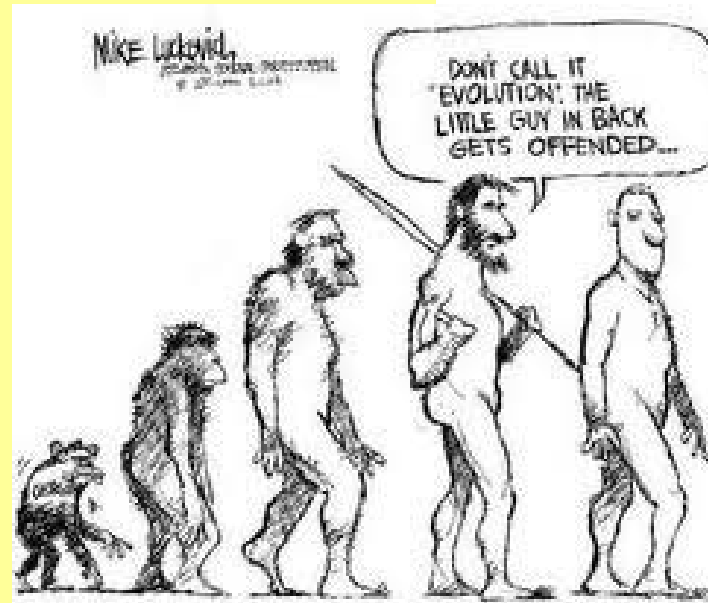


RENEWABLE ENERGY photovoltaic cells
FUEL CELL TECHNOLOGY
sun power hydrogen economy biofuel to s
reducing emissions solar power
efficient alternative geothermal energy
HYDROELECTRICITY POWER
ALTERNATIVE ENERGY
microgeneration
biomass wind farm generates
GREEN ENERGY CONSERVATION
perfecting the process
wave power al en biogas production
methane environmental solutions
green technology
biogas biomass heating system
PASSIVE POWER greenhouse gas reduction
concentrating solar energy
local generation wind turbines
reliable biodegradable wastes
gigawatts Syngas trapping tidal power
LONG-TERM BENEFITS low impact



Green Energy:

A production process or an approach?

Thomas Esakin: CKES190: 09 Feb/12

A green chalkboard with a white silhouette of a tree in the background. The text is written in black on the chalkboard.

Our intent today is to:

- ✓ Raise questions;
- ✓ Encourage you to engage in follow-up research; and
- ✓ Inspire you to expand your thinking on “Green Energy”

“A context without a subtext is a pretext”.



First, two questions:

What is... *green energy*?

What is... *sustainable energy*?

Green Energy: Renewable Energy

**Green
Energy**

+

**Energy
Efficiency**

=

**Sustainable
Energy**



However, consider:

Is there also a “third way” for energy and sustainability...?

CCTV-9 report (2011). “Solar Bottle Lights.”

Available from

<http://www.youtube.com/watch?v=SBWi3Nt>

ND68 [Accessed: 09 February 2012].

What is...
***Sustainable
Development /
Sustainability?***

UN World Commission on Environment and Development (1987):

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

It contains within it two key concepts:

1. the concept of 'needs'...; and
2. the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.”

- *3-legged stool*
- *3BL = Triple-Bottom-Line*
- *PPP = People, Planet, Profits*
- *3E's = Economy, Environment, Equity*

Collectively all equal:

The 3 mutually-reinforcing
social, environmental, economic
dimensions of sustainability.

