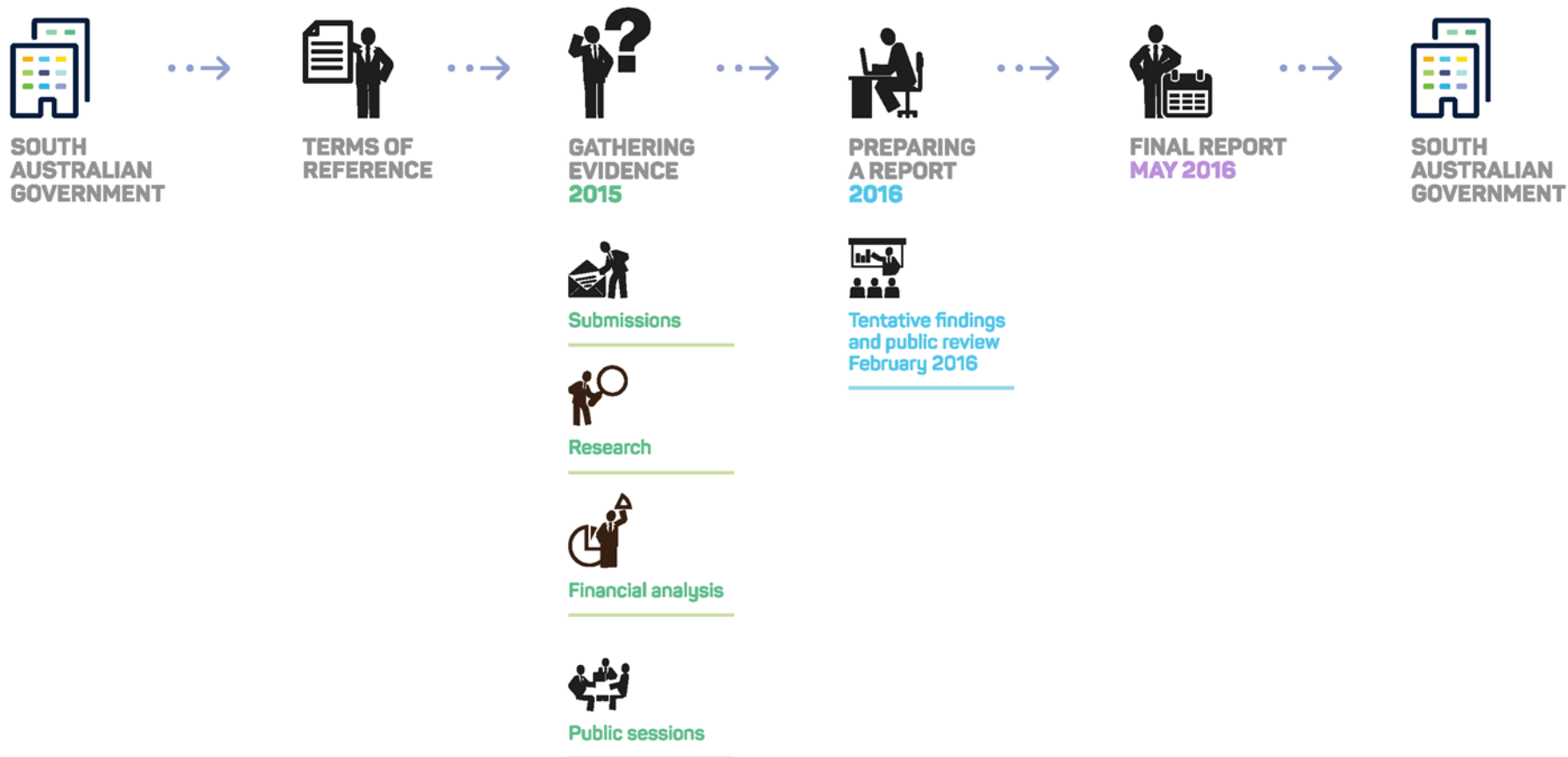




ANU Energy Change Institute
Kevin Scarce
Summary Report NFCRC

