EU can become self sufficient in coal and gas

Looking at a longer perspective, indigenous fossil fuel production within EU27 will most likely continue to decrease. However, with concerted efforts to maximize production, the production decrease can be partly mitigated. This, combined with decreased fuel demand in the analysed pathways, implies that EU can become self sufficient in coal and, close to so, in gas.

Concise analysis of the reserves, resources and other premises for fossil fuel production within EU27 has been carried out by Jan Kjärstad. Based on these facts, projections of future fossil fuel production in a base case as well as in cases with concerted effort for maximum fossil fuel production within EU were constructed. These production projections are compared with the fuel demand of the two Pathways analysed in the synthesis of the Pathway project. The two Pathways - Market and Policy - has been presented in Newsletter #2/2009.

Coal self sufficiency by 2020

To reach the EU sustainability targets to 2020 and forwards, a drastic decrease in use of coal is expected. Reduced coal demand combined with the possibility of increased production of lignite, offer an opportunity for EU to become self sufficient in coal already by 2020.

EU could also be more or less self sufficient in gas. However, this cannot be achieved as early as 2020, but has to wait until 2050. The keys for attaining gas self sufficiency are reduced gas demand and possible utilization of unconventional sources; see Figure 1. Assuming that unconventional gas production can dominate the production by the end of the period studied, and that the gas demand will be halved by 2050 compared to current levels, the gap between demand and EU production will be very small. However, in the intermediate period, the need for import can increase, especially in the Market Pathway where there is a heavy reliance on gas power in the period 2020 to 2040.

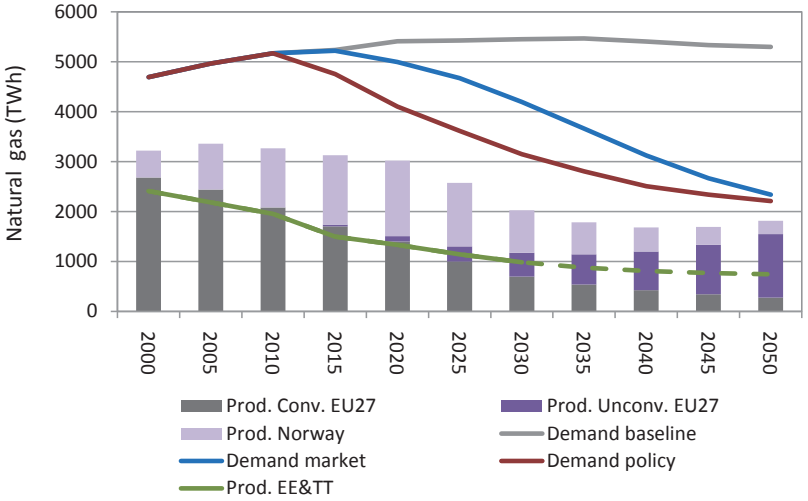

Figure 1: Indigenous gas production (conventional and unconventional) in EU27 and Norway and gas demand for the Policy and Market Pathways analysed.

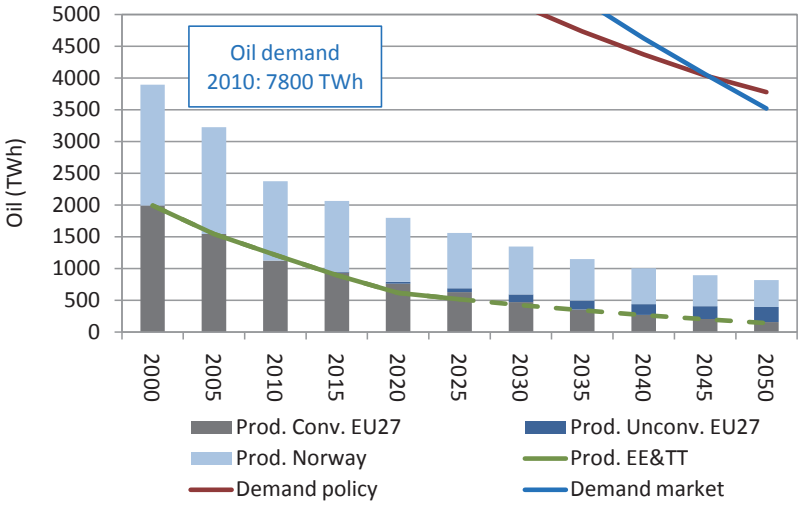

Figure 2: Indigenous oil production (conventional and unconventional) in EU27 and Norway and oil demand for the Policy and Market Pathways.

The fact that both the gas and the coal demand decrease in the Market and Policy Pathways is partly explained by energy efficiency measures which reduces the fuel demand and partly by the conversion to renewable alternatives, there among increased utilization of biomass. The use of biomass will more than threefold in the two Pathways and reach about 3600 TWh by 2050. This production is assumed to be realistic for a biomass production level within EU.

Need for oil import will persist

The production of conventional oil within EU27 will most probably decrease rapidly to just a fraction of today's production by 2050; see Figure 2. The opportunities for unconventional oil production are associated with high uncertainties, but even for high production projections a dramatic decrease of the total production is to be expected. The projections for Norway's production are similar, even though the decrease is not as rapid. The oil demand of EU27 is today about 7800 TWh, of which just a minor part is covered with indigenous production. This picture will maintain also for the two suggested pathways towards sustainability, even if the oil demand can decrease to less than half of current levels, see Figure 2.

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