**Sustainability is...Nothing
less than:**

***“...a profound rethinking of
a dominant paradigm.”***

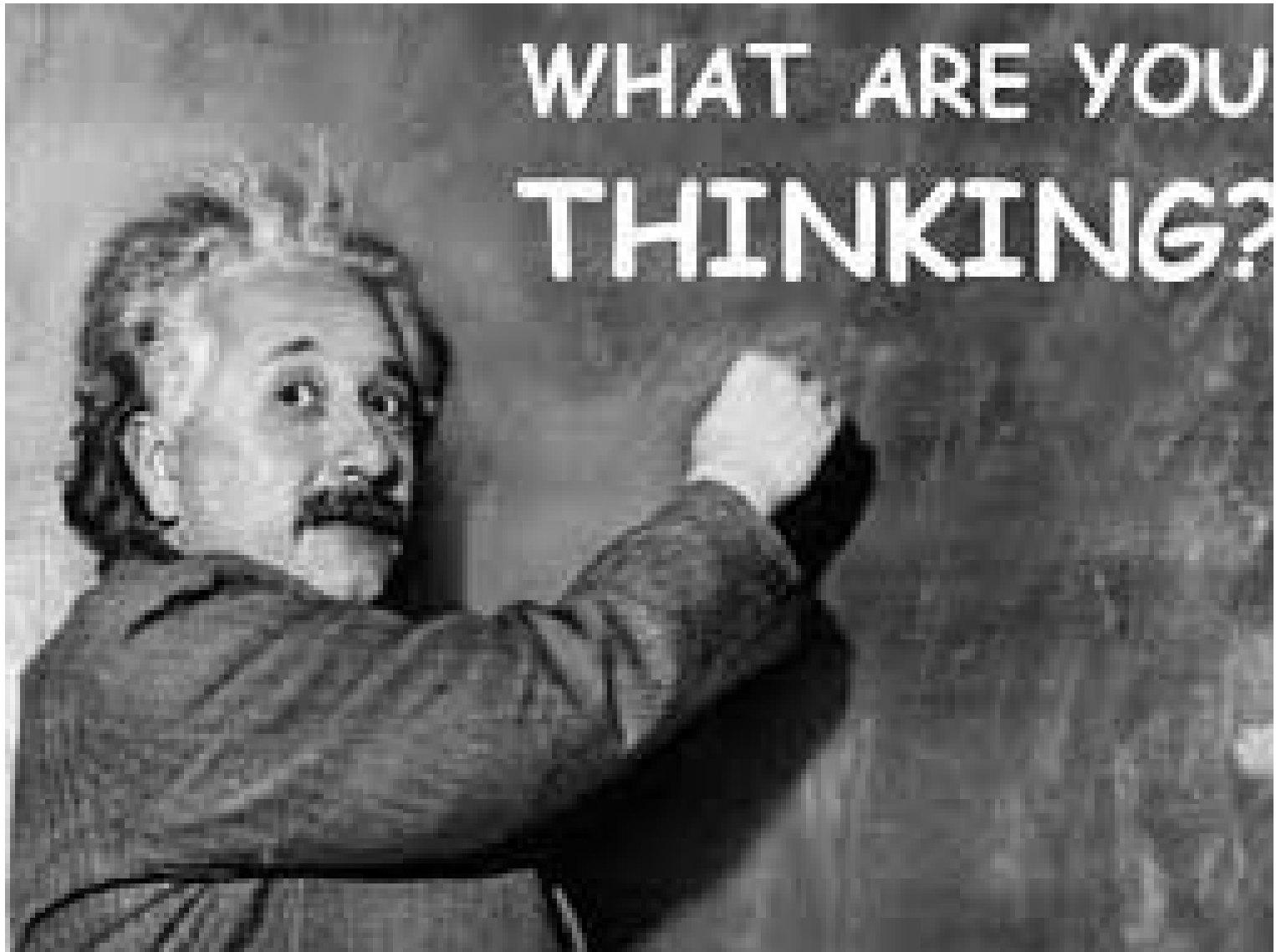
(Berghofer & Schwartz, 2007; p.66.)

How so....?

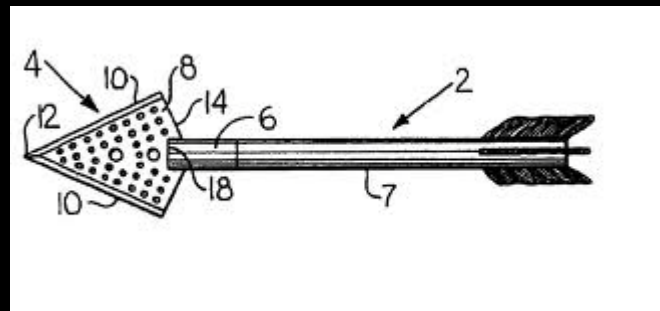
New Story

New Economy

BEYOND GREEN



The “How” to think for sustainability







Thinking in Systems: A web of interconnexions

The Nuu-chul-nuth First Nations of B.C.:

"Hishuk ish ts'awalk",

or

"everything is one and interconnected."

The now-extinct Yamana People of Tierra del Fuego in Patagonia referred to this interconnectivity as:

"Maia-ku".