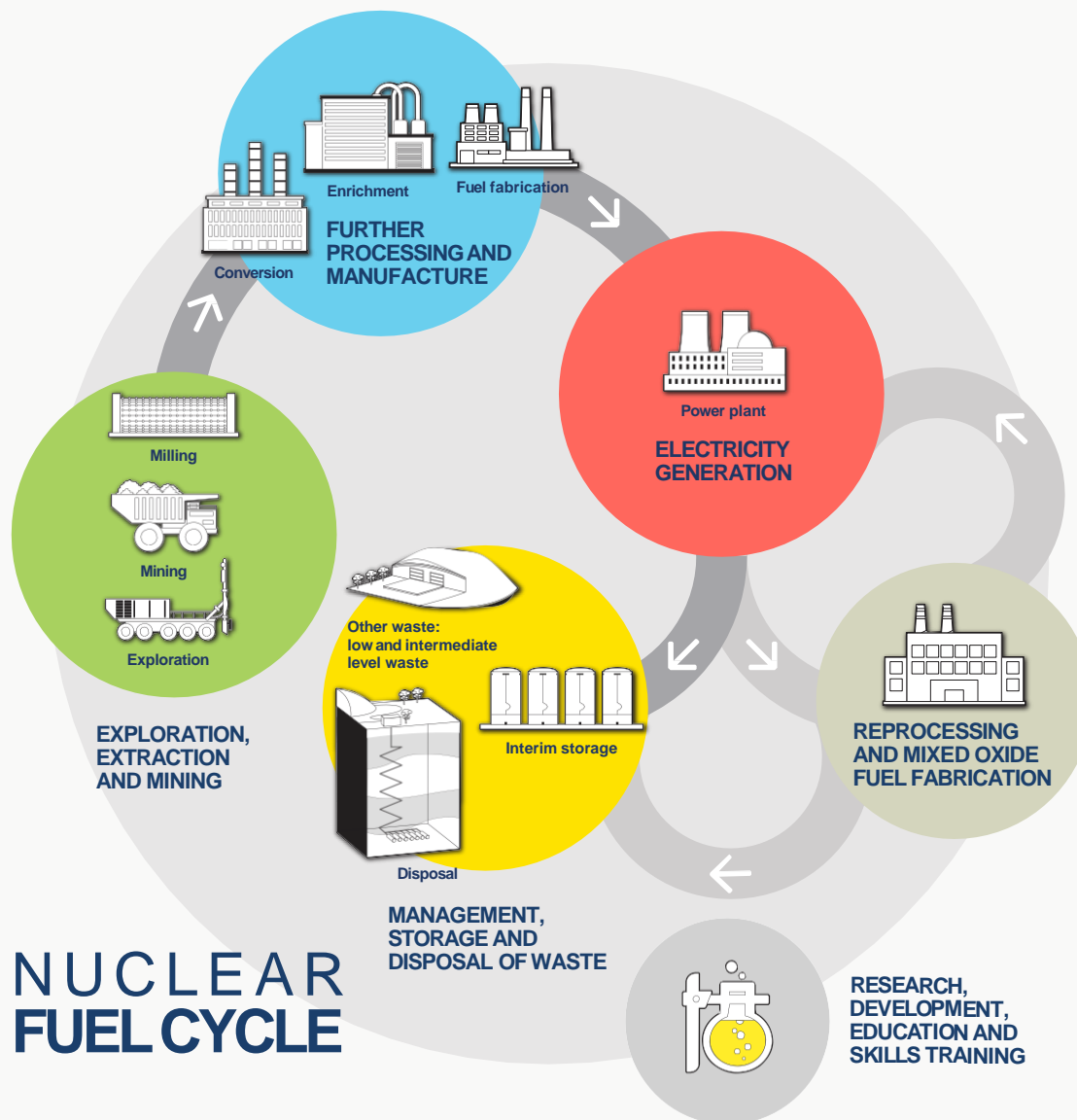
11 April 2017

Overview





[Terms of Reference and the Nuclear Fuel Cycle]



