REGIONAL PLANNING & SUSTAINABILITY RESPONSES

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Global, Regional & Local Context

- Global Context
  - Rates of change, interconnectivity, urbanisation, global economy & climate change.
  - Oil peak by 2030.
  - Carbon economy.
  - Green economy – US, EU, China.

Global, Regional & Local Context

- Regional Context:
  - Sub-Saharan and Southern Africa face water shortages & conflicts, high rates of urbanisation, migration,
  - National economic growth is minerals, carbon and energy intensive, and is financed by high levels of debt financed consumption and low levels of savings and investment, and lowered trade barriers.
  - Growth is not being driven by diversification through innovation and investment, as expected in post-1994 economic policies of SA.

Global, Regional & Local Context

- Local Context:
  - Energy, Water, Oil, Food Interdependencies.
  - Poverty & Inequality.
  - Unemployment.
  - Basic Services.

Limits to Growth

- Energy:
  - Energy (and water) intensive economic growth.
- Water:
  - Reliable water yield will decrease with stream flow and prices may increase up to 40% in the medium to long terms (Muller, 2007).
  - Agriculture – sector growth despite decrease in contribution to GDP.
  - Minerals-based, energy intensive growth.

Limits to Growth

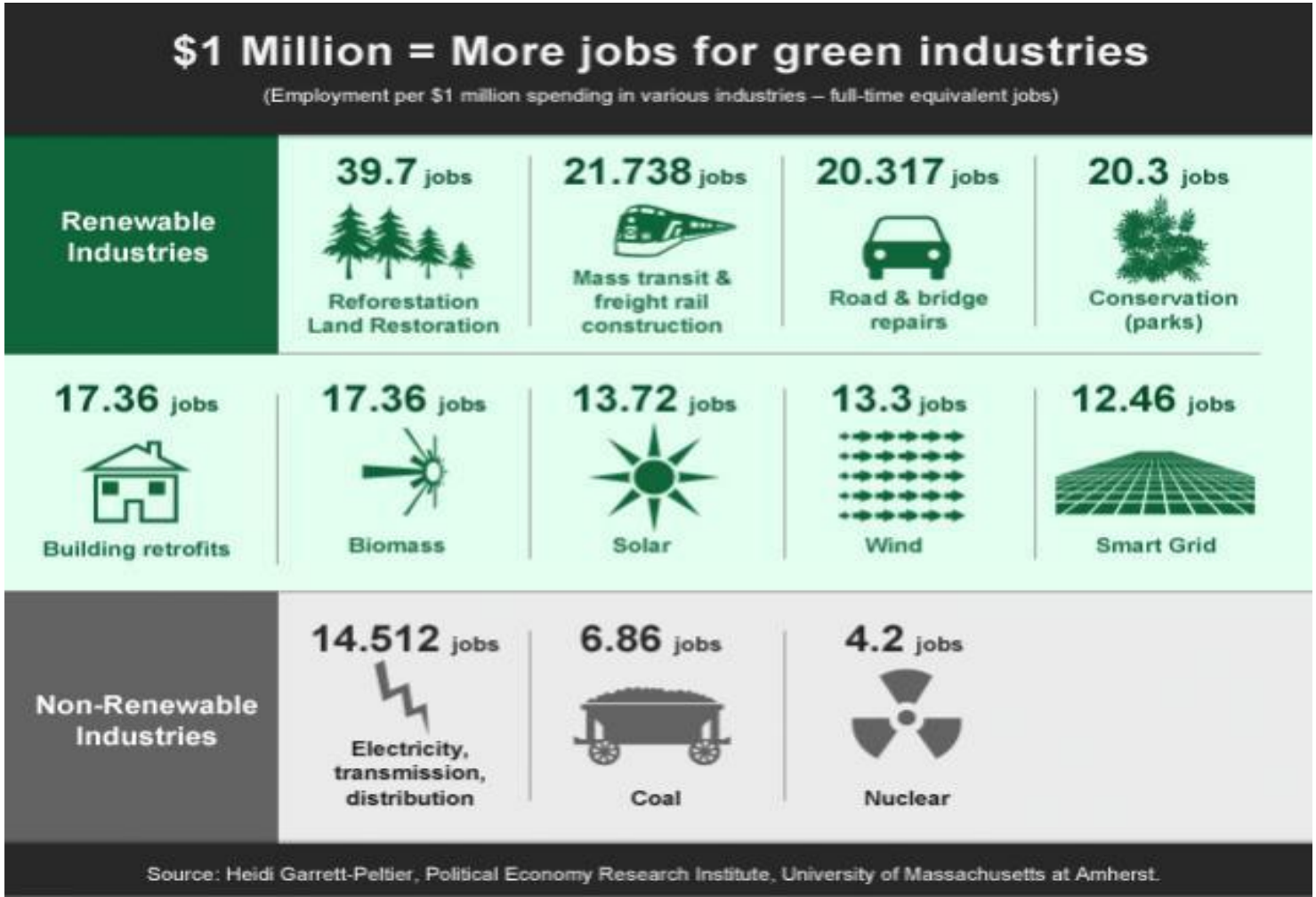
- Oil:
  - Low reserves – high dependence on imports and coal to liquid technology i.e. Sasol but contributes to $1/5^{th}$ of total energy consumption.
  - Transport sector – highest consumption, petroleum intensive.
- Carbon:
  - Fossil fuel (coal) and oil dependent growth path.
  - Carbon economy opportunities remain unexploited (BEET is high).