Donella Meadows and “Systems Thinking”

- ✓ NOT silo thinking.
 - ✓ Systems: Are more than the sum of the parts.
 - ✓ Interconnexions *and* non-linear (“Look beyond the players to the rules of the game”.)
 - ✓ Understanding Systems behaviour over time.
 - ✓ Counter-intuitive connexions
- ✓ Measurability: stock, flow and dynamics.
 - ✓ Feedback loops:
 - Stabilising loops: Balancing feedback.
 - Runaway loops: Re-inforcing feedback.

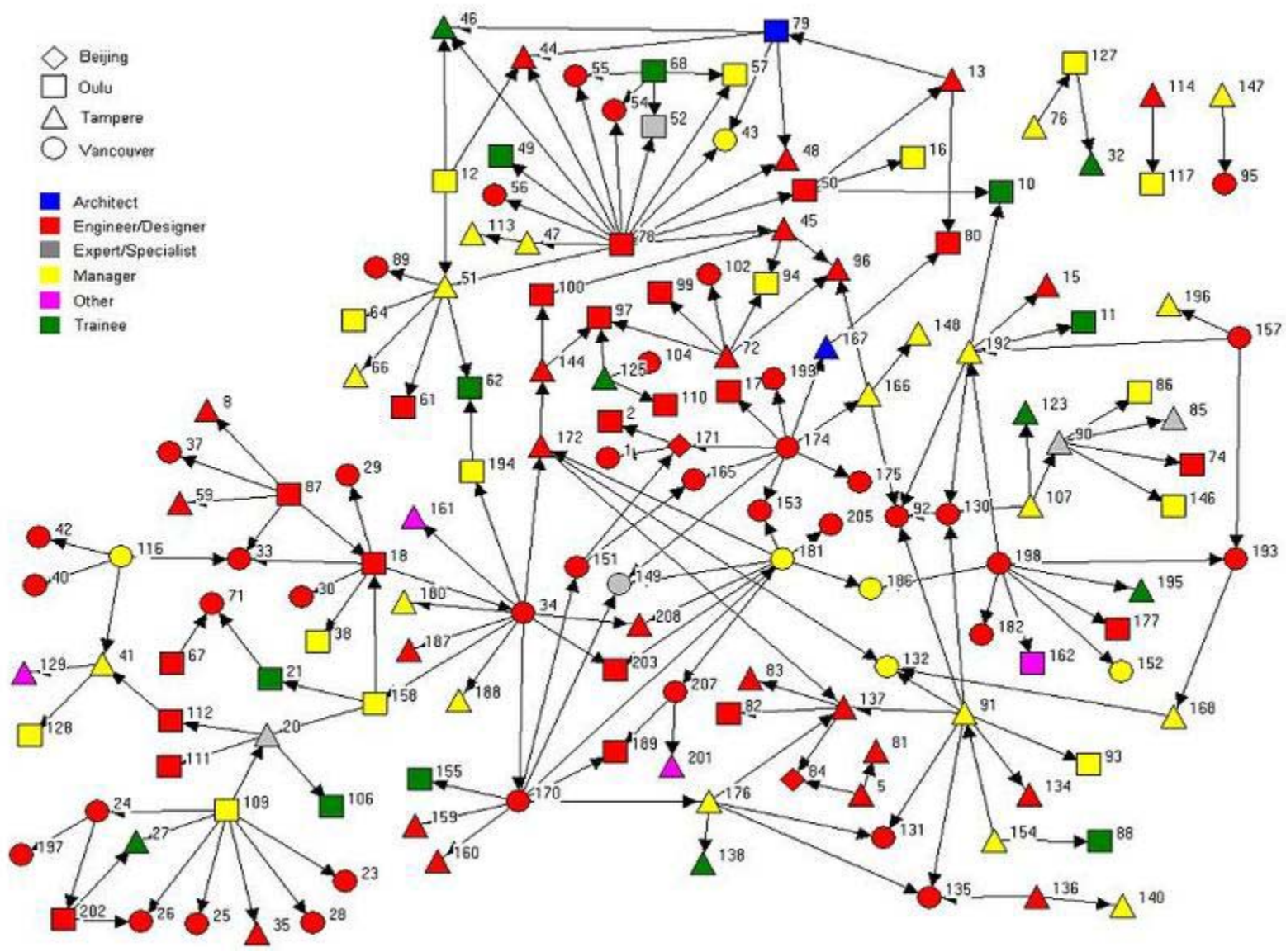


**Science has come to understand this
interconnectivity through:**

**“The three revelations... Charles
Darwin’s Theory of Evolution, Max
Planck’s Theory of the Quantum and
Edwin Hubble’s Theory of an Expanding
Universe...”**

(Christian de Quincy, 2002, cited in
Berghofer & Schwartz, 2007; p.69.)

