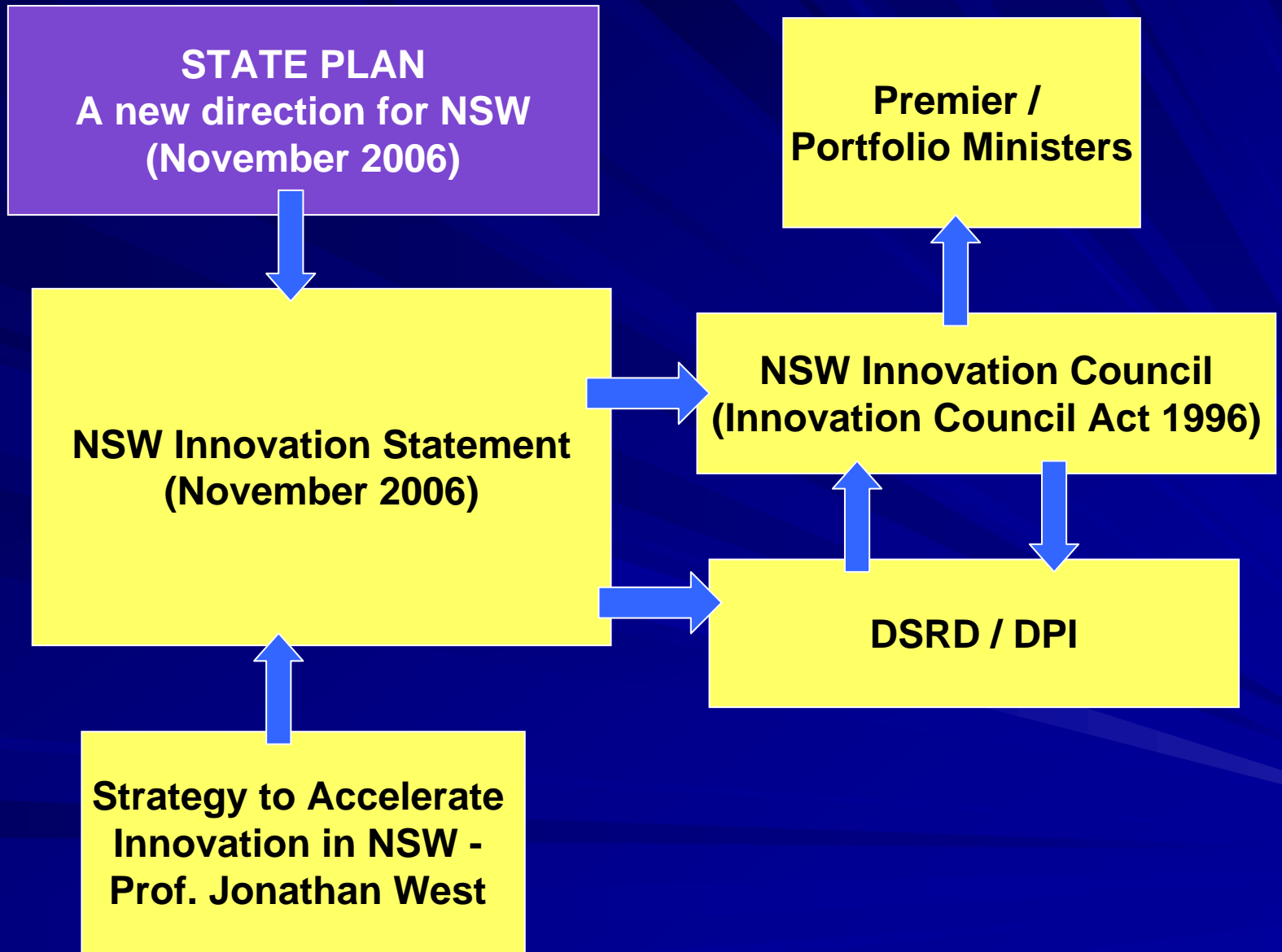


# Fostering Innovation and Opportunity in CCTs

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# Three core principles...

1. The efforts of government to support and build innovation should be focused on those industries that are most likely to produce benefits for the broader economy, and where innovation will be boosted by the government's support.
2. Policies and support to these sectors should be based on an analytical understanding of the actual innovation process specific to these sectors in the NSW economy.
3. The Government's role should be focused on complementing not replacing the market.

# First sectors for investigation...

- Logistics and transaction services
- Financial services
- Entertainment design and media
- Manufacturing
- Resources – especially coal

# The five goals of innovation policy in NSW...

- Improve human capital.
- Upgrade knowledge and information infrastructure.
- Reduce the cost to business of utilising science and technology.
- Encourage capital allocation to invest in innovation.
- Reduce the regulatory barriers to innovative NSW companies.

# General approach

- Seek and encourage innovation throughout the value chain – not simply limited to science and research.
- The purpose is economic development.
- The focus is on identifying those things that are of most value to NSW and actions that have real effect.

# NSWIC coal focus...

1. What really drives the innovation process?
2. What kind of regulatory / policy environment will best encourage innovation throughout the value chain?
3. Skills: Where are all the scientists and engineers going to come from?
4. How do we turn a problem into economic opportunities for NSW?
5. How can we foster promising new ideas?

## 4. How do we turn a problem into economic opportunities for NSW?

- Prime government / industry motivation for CCT/CCS is “the problem”:
  - Climate change (real or political problem)
  - Power supply options (baseload, demand issues are real)
  - Defensive response to looming carbon constraint / price
  - Threat to major export?
- Most activity is defensive or reactive.

# Aus / NSW headed in the right direction on “the problem”...

- ETS
- Industry / government funding
- Strong R&D capacity
- Important demonstration projects underway (e.g. oxyfuel, PCC, Otway)
- Regional geological assessments
- International collaboration
- Renewed focus on national approach
- CCS taskforce – recognition of the infrastructure challenge

# But is there a quid in it?

- Carbon price creates many potential market opportunities.
- Also creates massive costs and potential pain.
- Getting “ahead of the pack” on emissions reduction make us feel good – but will hardly be a blip on climate outcomes.
- We must actively seek and foster compensating economic opportunities / benefits.
- This goes beyond mere cost avoidance.

# Give greed a chance...

- How do we identify potential opportunities?
- How are we assessing the commercial potential of what we are doing?
- How are we supporting our budding CCT / carbon entrepreneurs?

## 5. How can we foster promising new ideas?

- Our focus on geological storage is appropriate – and there may well be a quid in it for Australia if we succeed.
- But what else can we do with CO<sub>2</sub>?
- There are unexplored possibilities
  - Algal transformation
  - Microbial transformation
  - GMOs?

# Waste transformation and mineral carbonation...

- Production of stable magnesium and calcium carbonates through combination of CO<sub>2</sub> with available industrial waste streams (e.g. steel slag, alkaline flyash, desal brines, mining wastes)
- Mineral carbonation?
- GreenMag-University of Newcastle

# Real Options Approach...

- Rewards flexibility, agility.
- “Lots of seeds”.
- “Fail fast”.
- “Tweaking”.

## How do we realise the economic potential of a carbon constrained world?

- A pre-feasibility fund?: Should a proportion of the available government and Industry funding be set aside for early feasibility studies for bright ideas?
- Office of Carbon Opportunities / Commercialisation?
- Cleverer incentives for risk takers and first of a kind pioneers?

[www.innovation.nsw.gov.au](http://www.innovation.nsw.gov.au)