



## Energy Technology Perspectives 2008

### *Towards Country Level Granularity*

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ETSAP Workshop

Stanford University, 28 June 2007

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## Energy Technology Perspectives Publication 2008

- Integrates the contributions of the IEA technology network – including ETSAP
- Scenarios that provide a balanced view of the role technology can play
- Part of G8-deliverables – due February 2008
- Three parts
  - ◆ How to get there
  - ◆ Regional analysis
  - ◆ Special interest chapters

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## Outcome June 4-5 Meeting

- Established cooperation with ETSAP and a strong team of country modellers
- Focus on G8+5, may be also EU
- Scenarios ACT Map, TechPlus, and deeper emission reductions
- Provided an overview of key ETP scenario assumptions
- Provided an overview of key ETP technology assumptions
- Decided on a time path (first results early October, final results November-December)

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## Steps Since June 4-5 Meeting

- Proceedings & CD ready
- Discussion with CERT
  - ◆ Table of contents is OKed
  - ◆ No decision regarding scenarios
- TechPlus “Plus” concept will be discussed by the IEA Governing Board in October
- This is an early opportunity to get high-level government feedback

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## The Current IEA Scenarios

- ETP2006 ACT MAP +6% in 2050, compared to 2003
- ETP2006 TECH Plus -16% in 2050, compared to 2003
- ETP2006 and WEO2006 APS scenarios may be consistent with 3 degrees
  - ◆ Assuming significant reductions of non-energy CO<sub>2</sub> emissions and non-CO<sub>2</sub> GHG
- None of the IEA scenarios is consistent with <3 degrees
- One or more ambitious scenarios <3 degrees are needed
- These scenarios will have significant consequences for energy policy
- Deep post-2050 reductions will have important infrastructure consequences in the period 2025-2050
- Therefore more ambitious scenarios should have a 2100 time horizon

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## The Case for new Scenarios in ETP2008

- In time for the Japanese G8 summit
- The MARKAL/TIMES engineering approach is especially suited to study deep emissions reductions
- We are in uncharted territory; past experience (econometric models) are not suited for this type of analysis
- IPCC report suggests that the economic impacts are limited (<-5.5% of GDP; 295% growth instead of 300% growth between now and 2050)
- Governments want an IEA view on the feasibility and cost of such scenarios

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## Preliminary insights

- -50% worldwide is technically possible, but may be very expensive (marginal cost USD 250-500/t CO<sub>2</sub>)
- Even deeper cuts needed in OECD countries
- EU accounts only for 20% of world emissions; one player among many

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## Proposed Analysis

- Scenarios coherent and consistent with ACT Map and TechPlus
- Worldwide USD 25-50-100-200 CO<sub>2</sub> incentives (1<sup>st</sup> results today)
- August-September model analysis
- October discussion with GB regarding reporting

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## Reporting

- 2005-2015-2030-2050
- Primary energy demand (oil, coal, gas, nuclear, hydro, other renewables)
- Final energy demand (electricity, oil products, gas, coal, biomass, other renewables)
- Total final/sector (following IEA grouping: transformation, industry\*, residential, services)
- Energy CO<sub>2</sub> emissions
- IEA will provide a spreadsheet for reporting
- 40-page chapter in ETP2008 + tables in back of the book
- More detailed reporting by ETSAP ? (proposal)

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## Latest IEA Data

- Proceedings Technology Learning & Deployment workshop 11-12 June (online [www.iea.org](http://www.iea.org))
- New publication Tracking Industrial Energy Efficiency and CO<sub>2</sub> Emissions released 25 June
- New analysis on end-use efficiency trends

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## Network Expansion Status

- Canada: team designation under discussion
- UK: team designation under discussion
- Interest from Indian team
- Contacting Brazil (INETI, NEEDS)
- Contacting EU
- Next week China visit
- Need to follow up with South Africa and Mexico
- Russia poses a challenge. Interest from Cenef.  
No formal model analysis or down-scaling of ETP  
FSU results ?
- An important role for ETSAP

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Thank You

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## IPCC 4<sup>th</sup> Assessment Report Mitigation - Basis for Heiligendamm G8 communiqué

*Table SPM.5: Characteristics of post-TAR stabilization scenarios [Table TS 2, 3.10]<sup>37</sup>*

Category	Radiative Forcing	CO <sub>2</sub> Concentration	CO <sub>2</sub> -eq Concentration	Global mean temperature increase above pre-industrial at equilibrium, using "best estimate" climate sensitivity <sup>38, 39</sup>	Peaking year for CO <sub>2</sub> emissions <sup>40</sup>	Change in global CO <sub>2</sub> emissions in 2050 (% of 2000 emissions)	No. of assessed scenarios
	W/m <sup>2</sup>	ppm	ppm	°C	Year	percent	
A1	2.5 - 3.0	350 - 400	445 - 490	2.0 - 2.4	2000 - 2015	-85 to -50	6
A2	3.0 - 3.5	400 - 440	490 - 535	2.4 - 2.8	2000 - 2020	-60 to -30	18
B	3.5 - 4.0	440 - 485	535 - 590	2.8 - 3.2	2010 - 2030	-30 to +5	21
C	4.0 - 5.0	485 - 570	590 - 710	3.2 - 4.0	2020 - 2060	+10 to +60	118
D	5.0 - 6.0	570 - 660	710 - 855	4.0 - 4.9	2050 - 2080	+25 to +85	9
E	6.0 - 7.5	660 - 790	855 - 1130	4.9 - 6.1	2060 - 2090	+90 to +140	5
Total							177

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