

Energy in transition - navigating through uncertainty

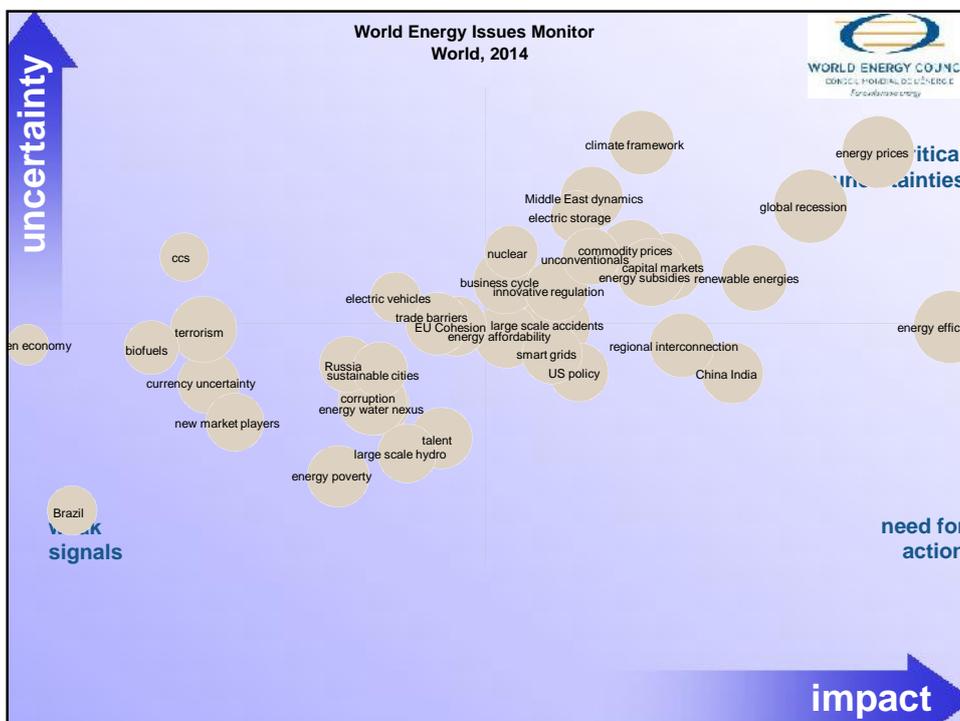


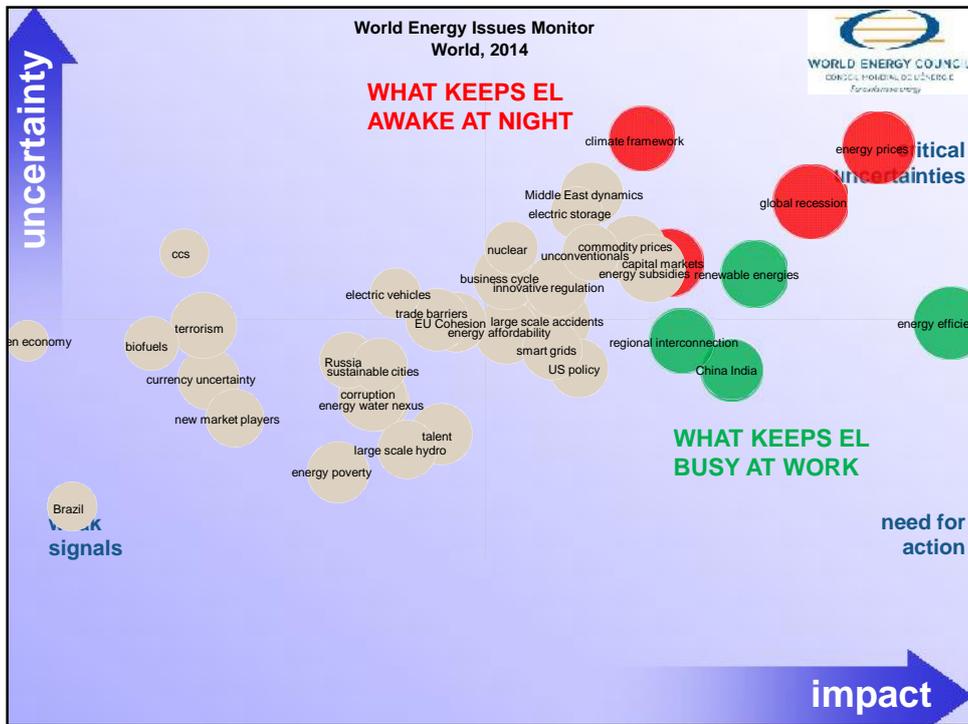
