

ANDREW MCKILLOP  
BIOGRAPHIC HIGHLIGHTS  
FOCUS/

ENERGY ASSET MANAGEMENT AND RISK COVERAGE  
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MR MCKILLOP'S SPECIAL SKILLS

Fundamentals oriented vision

Both conventional fossil energy and the ARE (Alternate and Renewable Energy sources and systems) are addressed in a widening investor, finance and policy space. Both convergence and segmentation, or re-segmentation of energy markets is under way. Drivers for this mega trend notably include the long-term issues of climate change and peak oil.

Through 2007-2009 to date, prices of traded energy commodities have shown extreme high volatility, not only for traded oil. Monthly variations from a given 'pivot' of more than 25% have been experienced, several times over.

Upstream issues and fundamentals are unlikely to change this embedded volatility, and may add to volatility over 2010-2012. High ground trends likely include increased volatility but rising average day traded prices for electricity and natural gas, with major geographic regional variations, relatively strong oil prices, rising coal and uranium prices. Global macro factors will remain extremely important for price setting - any return or recession, higher interest rates, further US dollar depreciation, etc, will very rapidly cause large falls in day traded energy prices.

Energy-economic analysis for Risk coverage

Current fossil energy dependence remains extreme high (around 85% of world total commercial energy). Full-scope energy economic system analysis and study reveals a constantly changing field of rewarding investor possibilities, including Risk cover strategies. This science-based methodology, for which Mr McKillop is a pioneer since the late 1970s, can also highlight and signal low-performance and unsustainable investor hopes.

Mr McKillop's professional experience in Conventional energy and ARE, including fundamental science research (metallurgy and physics) dates back more than 35 years.

Energy Economics

The energy economy is generally not well understood, nor the full meaning of the term "energy economy". Mr McKillop was in 1981 a founding member of the International Association of Energy Economists (now termed: International Association for Energy Economics), but has no formal relation with this association for more than 15 years. One reason for this is the Association's tendency to confuse trading with supply and reserve/resource issues.

Energy economic fundamentals are little understood, and usually badly applied, in the investor and project financing space. A good example are the so-called "BTU funds" of the period around 1995 - 2000. Web search with "BTU funds" will be frustrating, because there is so little published data on these funds and this investor concept. My own experience with several "BTU funds" reinforced my conviction that Risk coverage starts with fundamentals, directly sourced in energy economics.

## Full Cycle Energy Economic Analysis

The basic analytic or conceptual fault with the historic "BTU funds", and the bulk of energy-oriented funds today, is simple: their analysts only focus one part of the energy economy, and energy economic value chain. Their effort is concentrated at the input/output stage in the energy economic process, ignoring or under-accounting the full value chain.

One aspect of what I term Full cycle analysis is incorporated in the study of EROI or Energy return on investment of energy, also called "net energy" or "energy yield". Linking this, to dollars-and-cents data and economic issues, delivers Full cycle energy economic analysis. This approach yields repeated asset choices for Risk covering strategies.

This wide ranging and impartial analytic solution also generates much more reliable tracking and performance indicators, for all equities and commodities. This extends to tertiary product (service) company stocks and derived financial instruments able to provide low-cost, robust Risk coverage in portfolio management.

To be sure, this analytic approach can be made highly sophisticated and complex, and lends itself to computer modeling. Certain models are available, notably derived from climate-change related "carbon footprint" and emissions impact modeling. For an investor fund, simplified sector-specific models can be quickly generated, without lapsing into the dangers of "BTU fund" under-analysis.

## Electric Power

This sector will experience massive and accelerated change throughout the period 2010-2020. One forerunner and model for this is European electric power markets, upstream power generation, and downstream electricity utilisation in the economy. Notable change factors include carbon emissions trading, but also the changing upstream energy mix for power production, featuring the ARE, the role of electricity in the energy economy, global and regional economy trends, etc.

The electric power sector is, for the moment, the energy sector most-affected by ARE growth and development, and will be heavily impacted by rapid change in world natural gas markets. Electric power in the overall energy economy has highly specific, often contrarian impacts on (for example) oil, gas and coal demand, generating the need for bespoke Risk coverage strategies.

Mr McKillop has for many years studied the role of electricity in the energy economy.

## SUMMARY BIOGRAPHIC HIGHLIGHTS

Recent major publications include:

Investment Costs of Energy Transition - Australia FINSIA publication (June 09, Issue N°2, JASSA official journal). My findings are discussed at:

<http://www.financialsense.com/editorials/mckillop/2009/0420.html>

Energy Transition and the Cleantech Revolution - Book title for work commissioned by Academy & Finance SA, Geneva (Credit Suisse conference and communications subsidiary). This work will cover the highly complex and emerging, high risk-high opportunity investor space presented by Cleantech. Publication will likely be in Q1 2010.

Urban Sustainability Challenges to 2030 - paper covering Urban energy strategy, to be presented by AMK at the EcoCity World Summit, Istanbul, December 13-15.

Andrew McKillop is an energy and natural resource sector professional with over 30 years experience covering multiple domains of key interest to investment managers, strategists, fund owners, company owners, business analysts, national policy setters, the media and publishing houses.

Mr McKillop's first economics degree was a Master's equivalent in economic development and economics, covering natural resources of all types, at University College London (UCL), London UK, 1968.

Subsequent studies by Mr McKillop included research and teaching at PhD level on resource conserving urbanism and habitat at University of London's Bartlett School (architecture) and School of Environment Studies (urban planning) in the period 1969-72.

Mr McKillop received a diploma in language studies at Carleton University Ottawa (1974) while undertaking long-term research on Energy sector issues for the Science Council of Canada (1974-78).

Mr McKillop has carried out many years of in-house research for major institutions and entities. This has for example concerned industrial opportunities in renewable energy. These studies include research for the Science Council of Canada, UN ILO, UN ESCAP, the OPEC Fund, the OAPEC organisation and its industrial subsidiary AREC, the Arab Monetary Fund, the European Commission, the Energy Studies institute of Grenoble university, and elsewhere.

Many of these studies have been published in the official publications or journals of the institutions. Mr McKillop is an independent consultant, journalist, broadcaster and author, with a long international experience as energy, environment and development theme presenter, seminar organizer, and Webinar developer.

Mr McKillop has for more than 20 years been associated with the concept of EROI and net energy analysis, and full cycle energy economic analysis, for generating downstream investment decision and fund operation advice.

Mr McKillop has been associated with, advised, and provided mission assignment studies for several New York-based investor funds, 2007-2008.

Mr McKillop is regularly interviewed by financial and current affairs media such as European financial and mainstream newspapers, for example 'The Observer'.

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