



Arthur Lee
On behalf of the CO₂ Capture Project
Chevron Services Company
6001 Bollinger Canyon Road
San Ramon, California 94583
United States of America

To: United Nations Framework Convention on Climate Change (UNFCCC) Secretariat
Email Address: secretariat@unfccc.int

The Subsidiary Body for Scientific and Technological Advice has been requested by the Conference of Parties serving as the Meeting of Parties to the Kyoto Protocol at their Sixth Meeting (CMP.6) to “elaborate modalities and procedures for the inclusion of carbon dioxide capture and storage in geological formations as project activities under the clean development mechanism. ...” The CMP further decided that the modalities and procedures shall address a list of issues, described in paragraphs (3)(a) to (3)(o) of the decision -/CMP.6.

CCP is a joint industry project, now in Phase 3, comprising of member companies BP, Chevron, ConocoPhillips, ENI, Petrobras, Shell and Suncor, with the Electric Power Research Institute (USA) as an associate member. Since its formation in 2000, the CCP has undertaken more than 150 projects to increase the knowledge of science, economics and engineering applications of CO₂ capture and storage. The group has been working closely with government organizations — including the US Department of Energy, the European Commission and more than 60 academic bodies and global research institutes.

In 2009, the CCP published the book entitled *A Technical Basis for Carbon Dioxide Storage*. The purpose of the book is to provide a guide to the major technical issues related to the subsurface geological storage of carbon dioxide. It contains both general information and specific details about technologies and applications that are likely to be used in CCS. It is one of the most downloaded items from the CCP website.¹ The authors offer their insights on expectations for CCS based on many years of cumulative experience developing analogous oil and gas projects, complemented by knowledge gained by the first eight years of CCP.

The book is structured in four chapters. Chapter One examines the fundamental questions: How is a storage site selected? What criteria matter most and what data is collected to evaluate objectively the suitability of a proposed site? What makes some locations inherently better choices than others for storage based on geological context, knowledge and data availability? What processes are involved in geological storage?

¹ CO₂ Capture Project website reference: http://www.co2captureproject.org/co2_storage_technical_book.html





The second chapter focuses on wells and the potential for CO₂ to leak from existing wells into aquifers or to escape to the surface due to open conduits or cement deterioration. The issues surrounding well integrity, cement and well construction techniques for wells exposed to CO₂, and results from recent field and laboratory experiments are discussed. Analysis suggests that due diligence coupled with proper well testing and good science, transforms this potential problem into a very manageable issue.

The third chapter examines monitoring and verification techniques. Effective monitoring is accomplished mainly through data acquisition and establishing systems to model the position of CO₂ in the subsurface. By design, monitoring addresses key questions about potential concerns and provides substantial project performance data. A good monitoring program will serve to avoid potential problems as opposed to providing indication of problems that have already occurred.

The issues arising from operations and eventual closure of a storage site are assessed in Chapter Four. Some regulators have considerable experience with the closure of oil and gas operations. Based on those practices, practical regulations can be created that provide realistic assurance that the process will be safe and effective. In addition, the maximum storage potential of given systems and what this means for injection rates and pressures is examined.

In the book, a number of case studies are summarized to give a deeper insight into the technical issues involved.

We are also transmitting to you a second study which the CCP completed in November 2010. The report is entitled *Update on Selected Regulatory Issues for CO₂ Capture and Geological Storage*.

This report provides an up-to-date review of a number of regulatory issues applicable to CCS projects identified as priority areas by the CCP, and identifies potential barriers or gaps. The report also presents a survey of existing and emerging monitoring, reporting and verification guidelines and requirements applicable to CCS, as well as perspectives from CCS project developers and regulators on key regulatory issues. For example, significant progress has been made during the last few years across the jurisdictions under study towards the development of legal and regulatory frameworks for CCS.

We hope that these two documents can be helpful in further informing the SBSTA on the elaboration of modalities and procedures for items (3)(a) to (3)(o) of the decision text.

Very truly yours

Arthur Lee

Attachments: (1) *A Technical Basis for Carbon Dioxide Storage* (2009) by the CO₂ Capture Project
(2) *Update on Selected Regulatory Issues for CO₂ Capture and Geological Storage* (2010) by the CO₂ Capture Project