**NUCLEAR
FUEL CYCLE**



[Exploration, extraction and milling]

Existing frameworks
adequately **address risks**

Expansion of uranium **mining**
in South Australia will
provide additional benefits

Recommend:

Simplify mining **approvals**

Improve integration and
availability of geophysical **data**

Encourage and **support industry**
investment in the exploration of
greenfield locations

Ensure decommissioning and
remediation costs in advance



[Further processing and manufacture]

Risks are manageable

Not commercially **viable**
in South Australia
in next decade

Recommend:

Actively support increased utilisation
of the cyclotron at **SAHMRI**



[Electricity generation]

Safety **does not preclude** consideration of nuclear as energy option

Not viable in SA under current market rules

Potential to contribute to national **emissions abatement** after 2030

Recommend:

Remove existing **prohibitions** on nuclear power generation

Develop national policy to deliver low-carbon, reliable and low-cost electricity system

Consider **new** nuclear **reactor designs** into the future

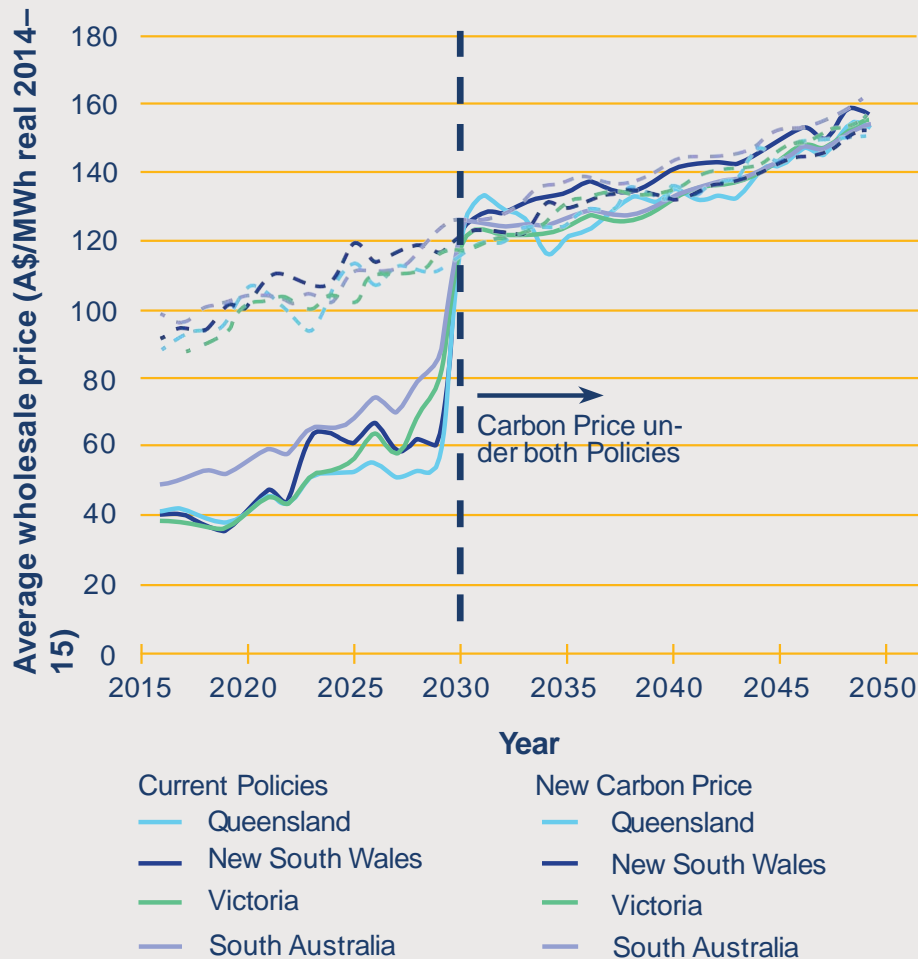


The **future** electricity system **depends** very significantly on **choices by governments** —it will not be driven by technological change and cost reductions alone

To be **credible**, **electricity policy** discussions must, but mostly don't, address the combined requirements of a **reliable**, **low carbon**, **low cost** system. Addressing **one** or **two** requirements is **not enough**.

