

Workshop W10

Wednesday, November 4, 1:30–3:00 p.m. and 3:30–5:00 p.m.

INSURING RENEWABLE ENERGY CONSTRUCTION

Presented by



Dean T. LaPierre, P.E.
Senior Vice President
Mercator Risk Services, Inc.

Driven by both economic and environmental factors, the market for renewable energy is expected to grow to over \$200 billion in the next 10 years. How are the construction insurance markets, particularly builders risk underwriters, expecting to respond to this wave of development? Should they simply adapt existing insurance products to “fit” these new technologies? Or are we looking at a new wave of product development specifically geared for the “green” energy sector? This presentation focuses briefly on the renewable sources themselves and then examines how well the existing insurance products fit the exposures of the renewable power construction project. Practical examples are presented along with standard industry coverage wordings to highlight potential gaps and conflicts.

Mercator Risk Services, Inc. is a specialty wholesaler with a dedicated construction team that can offer innovative solutions to tackle your toughest construction risks. Mercator offers a commitment to specialization and a collaborative culture which ensures a tailored product to fit your specific needs at a competitive price. Whether it's a small, low hazard artisan or a high risk specialty general contractor, Mercator offers comprehensive coverage and access to a multitude of standard and surplus lines markets.

Target Classes

- General Contractors
- Residential and Commercial Builders & Developers
- Real Estate Developers and Project Managers
- Artisan and Trade Subcontractors
- Architects and Engineers
- Construction and Property Managers
- Real Estate Related E&O (*includes appraisers, inspectors, and consultants*)

Features & Highlights

- Builders Risk/Installation Programs
- Practice Policy GL for Contractors
- General Liability
- Property
- Workers Compensation
- Owners/Contractors Protective Liability (OCP)
- Environmental Coverages
- Contractors Equipment
- Professional Liability

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Mr. LaPierre is presenting Workshop W10, "Insuring Renewable Energy Construction," on Wednesday afternoon. He is a Senior Vice President with Mercator Risk Services, an independent wholesale insurance broker based in New York. Prior to brokerage, Mr. LaPierre served in numerous underwriting positions, both domestic and international, including Vice President of International Property for AIG in London. Mr. LaPierre holds advanced certifications in Fire Protection Engineering, Construction Risk Management, and a degree in Chemical Engineering. He is licensed as a Specialty Property/Casualty Insurance Broker as well as a Professional Engineer. He has over 20 years' experience in the insurance industry and specializes in large commercial property and construction risks.

Notes

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W10: Insuring Renewable Energy Construction

Presented by:
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What to talk about?

- The renewable energy debate
- A little detail on each source
 - Current and projected usage
- How our industry coverage “fits” these technologies
- Examples of how we may better adapt to the coming wave
- Significant projects

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Who Is this Man?

M. King Hubbert

B.S., M.S., Ph.D., University of Chicago

Shell Oil Company 1943–1964

Professor of Geology & Physics, Stanford University, 1963–1968

Professor at University of California Berkeley, 1973–1976



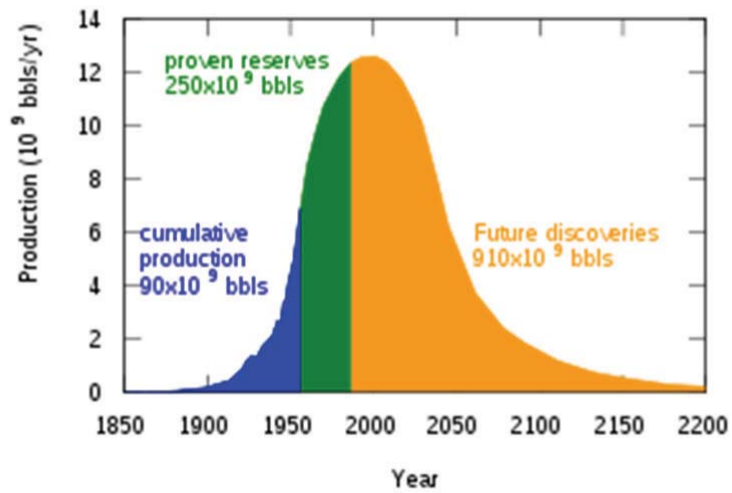
Most well known for studies on capacity of oil and gas fields

Developed a model that identified “Peak Oil”

