



Coal & Carbon Capture and Sequestration

by

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Energy in Poland: Current situation and prospects

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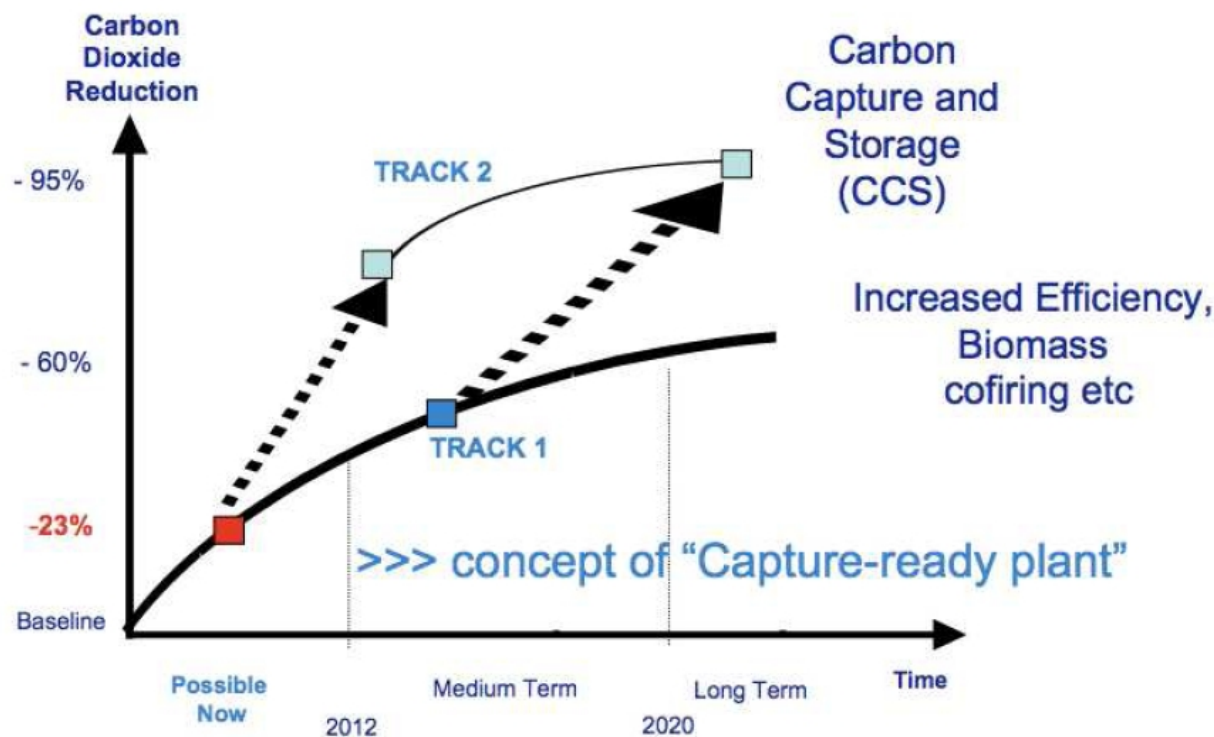


Coal & Energy Policy

- **IEA (2011):** Poland's energy mix dominated by coal (55% of primary energy supply, 90% of electricity generation).
 - ➔ *compatibility with the EU Energy-Climate Package?*
 - ➔ *potential of decarbonization in the power sector?*
 - ➔ *comment on the possibility of a technological lock-in?*
- **IEA (2011):** Poland as a resource-rich country in coal.
 - ➔ *state of hard-coal reserves and production trend by 2030?*
 - ➔ *shortages in lignite mining from 2015? new mines to be opened?*
- **IEA (2011):** the CO₂ intensity of the Polish economy is higher than the average among European IEA member countries. CO₂ emissions are expected to increase by 2020.
 - ➔ *reasons? accuracy of these forecasts?*
 - ➔ *influence of Polish installations on the CO₂ price?*

CCS

Figure 1: Two tracks towards decarbonising the electricity sector



Source: Farley (2007)

Note: Track 1 involves efficiency improvements and fuel-switching; Track 2 concerns the jump to CCS technologies.

CCS (ctd.)

Figure 2: Method of delivering CCS throughout the world with responsibility initially placed on developed nations



Source: Gibbins and Chalmers (2008)



CCS in Poland

- **Research, pilot and demonstration work in this field:**
 - ➔ *can you assess the technology readiness level (TRL) of various options to develop CCS in Poland?*

<i>TRL</i>	<i>Status</i>
1	<i>Basic principles observed and reported</i>
2	<i>Technology concept and/or application formulated</i>
3	<i>Analytical and experimental critical function and/or characteristic proof of concept</i>
4	<i>Technology / part of technology validation in a laboratory environment</i>
5	<i>Technology / part of technology validation in a working environment</i>
6	<i>Technology model or prototype demonstration in a working environment</i>
7	<i>Full-scale technology demonstration in working environment</i>
8	<i>Technology completed and ready for deployment through test and demonstration</i>
9	<i>Technology deployed</i>

Source: DEFRA



CCS in Poland (ctd.)

- **Example of TRL Scoring Tables of CCS Technologies in the UK:**

Technology	TRL
Amine scrubbing	7
Oxyfuel	6
IGCC	5
Calcium looping	4-5
Chemical looping	4

Source: Chevallier (2010)



Thanks for your attention!