Which mechanisms are chosen to achieve desired outcomes have unintended consequences including on regional electricity price competitiveness —a continuation of **current policies** will **damage** South Australian **competitiveness**.

[Impact on wholesale price of electricity]





[Management, storage and disposal of waste]

South Australia has
attributes and **capabilities**
to safely undertake
international **waste disposal**

Opportunity to draw on
international experience
from existing programs

Potential for **significant**
inter-generational economic
benefit to the community

Significance of **social** and
community consent

Recommend:

Pursue purpose-built
waste storage and disposal facility

Remove legislative **constraint** to
considering this opportunity

Remove legislative **prohibitions**
to enable **fuel leasing**



[Key considerations]

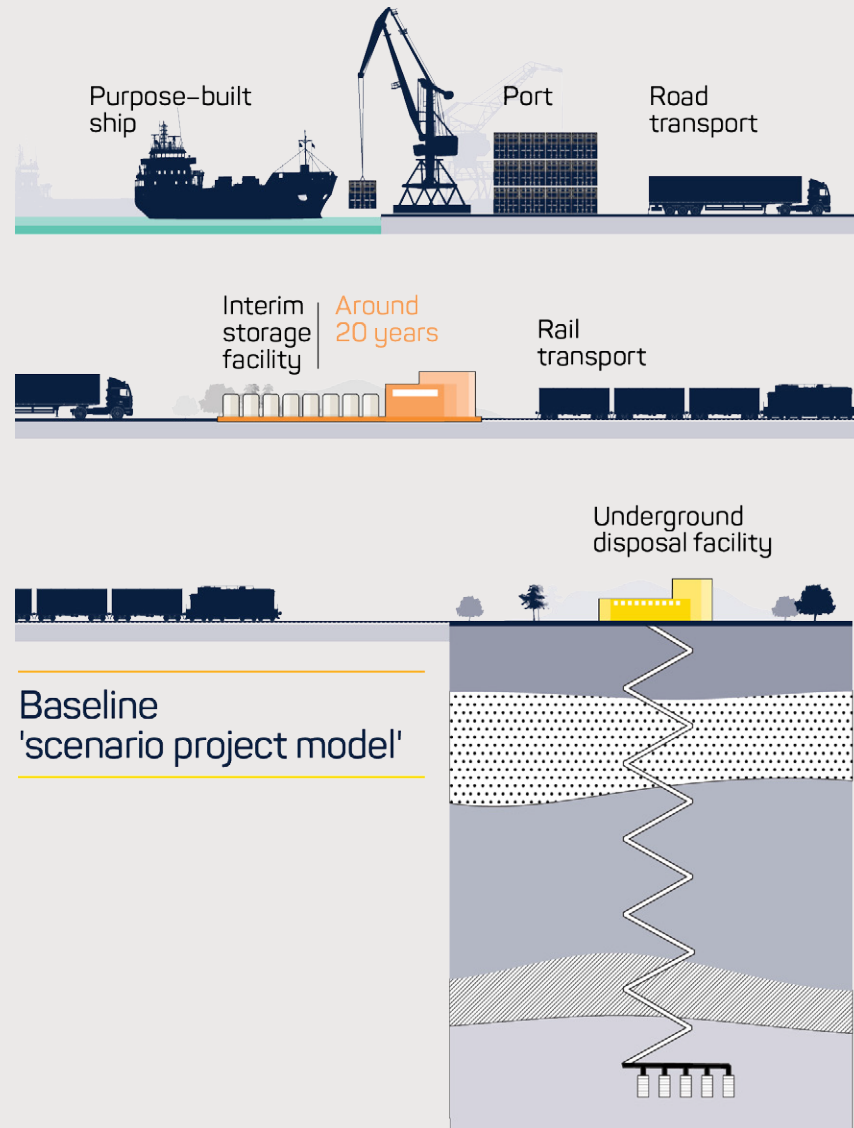
Submissions, responses and
community engagement