Criticized at first, but his theories have proven accurate

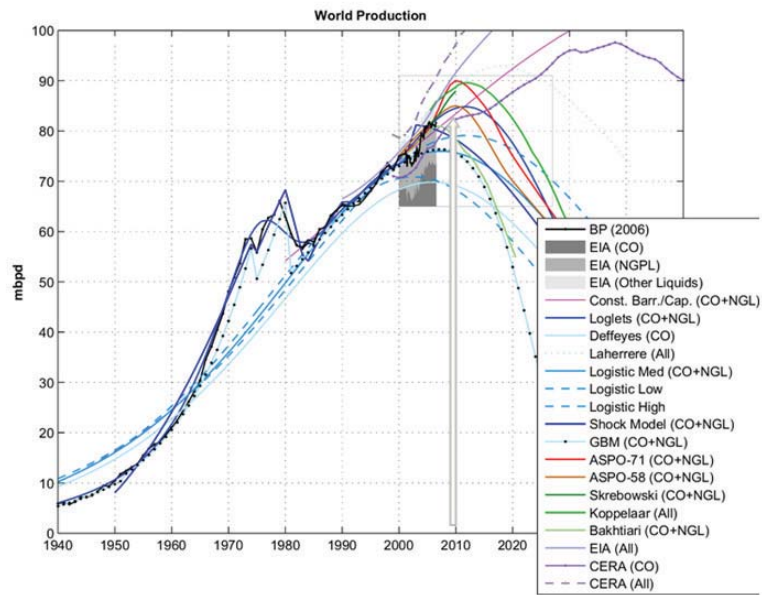
Global oil production will follow a bell curve

