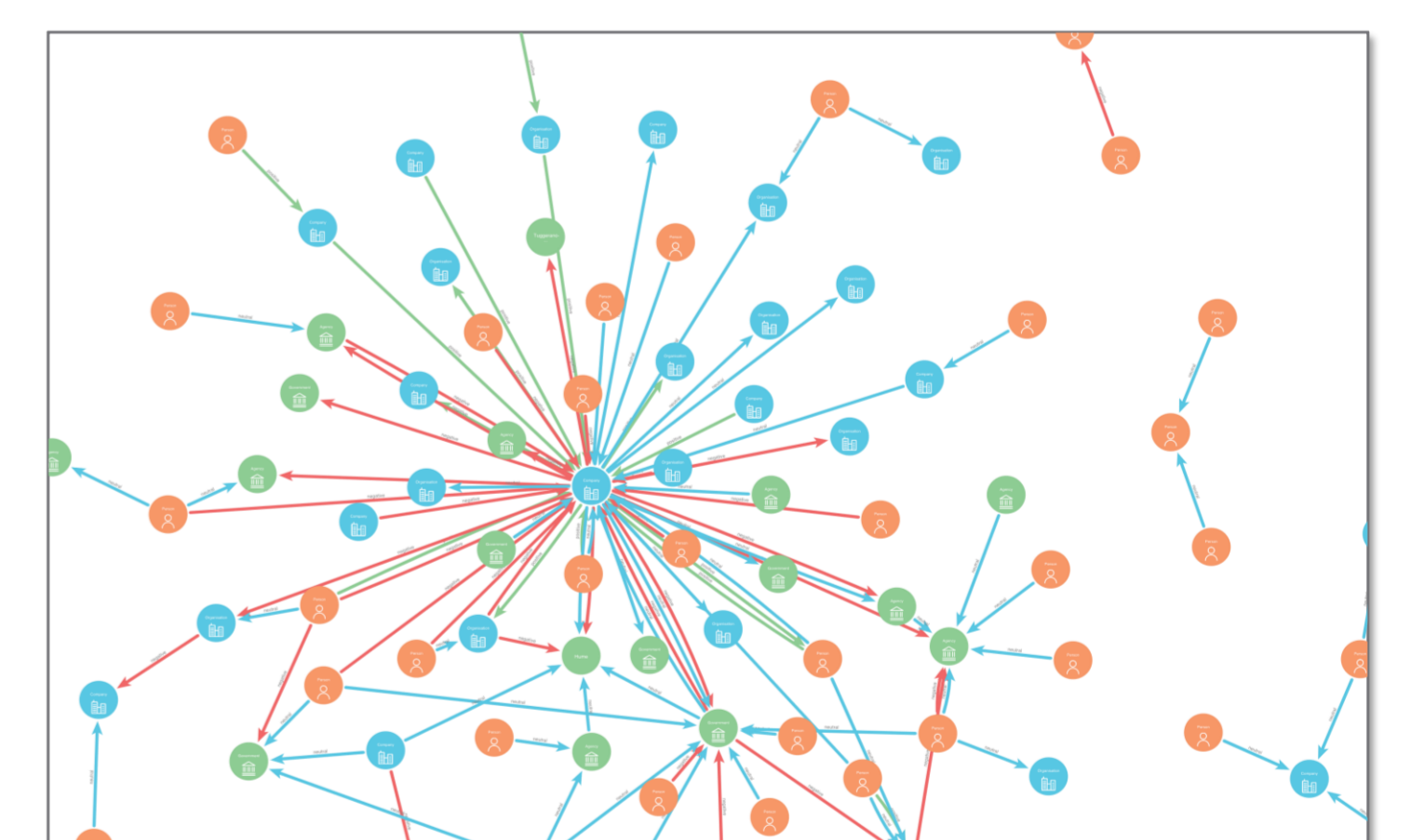
- Identify topics by clustering key terms
- Visualise topic-clustered articles over time
- Generate article narratives and sentiments
- Retrieve relevant documents for a given query



AI-driven Stakeholder Network Mapping

Combining large language model (GPT4) with social network modelling (Neo4J) to deliver stakeholder insights.

- Identify key groups
- Explore how narratives shape networks
- Identify issues that bind or polarise communities



Planned development

- Support exploration of changing and emerging narratives
- Extract high-level narratives across full dataset
- User interface design and user testing