Key themes identified:

Safety

Economics

Industry impacts, transport,
security and non-proliferation





[NUCLEAR

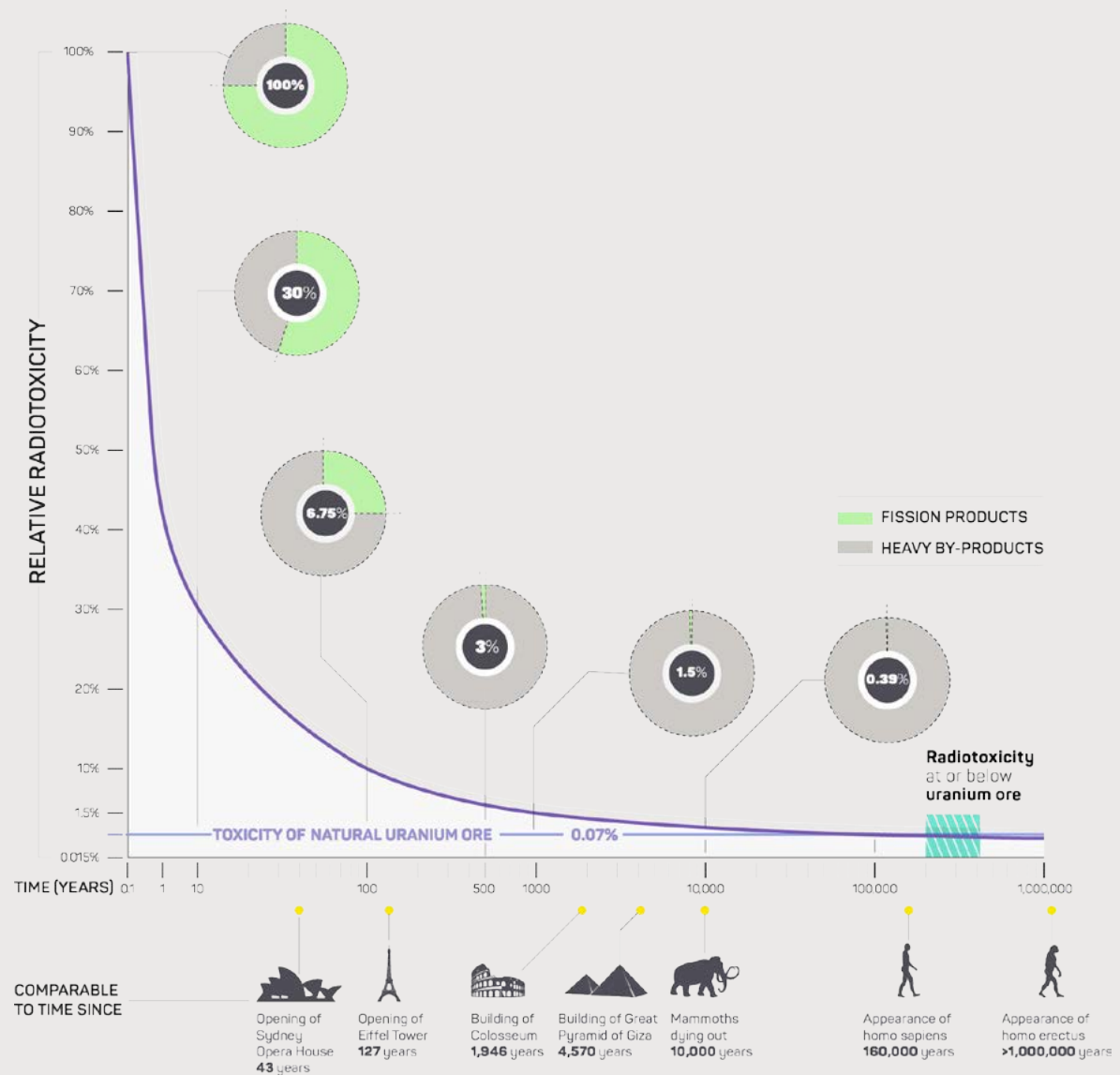
[Safety]