+ Biodiversity (Ecological Sciences).

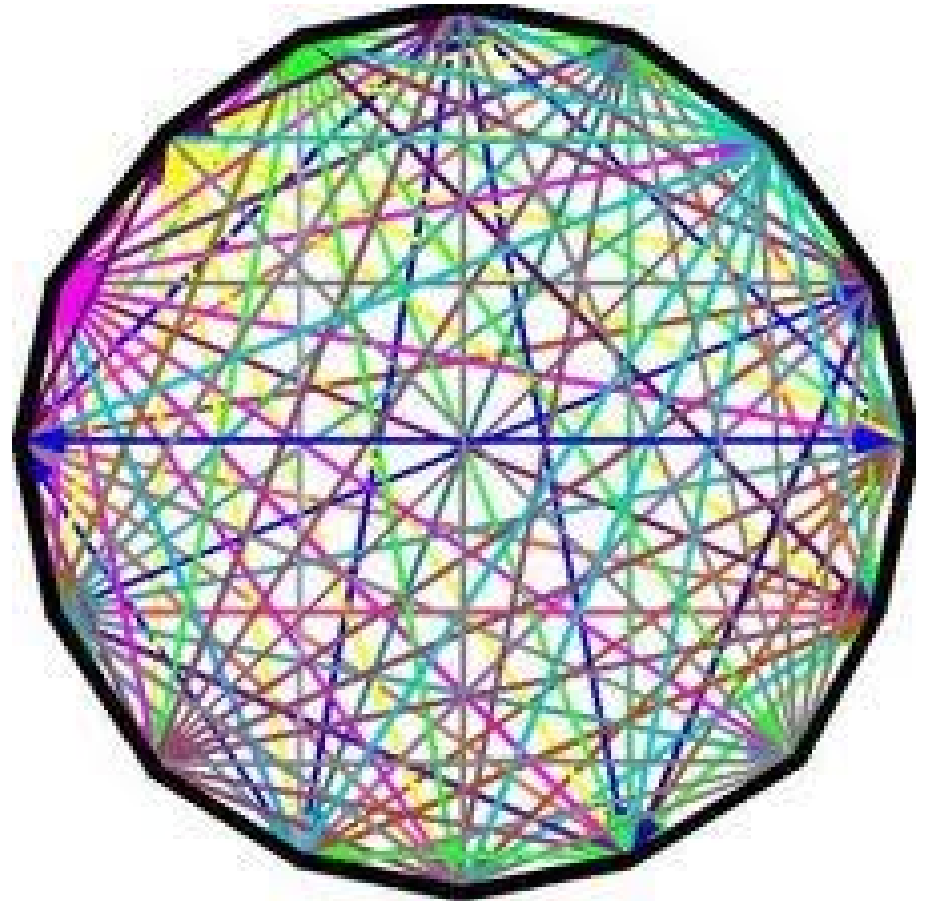


Solutions- focussed

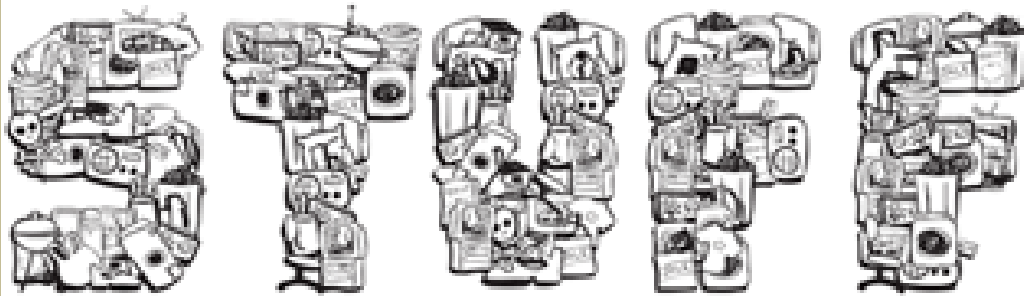
✓ An Interconnectivity approach gets to the “roots” of society’s sustainability challenges versus humans simply continuing to toy with the superficial consequences of those roots.