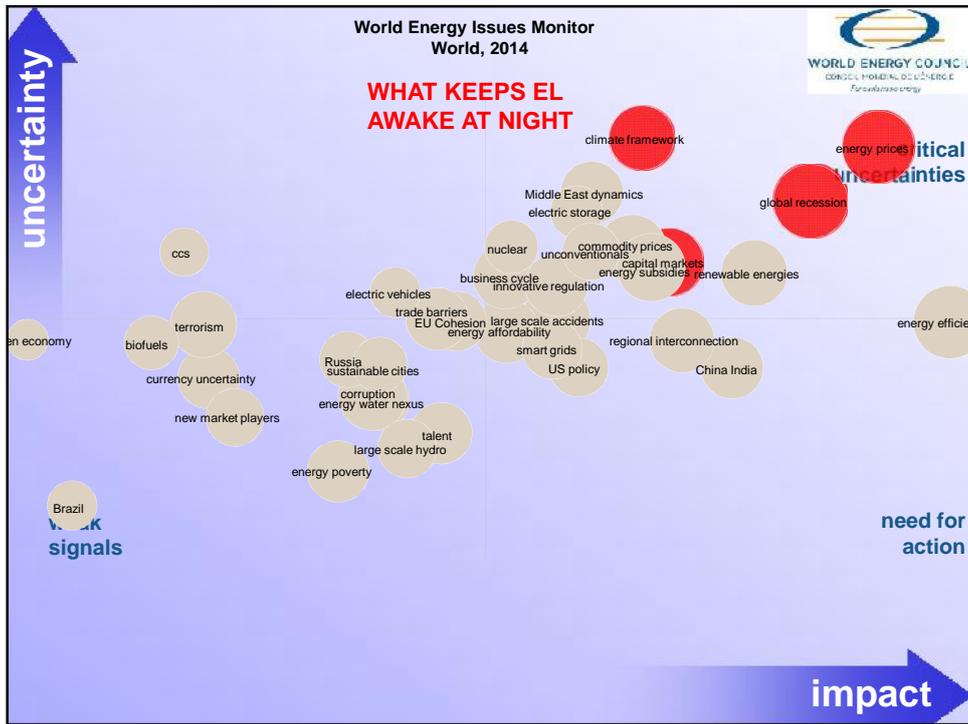
Prof. Dr Christoph Frei
Secretary General & CEO
World Energy Council

