Renewables in Europe – the supply impact

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Europe's growing appetite for electrical power

- Many reasons why energy consumption should be declining
- Yet consumption still forecast to grow 1.2% p.a. until 2020
- a major reason why renewables can't plug much of the generation gap
The limits of wind power

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

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

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

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

2020 Renewable Electricity Predictions

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

FINAL THOUGHTS

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

- [www.danlewis.org](http://www.danlewis.org) - for published articles, papers, letters

- [www.ercouncil.org](http://www.ercouncil.org) - Britain’s oldest economics based think tank since 1943.

- Thankyou -