

Renewables in Europe – the supply impact

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Europe's growing appetite for electrical power



- n Many reasons why energy consumption should be declining
- n Yet consumption still forecast to grow 1.2% p.a. until 2020
- n And more crucially demand by 5.7% p.a. for new electricity plant (Augusta Finance – White Paper 2003 “The Insatiable in Pursuit of the Renewable”)
- n a major reason why renewables can't plug much of the generation gap

The limits of wind power



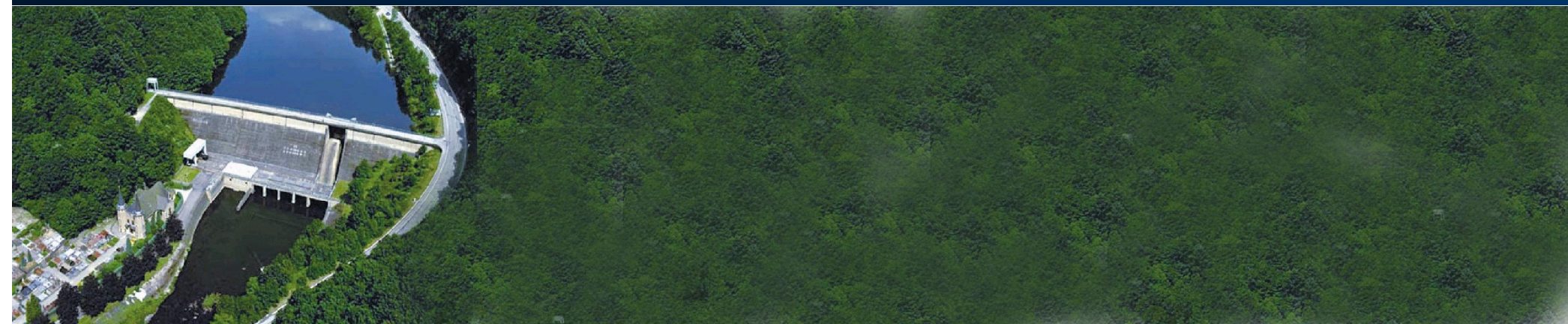
- n Positives – why costs are still falling
- n Negatives - Grid integration, spot market, disputed backup costs
- n no base load power supplier of the future without a breakthrough in storage technology

Solar power - still the future



- n Depends on model of distributed generation – might work in Iraq
- n But comes at an incredible cost and not falling (see Solar Buzz Index)
- n Bizarre mismatch between climate and solar penetration in Europe

Hydropower – massive potential, politically impossible



- n Arguably the cheapest – amortized over a 200 year lifespan
- n Norwegian Fjords – 550,000 MW theoretical capacity
- n France up to 250,000 MW
- n Likewise Severn Tidal Barrage in UK – 8000 MW

Biofuels – energy autarchy or the CAP?



- n Europe just doesn't have enough land or the climate to grow cheap enough feedstocks to make a difference
- n Already far behind on EU biofuel targets
- n Myth of security of supply through energy autarchy

Summary - Potential Yes, but case overstated

2020 Renewable Electricity Predictions

- n 20% unlikely, 15% just achievable – mostly wind
- n Need to shift policy emphasis much more over to the remaining 85%
- n And price security of supply much more than carbon

FINAL THOUGHTS

- n Europe needs more energy, not less
- n Renewables have a growing role, but economics and technology preclude a large one for foreseeable future
- n No magic bullet for Energy – mathematics of the challenge
- n Electricity will play a larger and larger role in all energy segments

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For more information see

n www.danlewis.org - for published articles, papers, letters

n www.ercouncil.org - Britain's oldest economics based think tank since 1943.

- Thankyou -