Hubbert's Peak



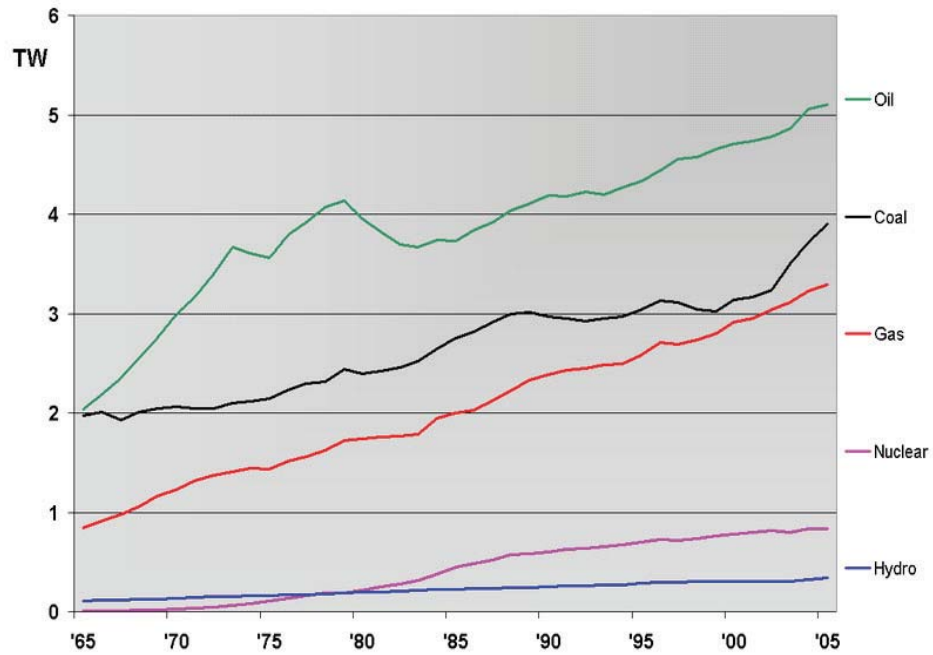
Source: M. King Hubbert, 1956

Variations to Peak Oil



Source: Association for the Study of Peak Oil & Gas

World Energy Usage



Source: U.S. Department of Energy, Energy Information Administration

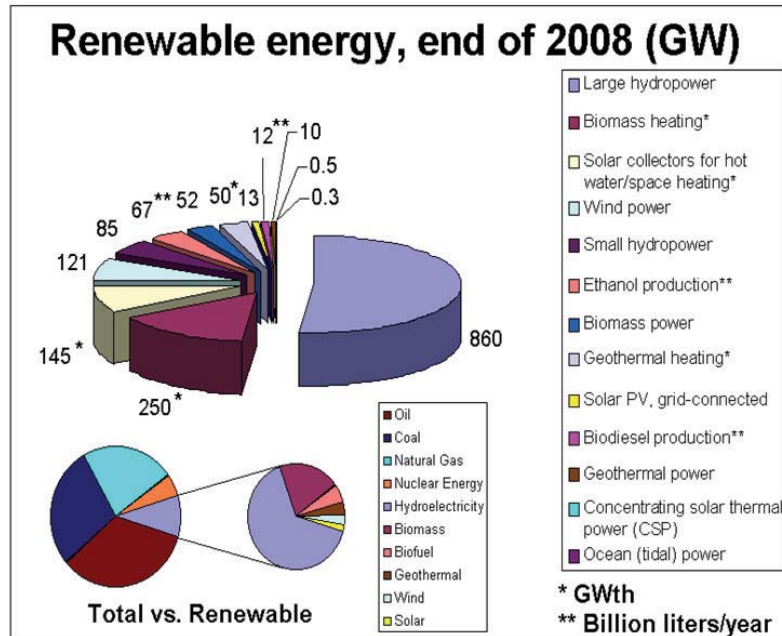
Renewable sources (other than large scale hydros) are not large enough to be significant on this diagram.

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What Happens Next?

- Exploding demand meets plummeting supply!
 - As Hubbert points out, our world economy is fossil fuel-dependent
 - What supplies we have left are in geopolitical “hot spots”
 - A recipe for conflict
- No matter your belief, there will come a tipping point
 - That’s when we get serious about renewable sources

Renewable Energy



Source: Renewables Global Status Report 2009 Update

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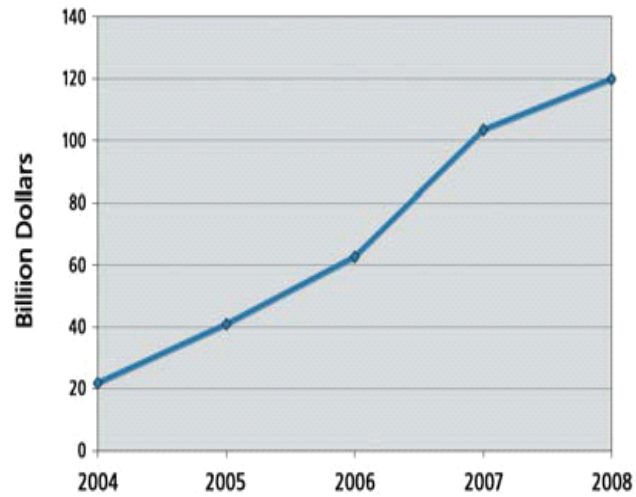
Renewable power expanded to 280 GW in 2008, a 75% increase from 160 GW in 2004. China led the way with 76 GW, followed by the US with 40 GW.

Renewables represented more than 50% of total ADDED capacity (including large hydro) in 2008.

Total renewable power capacity reached an estimated 1,140 GW in 2008.

