Government policies to improve energy efficiency and resource productivity

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South Africa
• Africa’s first comprehensive masters and doctoral programmes in sustainability
• Policy research for national and local government
• Design and construction of Sustainable Neighbourhoods/Eco Villages
• Community-based development
• Global networks – Shack dwellers
  International, social enterprises
What’s going on with policy?

• Policy-making is in turmoil - decision-making is about crisis management, reactive, overload
• Role of the state is fundamentally changing
• Global economic power shifts, decline of the USA
• Obama says there are 2 challenges – global recession & global warming, but policy-making machinery has no way of understanding this link

• “Many commentators have noted that the Wall Street meltdown marks the end of the Reagan era. In this they are doubtless right.” (Francis Fukuyama, Newsweek, Oct 13 2008)
Rethinking transition and State Roles

- **Socioecological transitions** – 13 000 years (Fischer-Kowalski et. al. *Socioecological transitions and global change*, 2007)
- **New role for the state** – converging trends in development economics
Socioecological transitions

- Agricultural Revolution from hunter-gatherer to agricultural SER – 13,000 years ago
- Industrial Revolution from agricultural to industrial SER – 250 years ago
- Sustainability Revolution from industrial to sustainable SER - ???
Industrial transitions

Figure 3. The social assimilation of technological revolutions breaks each great surge of development in half.
<table>
<thead>
<tr>
<th>GREAT SURGE</th>
<th>TECHNOLOGICAL REVOLUTION</th>
<th>INSTALLATION</th>
<th>DEPLOYMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core country</td>
<td>The Industrial Revolution</td>
<td>1771 Canal mania (Britain)</td>
<td>1793–97 Great British leap</td>
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<td>1st</td>
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<td>1829 Railway mania (Britain)</td>
<td>1848–50 The Victorian Boom (Britain)</td>
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<td>Britain (spreading to continent and US)</td>
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<td>Age of Steel, Electricity and Heavy Engineering</td>
<td>1875 Transcontinental investment in railways, ships and ports</td>
<td>1893–95 Belle Époque (Europe) &quot;Progressive Era&quot; (USA)</td>
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<tr>
<td>3rd</td>
<td>USA and Germany overtaking Britain</td>
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<tr>
<td>Age of Oil, Automobiles and Mass Production</td>
<td>1908 Autos, electricity, radio, aviation and real estate (USA)</td>
<td>1929–33 Post-war Europe</td>
<td></td>
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<tr>
<td>4th</td>
<td>USA (spreading to Europe)</td>
<td></td>
<td>Golden age USA (USA-Europe)</td>
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<tr>
<td>Age of Information and Telecommunications</td>
<td>1971 Telecoms and Internet mania (global)</td>
<td>2001–?? Institutional recomposition</td>
<td></td>
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Option 1: greening of ICT-based industrial transition

Agric SE regime

Industrial SE regime

Sustainable SE regime?

Global re-industrialisation

Global re-industrialisation

2008-2011
Option 2: 6th industrial transition

- **Agric SE regime**
- **Industrial SE regime**
- **Sustainable SE regime?**

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- **Installation**
  - IRRUPTION
  - FRENZY

- **Deployment**
  - SYNERGY
  - MATURITY

- **Global re-industrialisation - shortlived**
- **Sustainable living, global equity**

- **Age of sustainability**
- **2008-2011**
- **2025**
- **Renewables, decoupling, dematerialisation, sustainable living**
Dual transition?

- Post-October 2008 crash: start of deployment phase of the 5th industrial transition?
- Post-2006: start of the 3rd socioecological transition?
- Can they go together? Or is the 3rd socioecological transition dependent on the 6th industrial transition? Messy mix?
- Depends on the state....
Rethinking the developmental state

- Endogenous growth theory – innovations as drivers of growth
- Institutional economics – institutions matter
- Amartya Sen’s theory of capabilities for development – beyond GDP growth per capita, hence capabilities & deliberative democracy
‘Modern Economics’

- “Development is no longer seen primarily as a process of capital accumulation, but rather as a process of organizational change.” – (Hoff and Stiglitz, “Modern Economic Theory and Development” in Meier, G. & Stiglitz, J. Frontiers of Development Economics)
Figure 2 The Common Characteristics of High, Sustained Growth

- Based on 13 “winners”
- No reference to decoupling

Source: Commission on Growth and Development, Growth Report, 2008
Ecological Economics

- Natural & ecological resources as the key constraint to growth – hence the importance of decoupling

Figure 2.2: Conceptual and stylised representation of a decoupling graph. Source: The Natural Edge Project (2008)
Innovation

Technological innovation

Institutional innovation

Relational innovation
Probabilities

- Deployment period of the ICT-based industrial transition will be light green & short-lived
- 6th industrial transition is probably already underway – ICT is key, but not the focus
- Levels of investment in innovation will determine the depth & speed of the 6th transition

Figure 3. The social assimilation of technological revolutions breaks each great surge of development in half

Based on Perez (2002) p.37
Synthesis

- Bringing the state back in, but not a return to a Weberian golden age – governance, complex partnerships, co-production
- Dynamics of the dual transition- messy, contradictory, uneven, but watch the VC funds
- Innovation as driver, but sustainability/ decoupling is not yet the focus – ‘green collar jobs’/cap-and-share/global governance
- Beyond specialisation?
- Are things changing fast enough? – tracking the rate of change and learning
Policy-making for resource productivity – the big issues

- Transcending the split within government between economic & environmental policy-making
- Linking energy policy decisions to a sustainable resource use perspective – avoiding the bio-fuels disaster story
- Linking new global financial architecture to global deal on global warming and the environment – ghost of WSSD 2002 has come back to haunt us, Obama factor, WEF/WSF?
- Support the bottom-up processes led by local governments & communities – ICLEI, global social movements, etc
- Policy-science linkages, and overcoming the divisions with science – transdisciplinarity/sustainability science
- Investing in innovation as the core focus of transition governance, especially in developing countries – new role for the developmental state