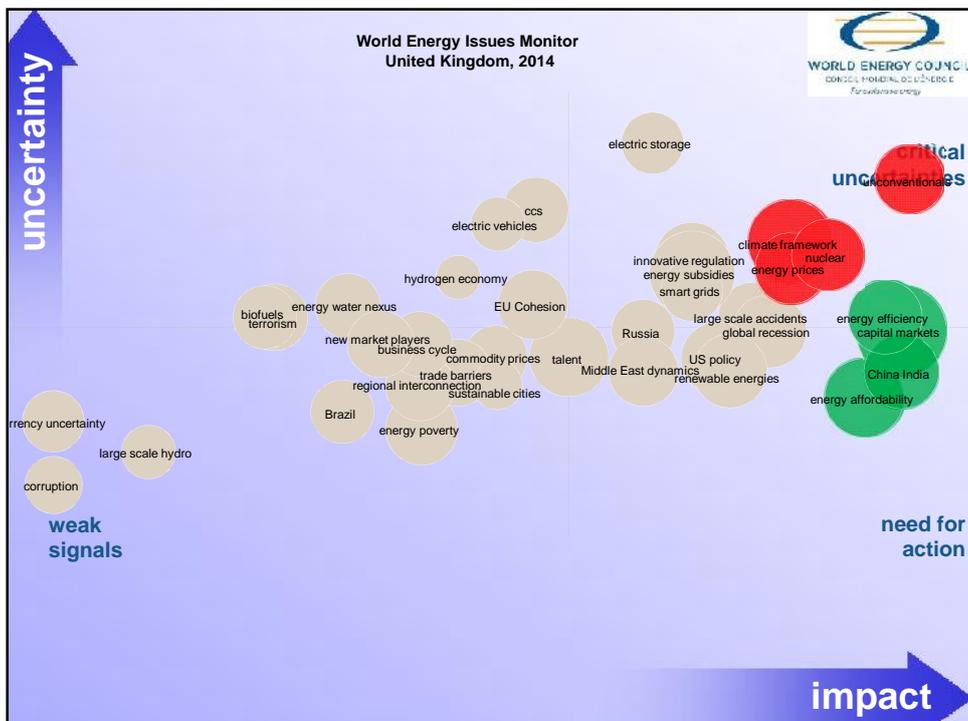
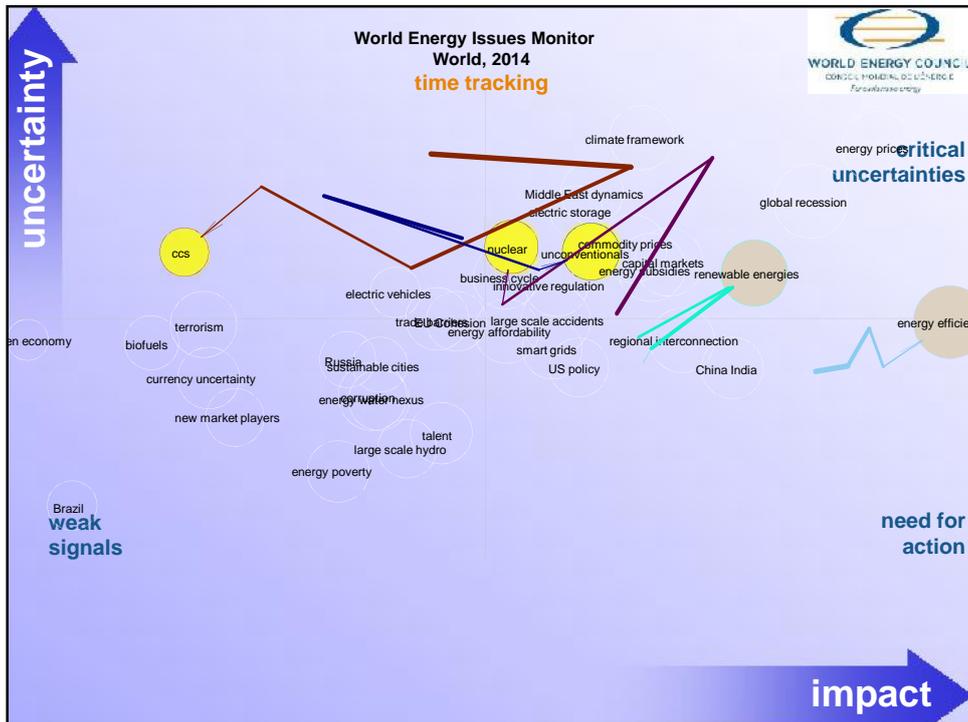
London, 02 June 2014
EURELECTRIC Annual Convention



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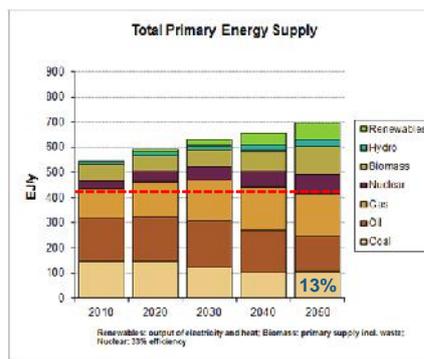
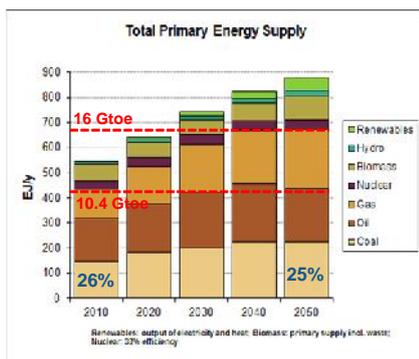








Global total primary energy supply



Jazz

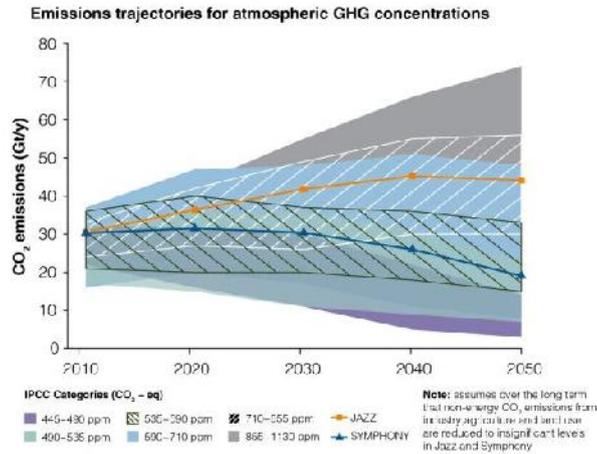
fossil fuels: +55%/ - 5%
oil: +/- 15%
natural gas: +100%/+50%
coal: +/- 40%

Symphony

Upstream liberalized;
technology development,
supply surge/more producers
Coal remains dominant in some regions