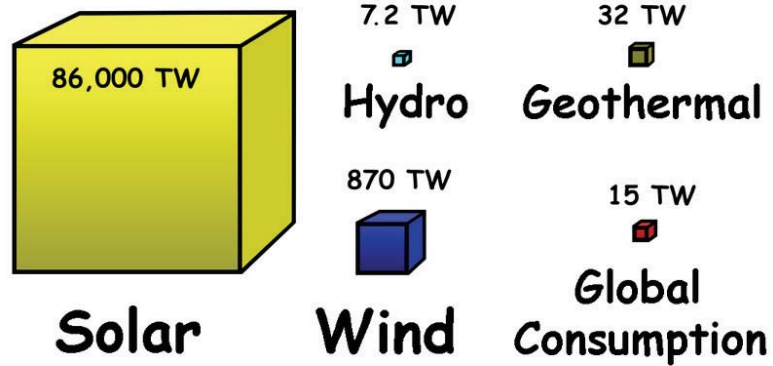
Renewable Investment

Figure 8.
Global Investment in Renewable Energy,
2004–2008



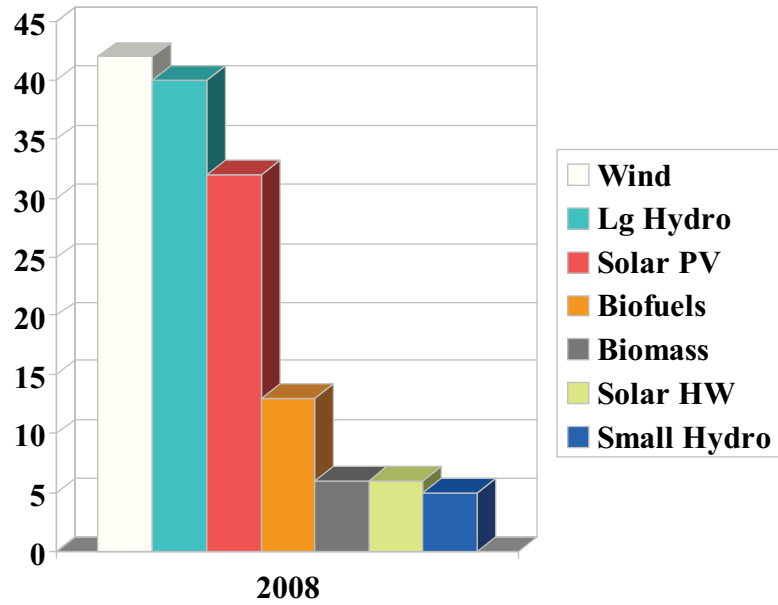
Source: Renewables Global Status Report 2009 Update—Renewable Energy Policy Network for the 21st Century

Renewable Potential



Source: Wikipedia

Investment by Source



Source: Ibid

The three largest investment areas are into the three largest potential areas of renewable energy

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Wind Power Big Picture

- 1.3% of CA electricity was generated by 13,000 wind turbines
- In order for all of CA to have its electricity needs met by wind?
- 1 million more wind turbines
- NIMBY

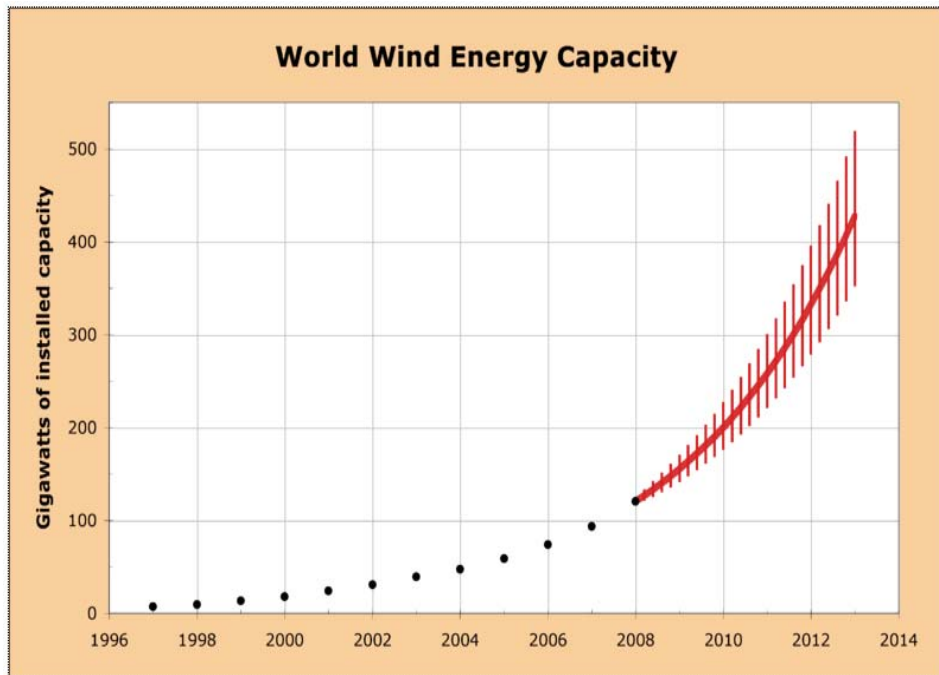
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Wind Power

- “Nondispatchable” source
- Would require 13% of total global land area
 - High altitude? Offshore?
- Projects/Installations
 - Horse Hollow (735 MW)
 - Altamont Pass, CA (596 MW)
 - Pampa Wind Project (4,000 MW)
 - Proposed (T. Boone Pickens)

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Wind Energy Numbers



Source: World Wind Energy Association

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Wind was the largest addition to renewable energy capacity in 2008, led by the U.S. with 8.4 GW, followed by China at 6.3 GW. The numbers trail off quickly with the 3rd largest addition to be from India with 1.8 GW.