Sustainability Challenges

- Sustainability challenges are not just environmental, they are developmental:
  - Informed by concerns over socio-economic inequality and fragmentation, and infrastructure development.
- Wide scale behavioural change required – potential stimuli:
  - Normative Change (Stern, 2000, Ehrlich & Levin) e.g. Mainstreaming.
  - Resource Rents (Sinner & Scherner, 2007)- auctions, royalties, taxes.
  - Infrastructure Leapfrogging (Muller, 2007).
  - Innovation & Diversification.

Sustainability & Green Opportunities

- Green Jobs:



Sustainability & Green Opportunities

- Energy:
  - Energy (and water) intensive economic growth.
  - High solar potential for CSP & solar water heater geysers.
  - Decentralized renewable energy production and consumption.
  - Retrofitting.
- Water:
  - Agriculture, minerals and energy sector efficiencies.
  - Recycling and grey-water use.

Sustainability & Green Opportunities

- Waste:
  - Recycling infrastructure for waste:
    - Source separation management systems.
    - Waste to energy, and waste to fertilizer.
  - Mining waste.
- Oil:
  - Transport sector – switch to public transport, fuel switching and rail.
- Carbon:
  - Energy measures – previous slide.
  - Transport.

Sustainability & Green Opportunities

- Biodiversity & Conservation – Working with communities:
  - Conservation:
    - Working for water
    - Wetland protection
    - Alien clearance
  - Innovation:
    - Bio-prospecting.
    - Bio-mimicry.
  - Eco-tourism:
    - Low footprint tourism.

Sustainability Enablers

- Resource rents – revising system of property rights used to govern access and management of natural capital.
- Improved mitigation and adaptation.
- Infrastructure leapfrogging:
  - Public transport and rail.
  - De-centralised energy production and consumption.
  - Residential, and other building efficiencies.
- Innovation.

Benefits: Green Economic Development

Table: courtesy - Peet du Plooy

Investment	**Competitiveness**	**Jobs**
Renewable energy: solar, wind, bio-energy [R10bn's]	Solar, coastal wind electricity	White collar: [5 000+] in planning, engineering, enviro-management…
Transport: EV (batteries) and public transport [R10bn's]	Water savings and waste water treatment	Blue collar: [20 000+] energy supply and savings component manufacture and installation
Energy savings: SWH, smart meter [R1bn's] (+ deferred power station investment)	Public transport (rail, BRT): displace imports, working cities	Job opportunities: [100 000+] in "Working for…", land-based industries (eg. bio-energy) and recycling
ICT: Smart grids, buildings	Motor industry: move to EV and redeploy skills + mnf. capacity in clean energy	Livelihoods: bio-energy, PV, PES [500 000+]