Tighter supply (lower E&P)
Higher infrastructure costs
Energy security drives reduced fossil use

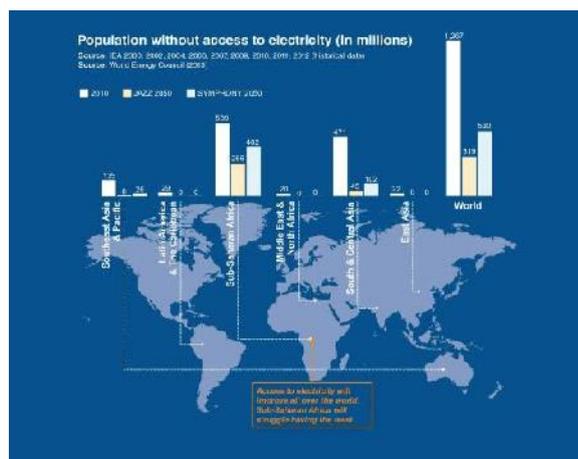
Resulting CO₂ emissions



The global economy will be challenged to meet the 450 ppm target without enormous economic costs

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Access to electricity in 2050



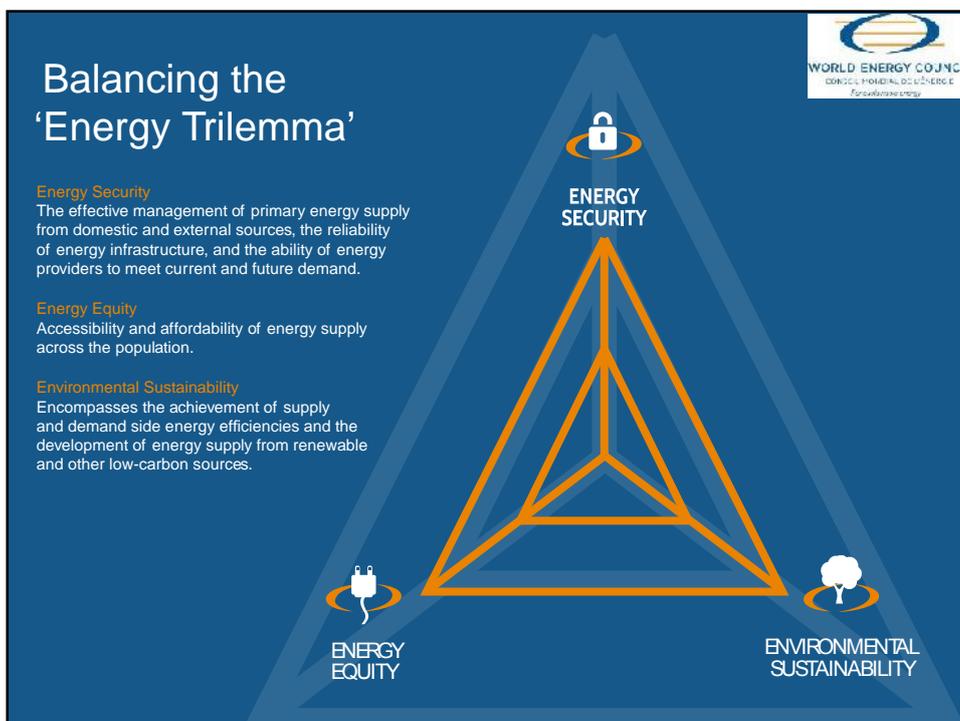
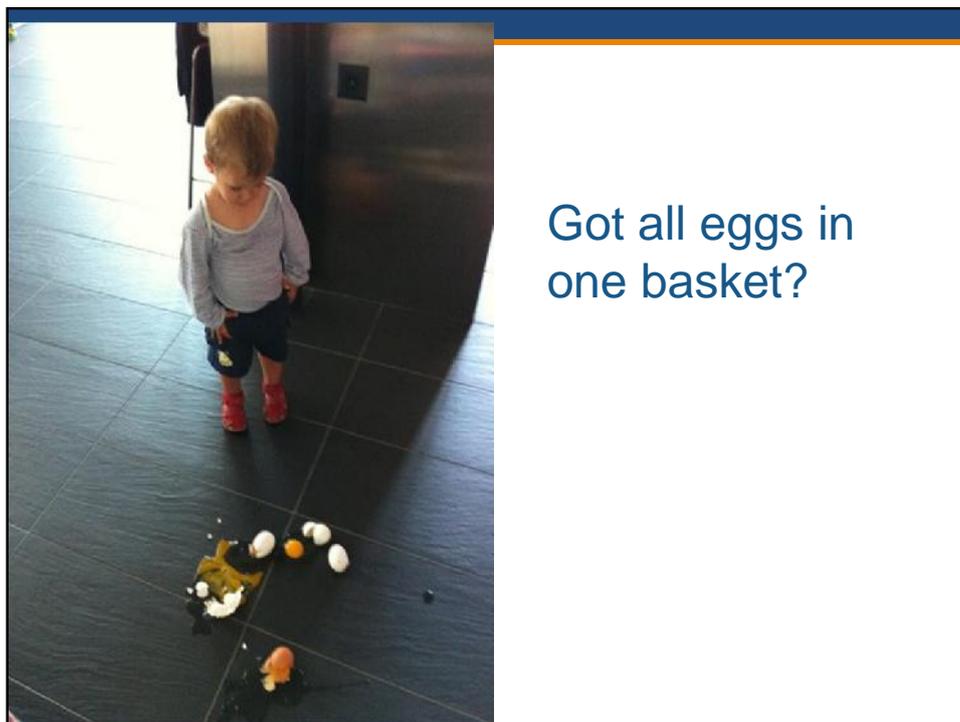
JAZZ:

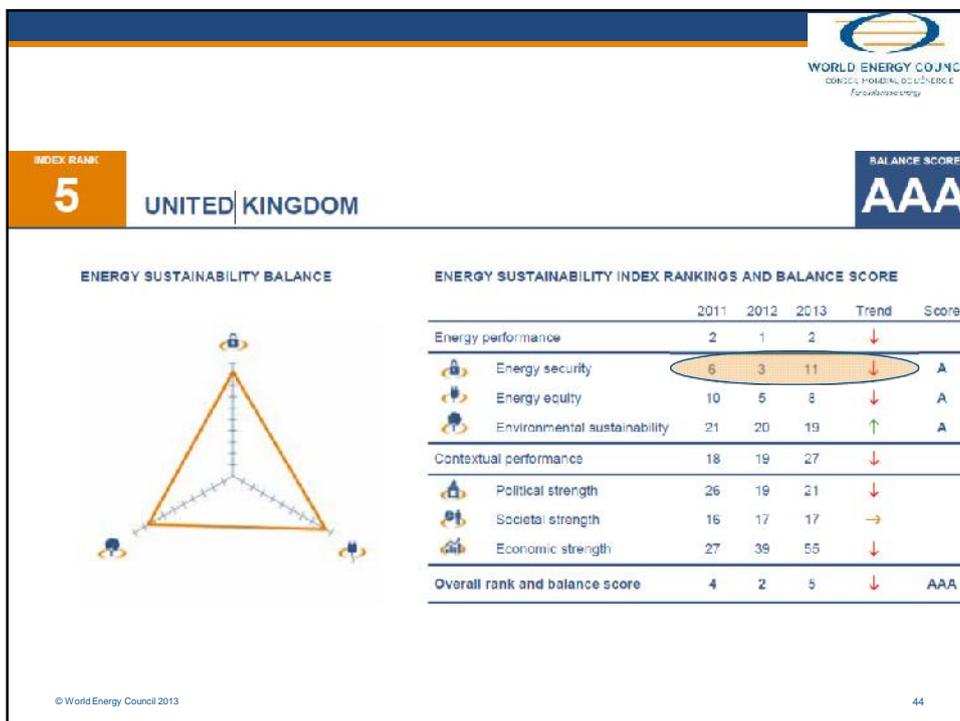
- 310 million without access in 2050

SYMPHONY:

- 530 million without access in 2050

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22nd World Energy Congress, 2013, Daegu

“The world’s premier energy gathering”

7 Myths

- **M1: Global energy demand will flatten out. Reality: Energy demand will double by 2050**
- **M2: Peak Oil. Reality: No shortage for fossil fuels in sight.**
- **M3: Demand growth will be fully met by new clean energy sources. Reality: The contribution of fossil fuels to the global energy demand is still growing in absolute terms.**
- **M4: We can reduce global GHG emission by 50% by 2050. Reality: Even in the best case we will see a near doubling of GHG emissions compared to 1990 levels.**
- **M5: Current business models and markets are delivering. Reality: Current designs are unable to cope with the increasing renewable shares, decentralised systems, or growing information architecture.**
- **M6: Current programmes will deliver universal energy access by 2030. Reality: On current paths, 320..530 million people will still be without electricity in 2050.**
- **M7: On a global scale capital is cheap and abundant. Reality: Capital is extremely sensitive to perceived political and regulatory risks. Lack of agreement between investors and governments on nature, price, and value of risks related to energy infrastructure makes capital flow elsewhere.**



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