Solar Energy Theory

- Radiation stimulates a chemically treated wafer and creates a voltage differential (hence, “photo-voltaic” cell)
- Put a panel of these wafer boards in parallel to increase the DC power
- Run through an inverter to convert to AC power we can use

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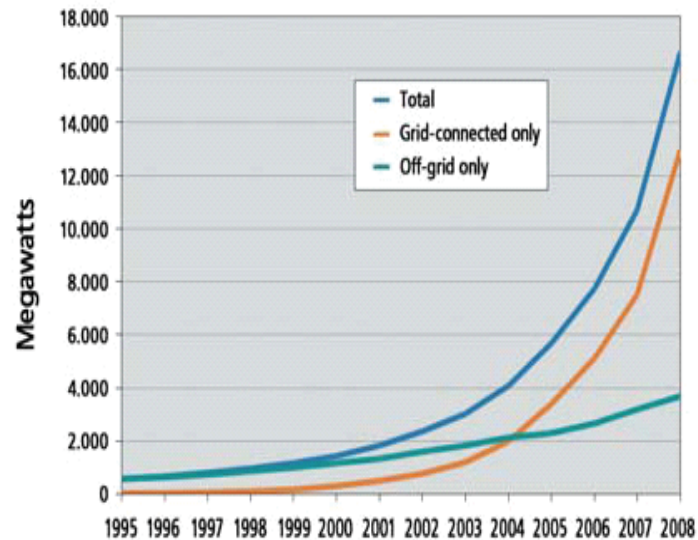
Solar Energy Reality

- Theory says we can replace all fossil fuels with 220,000 sq-km of solar cells
- All of the solar cells manufactured so far would cover only about 10 sq-km (.0045%)
- Large Projects/Installations
 - Mohave Desert, CA
 - 354 MW, using parabolic trough
 - Cle Elum, WA
 - 75 MW, 400,000 PV panels (2011)

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Solar Energy Numbers

Figure 3.
Solar PV, Existing World Capacity, 1995–2008



Source: Renewables Global Status Report 2009 Update

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At 16 GW, Solar Energy represents only about 1.5% of renewable energy capacity. It is the fastest growing technology with a 6-fold increase in global capacity since 2004.

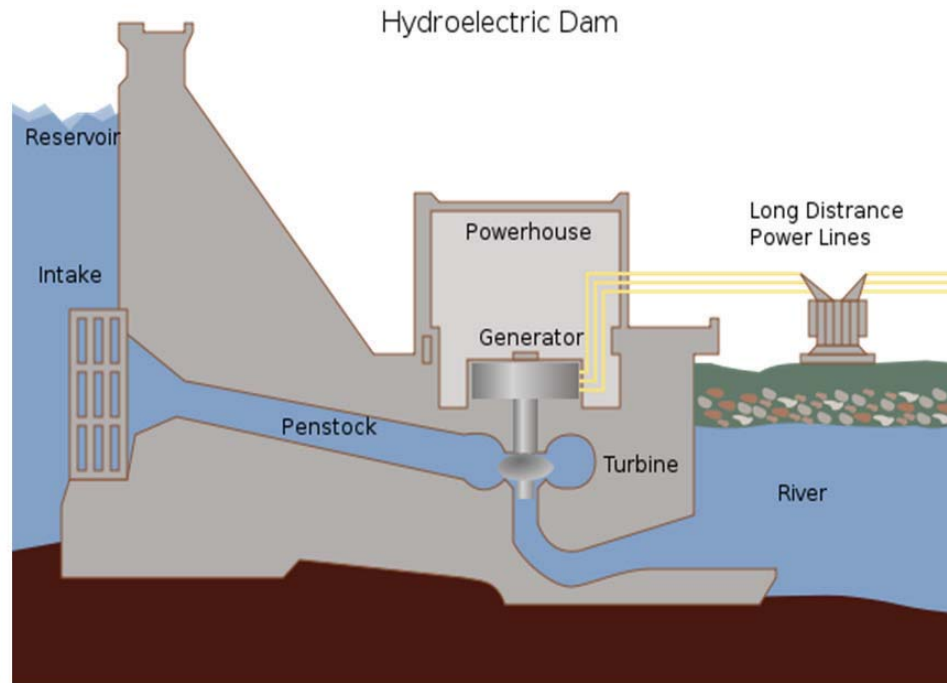
Spain is the new market leader in solar energy with 2.6 GW of new capacity installed.