**Safety
assured through
combination of:**

Geology

Engineered barriers

**Detailed
understanding of
the radiological risks**





[Economics]

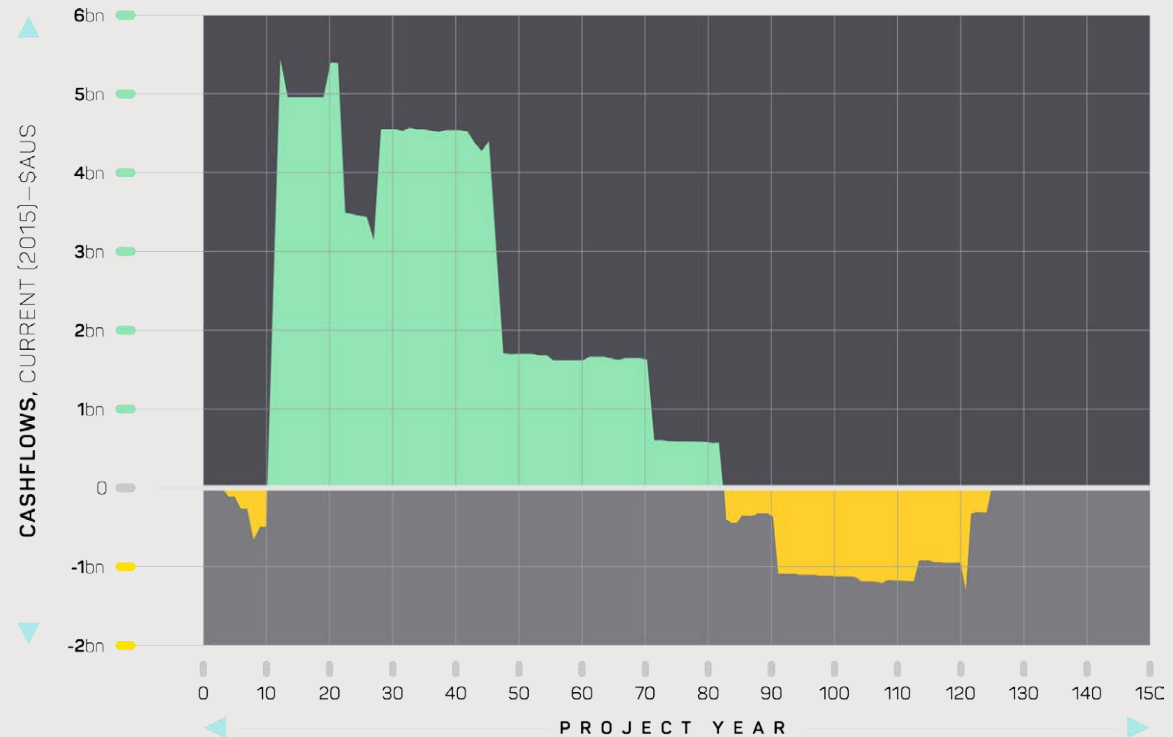
ECONOMIC MODELLING (BASELINE SCENARIO)

\$257 billion revenue, costs
of **\$145 billion**

costs include \$32 billion
reserve fund

equates to \$51 billion
discounted at 4%

State Wealth Fund
could accumulate around
\$445 billion over 70 years





[Next steps: Immediate]

State government to:

Make public the
Commission's **report** in full

Define broad **concept** to
seek community views

Establish agency with
independent board to
undertake community
engagement to assess
social consent

Agency to also:

Prepare draft **concept**
development framework
including initial siting criteria

Seek support and
cooperation of the
Australian Government

Determine
potential **client** nation



[Next steps: Future]

Assuming immediate steps
lead government to proceed
further:

Pass legislation to **facilitate**
and **regulate** proposed
development

Support detailed project
proposal, including consent-
based siting process



QUESTIONS