

31st IAEE International Conference  
 June 18-20, 2008, Istanbul  
 Bridging Energy Supply and Demand:  
 Logistics, Competition and Environment

**EUs 20 % goals to reduce emissions of CO<sub>2</sub>, increase the use of renewable energy and increase energy efficiency - possibilities, costs and consequences. Abstract.**

Bo Nelson  
 Vattenfall AB, 162 87 Stockholm, Sweden  
 bo.nelson@vattenfall.com

### 1. Overview

The EU energy package, aiming at an action plan for energy and climate policy measures within the EU, was launched a year ago and resulted in a proposal 23 of January 2008. The package takes on three goals, which will have a significant influence on the energy markets in EU over the next decades:

-Increased use of renewable energy from today's 7 to 20 %. Basic principle will probably be an adding of 13 % for each country but the burden sharing negotiations has not started yet so it remains to be seen.

-20 % reduced emissions of CO<sub>2</sub> in relation to 1990 and unilaterally. Within an international agreement, EU has committed itself to 30 %.

-20 % increased energy efficiency compared to some sort of reference scenario (unclear how this will be constructed).

Realising these ambitious targets will have a large impact on the existing energy system and also society as a whole. The measures needed to fulfil them, overlap to some extent and are depending on the system borders. For example, increased use of renewable electricity or increased efficiency in using electricity in Sweden does not affect the emissions of CO<sub>2</sub> in Sweden but mainly those in Denmark. Fulfilling all three goals will in fact probably mean that two of them are overshoot.

EU goals regarding		
CO <sub>2</sub>	Renewables	Energy efficiency
20 %	?	?
?	20 %	?
?	?	20 %

Figure: Illustration of uncertainty regarding the three 20 % goals.

### 2. Methods

The presentation summarises a consequence analysis on EU-level carried out within Vattenfall, using a recently updated model for calculation of climate abatement costs developed together with McKinsey.\*

### 3. Results and conclusions

The presentation discuss to what extent the goals interdepend, overlap and overshoot and the costs and consequences for the energy system and society. To mirror the uncertainty the analysis have been made for all four combinations of two calculation rates, 4 and 8 %, and two oil prices, 80 and 160 USD/bl (with related prices of natural gas and coal).

---

\*)

<http://www.vattenfall.com/www/ccc/ccc/577730downl/index.jsp>