✓ **“Changing consumption and production patterns is an essential requirement in achieving sustainable development, as recognized by the Heads of State and Governments in the Johannesburg Declaration of 2002.” (UN Department Economic and Social Affairs).**

✓ A sole-pursuit of green energy solutions does not get to the roots of our sustainability challenges.



THE STORY OF



Ecological Footprint

Center for Sustainable Development

Plus... sustainability calls for considerations of:



- ✓ **Democratic Processes**
- ✓ **Expanded definitions of “stakeholder”, that then lead to more expansive processes in:**
 - **Public Participation**
 - **Community Engagement**
- ✓ **Transparency**
- ✓ **Leadership**
- ✓ **Responsible Thinking (i.e. CSR)**
- ✓ **International dimensions and obligations**
- ✓ **Local diversity**
- ✓ **Expanded definition of time (earth scales over human scales)**
- ✓ **Philosophical and Ethical groundings (i.e. Light-, Mid-, or Dark- Green Ethics)**
- ✓ **Planning processes for sustainability (e.g. SDS or LA21)**
- ✓ **More**

Four parts to sustainability planning (IISD)

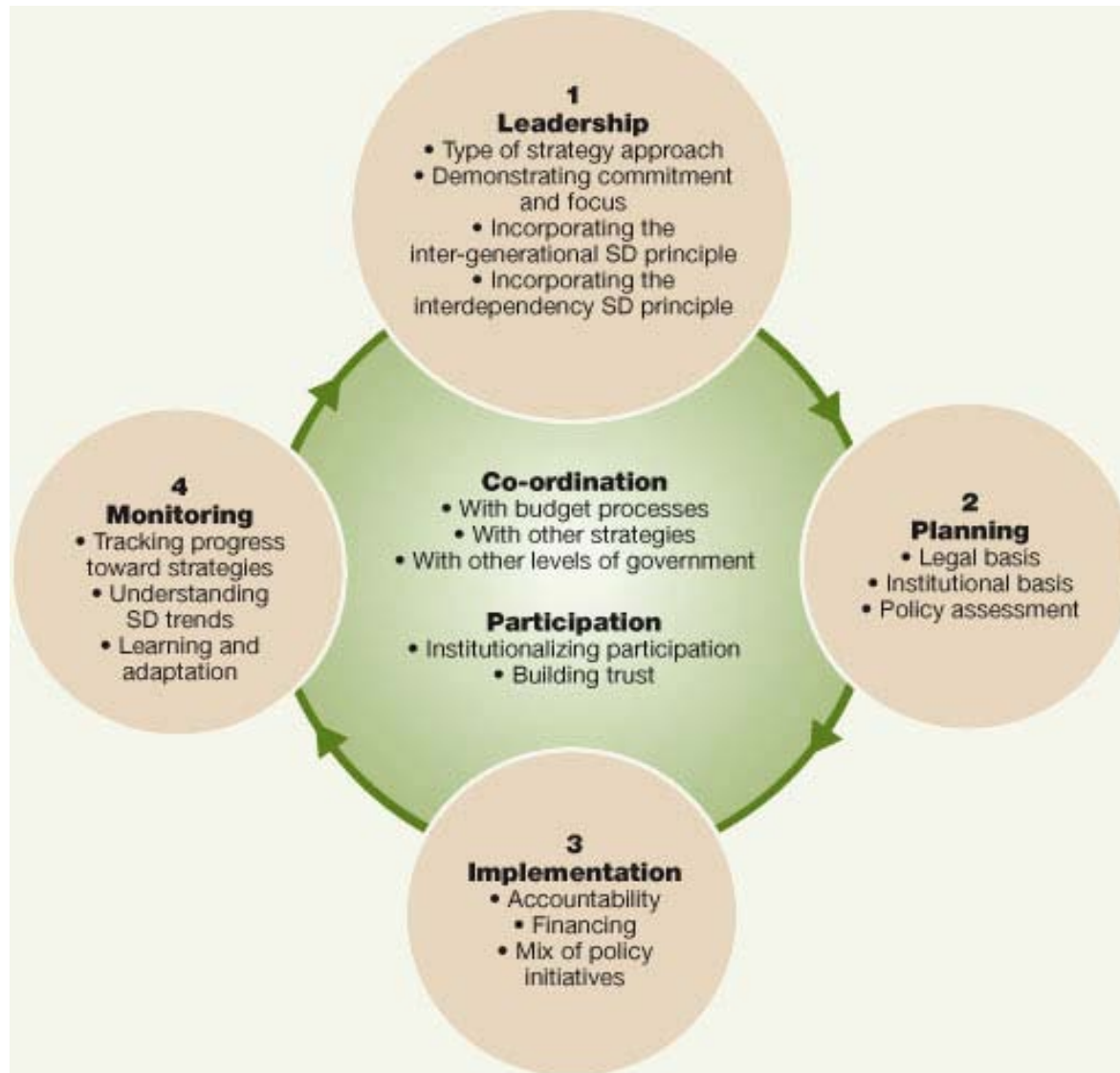
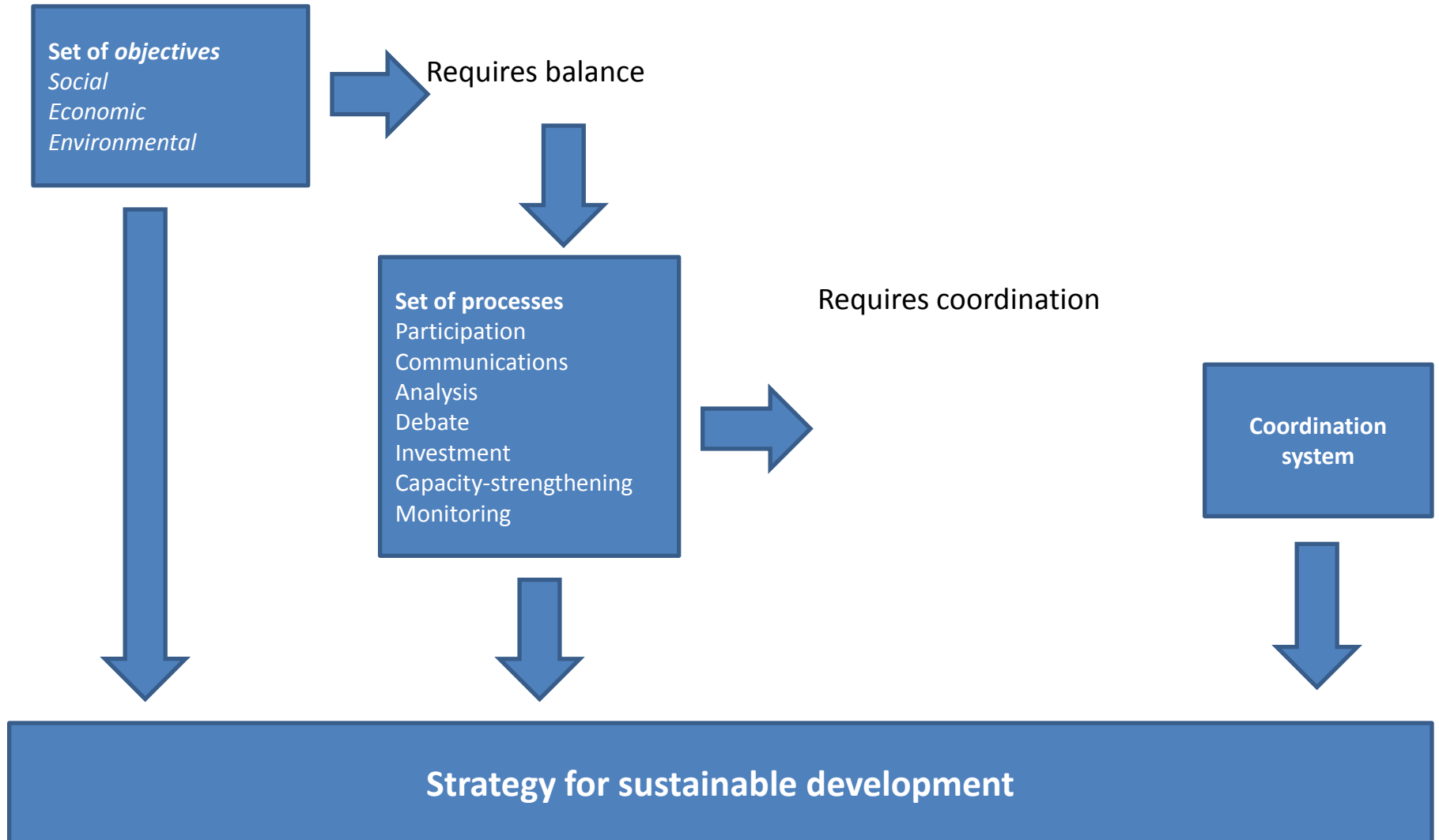


Figure 1. Aspects of strategic and coordinated action for sustainable development: the national sustainable development strategy and process.

