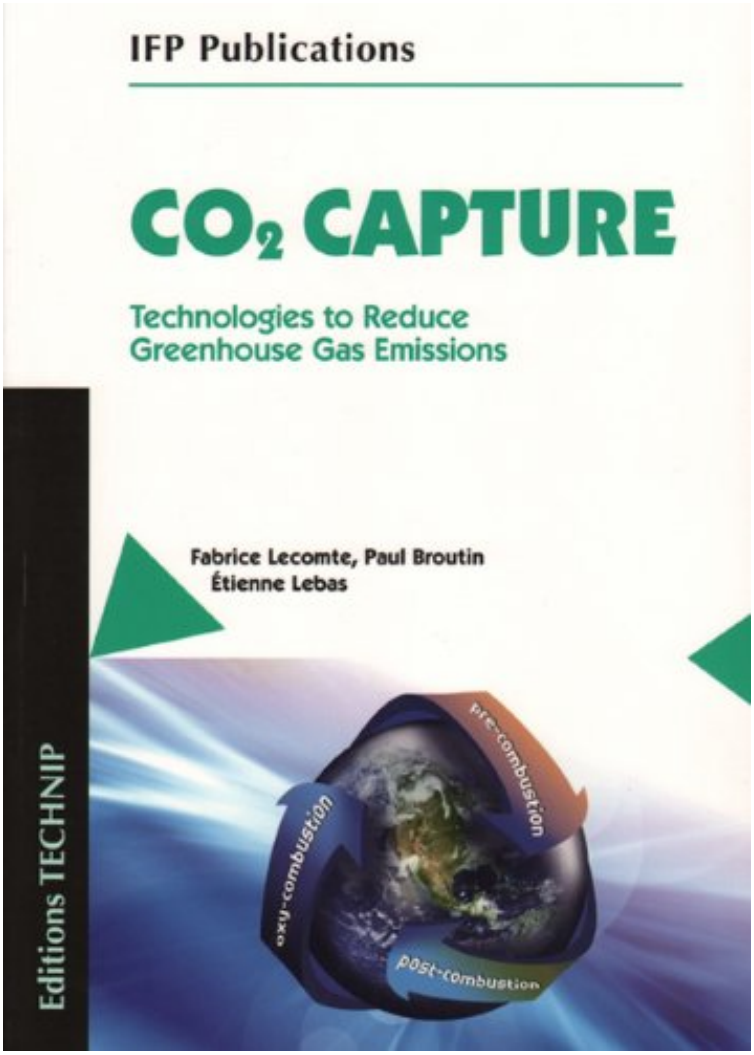
CO2 Capture: Technologies to reduce Greenhouse Gas Emissions (IFP Publications)

Paul Broutin, Fabrice Lecomte
*ebooks | Download PDF | *ePub | DOC | audiobook*



#4316470 in Books 2010-08-03Original language:EnglishPDF # 1 9.50 x .50 x 6.75l, .75 #File Name: 2710809486176 pages | File size: 44.Mb

Paul Broutin, Fabrice Lecomte : CO2 Capture: Technologies to reduce Greenhouse Gas Emissions (IFP Publications) before purchasing it in order to gage whether or not it would be worth my time, and all praised CO2 Capture: Technologies to reduce Greenhouse Gas Emissions (IFP Publications):

CO2 capture and geological storage (CCS) is now recognised as being one of the pathways that can be implemented to reduce CO2 emissions and fight against global warming. But where, how and at what price can CO2 be captured? This

book attempts to provide the answers to these questions, reviewing the state of the art of the technologies required. It presents the three main pathways considered in which the CO2 capture technologies are expected to be implemented, respectively: the post-combustion pathway, in which the CO2 contained in industrial flue gases is extracted; the oxy-combustion pathway, in which combustion is performed in oxygen to obtain flue gases with high CO2 concentration; and lastly the pre-combustion pathway, in which carbon is extracted from the initial fuel to generate hydrogen, whose combustion will produce only water vapour. The book introduces, for each pathway, the technologies currently available and those under development. It is intended for everyone wanting to gain a better understanding of the mechanisms implemented in CO2 capture operations, as well as the technological and economic challenges to be met to ensure that the costs generated by these operations are no longer an obstacle to their worldwide generalisation.Contents: 1. Why capture and store CO2? Global warming. How to reduce CO2 emissions. Main links of the CCS chain. 2. Where capture CO2? CO2 fixed emission sources worldwide. Fixed sources in France. CO2 capture potential in France. 3. Post-Combustion CO2 capture. Principles and stakes. Characteristics of post-combustion flue gases. Separation techniques potentially suitable for post-combustion CO2 capture. Technologies under development for post-combustion CO2 Capture. CO2 conditioning. Conclusion. 4. Oxy-combustion CO2 capture. Principles and stakes. Oxy-combustion. Chemical looping combustion. CO2 conditioning. Demonstrations. 5. Pre-combustion CO2 capture. Principles and stakes. Syngas production. Water-gas shift reaction. CO2 extraction. CO2 conditioning. Hydrogen combustion. Integrated power production processes with pre-combustion CO2 capture. 6. Capture and store CO2: at what cost? Calculation bases. CO2 capture costs. CO2 transport costs. CO2 storage costs. Trend in the cost of the CCS chain - Power production. Variability of CCS chain costs. Application to existing installations. Conclusion. Appendix.