



UNCRD 3R Forum 2016 Adelaide

***Advancement of 3R technologies
Future Directions and the Green Economy***

Vaughan Levitzke
Chief Executive Green Industries SA



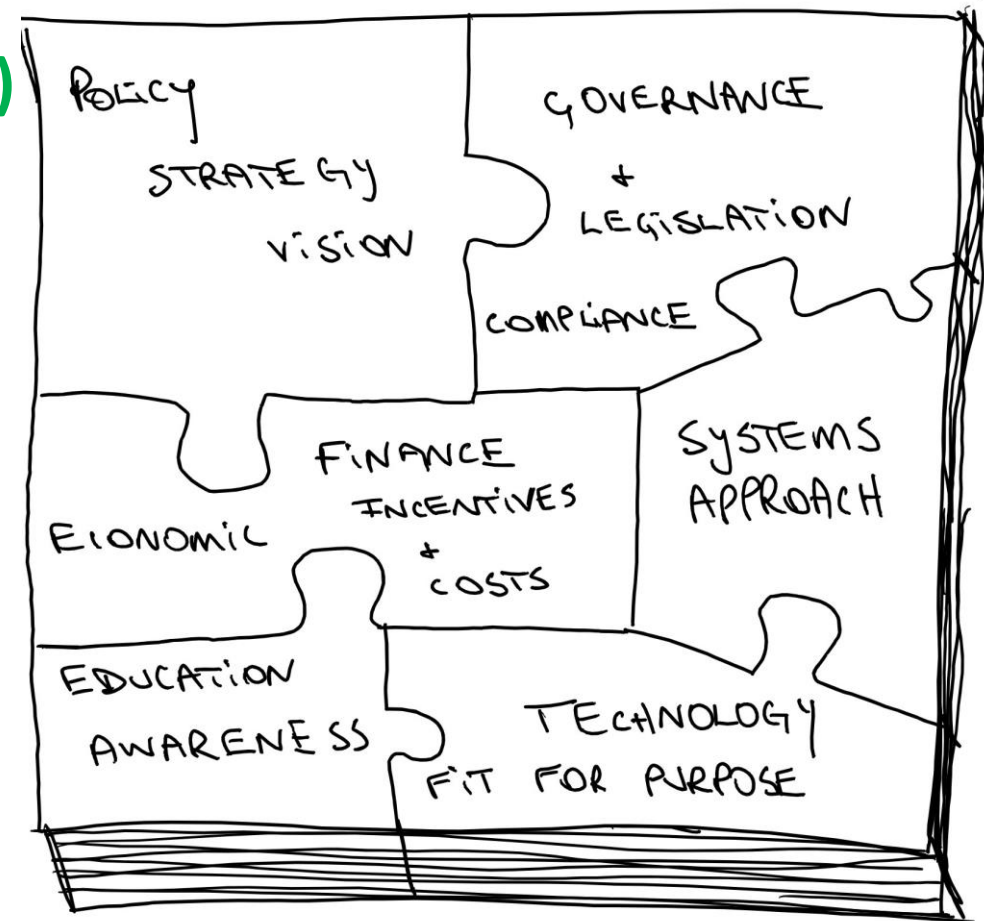
Government of South Australia
Green Industries SA



The Six 3R 'Technologies'

- **Policy (Strategy)**
- **Governance (incl Legislation and Compliance)**
- **Economic (Financial levers)**
- **Systems approach**
- **Technologies that fit the purpose**
- **Education & Awareness (Behavioural change)**

- ***Integrated- enabled, innovative, outcome oriented.***



Policy

- Set the **broad goals/** the over-arching direction and **vision**,
 - fundamental basics such as maximising the on-going value of materials through source separation, and
 - key performance indicators such as Improved public health
- **Empower** people to make changes
- Set **Directions and targets-** accountability
 - Waste diversion from landfill
 - Less pollution/ emissions
 - More recycling and re-use.

Governance

- Set the **operating rules** for actions
- Establish the **compliance and enforcement** framework
 - Powers, checks and balances, transparency
- Establish verifiable **data** and public **reporting** on performance
- Ensure appropriate **money** flows and **accountability**.

Economic and Financial

- **Funding** for the regulator, the change agents and to finance the incentives for change.
- Build **expertise**, the capacity and **skills** to develop the sector
- Underpins the **roles** of service providers, the private and public sector
- Provides **incentives** that build innovation and new technology
- Economic modelling and **analysis** to support **investment**
- Understand **markets** and develop strategies to maximise benefits and minimise risks
- Links to procurement

Systems Thinking and Approach

- Understand how all the **parts fit together**
- **Invest** first in the missing links that will directly **impact** to achieve the outcomes desired
- **Adapt** for local conditions and for local cultural norms
- Build to **scale** and identify benefits of **common systems**
- Make use of **under-utilised** assets (human and technical)
- Strive for **high quality** outcomes and continuous improvement

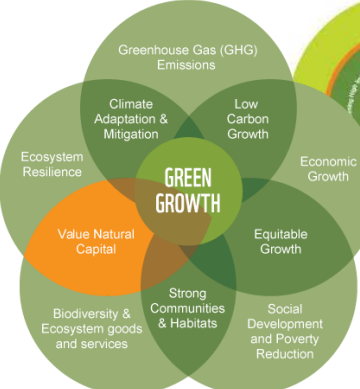
Education, Awareness and Behaviour

- Build community **knowledge, collaboration** and **shared expectations**
- Make them **aware** of the problems and **what they can do** to help
- **Engage** trusted **NGOs** to help in the process
- Provide **systems** that enable people to **participate**

Technology/ Science/ R&D

- Look for **best practice** solutions
- Identify **tried and proven** equipment
- **Adapt** these to local conditions, and make fit for purpose
 - Its ok to import, but make sure it can be maintained, adapted and works in the harsh environment
- **Engage** local researchers to help develop and build local solutions
- Technology to design out waste!!!!

The 'Green Economy'



Green Economy Think Tank



**WASTE AND RECYCLING
SECTORS INCLUDING
ENERGY FROM WASTE
AND BIOMASS**

Improved resource efficiency

Solutions for Problematic wastes

Reducing food waste

Sustainable procurement

**Innovation and investment in new processes/
technologies**

Recycling and re-manufacturing



INNOVATION AND COLLABORATIVE ECONOMY

Collaborative systems of production and consumption

Developing new business models enabling the Circular Economy

Products, materials and services to further the green economy



**INNOVATION,
INFRASTRUCTURE
INVESTMENT,
EDUCATION AND
EMPLOYMENT GROWTH**

Developing and delivering educational and training resources

Promoting the export of intellectual property

Investing in infrastructure to maximise resource recovery opportunities and economic growth



**CLIMATE CHANGE
MITIGATION AND
ADAPTATION**

Building capability, reducing carbon emissions

Investment in new processes and systems

Resilience and Disaster waste management

Reducing South Australia's carbon footprint and helping make Adelaide Carbon Neutral.

South Australia's Recycling/ Remanufacturing and waste sector

- For SA – (population of just 1.6m)
 - Currently estimated 4,800 jobs in recycling, remanufacturing and waste management now
 - Most in remanufacturing and recycling.
- \$1billion turn-over per annum
- **Under a moderate diversion from landfill scenario,**
- We can create
- **1,000 more jobs in 10 years**
- **Value expected to double in 10 years ie \$2bn**
- **Another \$110m in Gross State Product in 10 years**

What's the Value of a Circular Economy?

- This will be even more:
 - as it touches **more** sectors such as energy and water, housing, agriculture and construction etc. and
 - There are more opportunities to add value in supply chains.
- **A Work in progress- more to come!**