- *An Environmental approach* =
environmental assessments /management
/green energy, etc..
- *An Economic approach* =
business planning / profitability / single
bottom-line.
- *A Social approach* =
community development / CSR.
- ✓ *A integrated 3BL approach* =
sustainability / sustainable development.

Sustainability Development Strategies (SDS) / LA21 Overview (1)

Figure 3.1 Rationale for a systemic approach to sustainable development strategies (OECD (2002), page 32, Figure 3.1)



Consider:

**How might you differently explore
energy solutions through a 3BL
sustainability lens over a “Green
Energy” lens...?**



Industry: Experience and Considerations

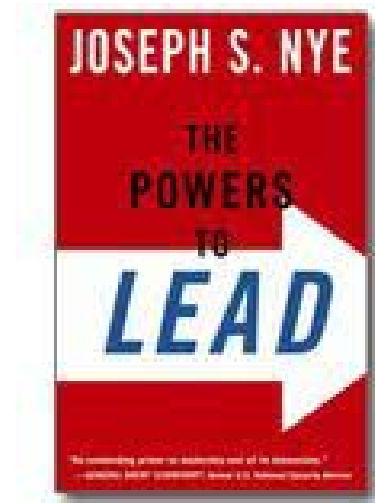


Is it possible for a non-renewable energy company to be operating more in-line with sustainability principles than a renewable energy enterprise...?



- ❖ For you... is “Green Energy” a *way of production* of energy, or an *approach* to energy...?
- ❖ *If a way of production, how can your idea of “green energy” expand to include an approach that incorporates sustainability thinking....?*

To achieve your individual potential as a *Leader in Sustainability*, pursue sustainability solutions through a 3BL lens.



*Questions,
Comments,
Thoughts,
Critiques.....*

Thank-you....!

Primary Resources Used

- Berghofer, Desmond and Schwartz, Geraldine 2007. *The Ethical Leadership Scales*. Victoria, Canada: Trafford Publishing.
- Centre for Sustainable Economy (no date). *Ecological Footprint Quiz* [online]. Available from: http://myfootprint.org/en/visitor_information/ [Accessed: 09 February 2012].
- CCTV-9 report (2011). "Solar Bottle Lights." Available from <http://www.youtube.com/watch?v=SBWi3NtND68> [Accessed: 09 February 2012].
- iisd - International Institute for Sustainable Development (2009). *SD Strategies* [online]. Available from: <http://www.iisd.org/measure/principles/sd> [Accessed: 08 February 2012].
- Meadows, Donella H. 2008. *Thinking in Systems: A Primer*. White River Junction, VT, USA: Chelsea Green Publishing.
- OECD - Organisation for Economic Co-operation and Development, and United Nations Development Programme. 2002. *Sustainable Development Strategies: A Resource Book*. Paris and New York: Earthscan Publications Ltd. (Also available online from: http://books.google.ca/books?id=bbWCHRN4h_sC&printsec=frontcover&dq=Sustainable+Development+Strategies:+A+Resource+Book&source=bl&ots=p0pLOtsyGw&sig=KAwmFAeRqAPN1jpv2s1vS49d1nc&hl=en&ei=qwAyTdbjKlPrgQfftI3bCw&sa=X&oi=book_result&ct=result&resnum=4&ved=0CDAQ6AEwAw#v=onepage&q&f=false)
- Sustainability Leadership Institute (2009). *Sustainability Leadership Relational Model* [online]. Available from: <http://www.sustainabilityleadershipinstitute.org/atomic.php> [Accessed: 08 February 2012].
- The Story of Stuff Project (no date). *The Story of Stuff* [online]. Available from: <http://www.storyofstuff.com/movies-all/story-of-stuff/> [Accessed: 09 February 2012].
- UN Department of Economic and Social Affairs (no date). Consumption and production patterns [online]. Available from: <http://www.un.org/en/development/desa/climate-change/consumption.shtml> [Accessed: 09 February 2012].
- UN Documents Cooperation Circles (1987). *Report of the World Commission on Environment and Development: Our Common Future* [online]. Available from: <http://www.un-documents.net/ocf-02.htm> [Accessed: 08 February 2012].