Hydro Power

- 945 GW in 2008
 - 860 GW large plants
 - 85 GW small plants (~30 MW)
- Canada is largest producer of large
 - China market leader in small
- Trend is “micro-hydro” (<100kW) because of lessened environmental effects

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Hydro Operation



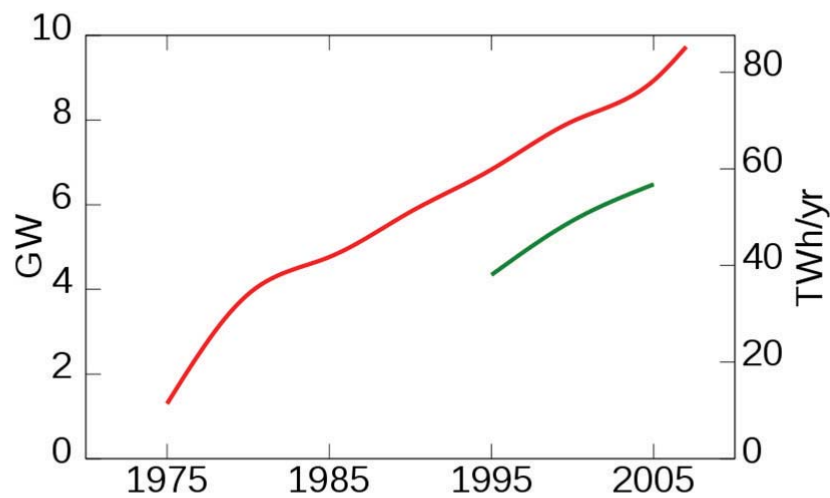
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Geothermal

- Capacity over 10 GW in 2008
- U.S. is market leader
 - 120 projects ongoing in 2009
 - Representing another 5 GW
- Long-standing technology
- Earth's inner core providing an abundant supply of energy

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Geothermal Capacity



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Prototype Technology

- **PROPERTY EXCLUDED**

- “...*Prototype, developmental or used machinery and equipment but only as to damage while undergoing any form of testing, commissioning, or startup unless specifically endorsed to the Policy*”

Source: Zurich Completed Value Builders Risk Policy

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Commercial Operation

- “...*once any of the production units are in operation and the Project Owner is deriving a revenue stream from the production units.*”

Source: Zurich Completed Value Builders Risk Policy

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Valuation

- “...*Actual cost to repair or replace the lost or damaged property, valued as of the time and place of loss, with material of like kind and quality, less betterment...*”

Source: Zurich Completed Value Builders Risk Policy

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Hot Testing

- EXCLUSIONS
- Hot testing
 - “*Any startup, commissioning or other forms of testing making use of any feedstock, catalyst, or similar media including operational or performance tests*”

Source: Zurich Completed Value Builders Risk Policy

- Testing period

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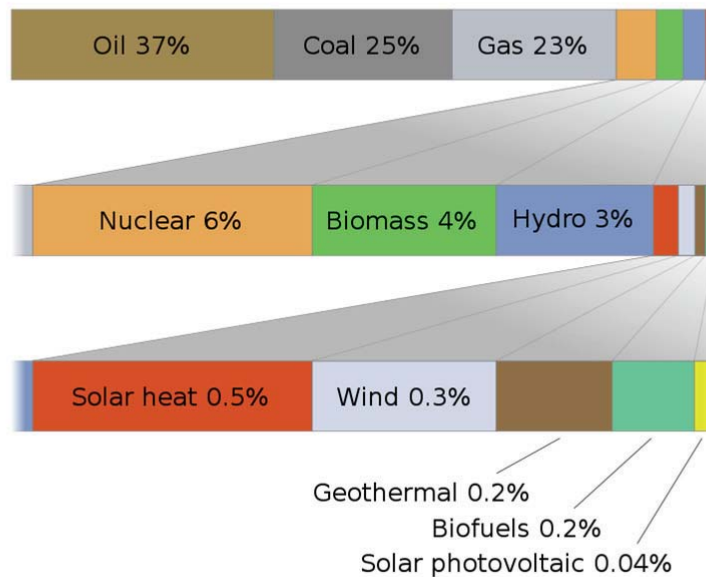
Delay in Completion

- Gross earnings
 - “...revenues from the planned operation of the insured project upon occupancy or commercial service which are not realized during the Period of Indemnity and which would have been earned by the Named Insured...”

Source: Zurich Completed Value Builders Risk Policy

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Questions/Discussion



Source: British Petroleum, Statistical Review of World Energy June, 2006

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