



Carbon Capture & Storage (CCS) in Fossil Fuel Production: A Sectoral Approach?

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CCS is a mitigation action, not a “technology”

- CCS unique in its potential to mitigate O&G emissions – enables transition to ‘post-fossil fuel’ energy future
- CCS recognised by UNFCCC as a “mitigation of emissions at source” – thus CCS an eligible mitigation action under emissions trading schemes and the CDM
- IPCC’s 2006 Revised Guidelines for National GHG Inventories ensure common CCS accounting standard
- CCS monitoring/reporting guidelines pending adoption
- CCS policy gaps (not huge) remain to be resolved

CCS Critically Important to industry & govt

- Fossil fuels will remain a key part of energy mix for decades to come; energy security concerns will prompt full uptake of fossil resources
- Fossil fuel producers under significant pressure to reduce CO₂, but efficiency gains & process improvement options limited at wellhead
- Many major new gas fields have higher CO₂ content = higher venting at platform when gas is purified for pipeline/LNG quality product
- Most associated gas from remote oil fields has limited/no local market = flaring of gas at platform when no local gas market exists
- New ventures like oil sands, coal-to-liquids inherently carbon-intensive and also have limited process change/efficiency options at source
- Thus CCS is main option to deliver more than incremental reductions

CO₂ Capture & Storage: EU ETS example

- Offshore oil platform/power plant is a covered “installation” under the EU ETS and produces 500,000 tCO₂ per annum on average
- Assume 95% free EU Allowances allocated = 475,000 tCO₂ p.a.
- 500,000 tCO₂ p.a. are sent off-site to an approved CCS site
- *Emissions of Zero* tCO₂ p.a. = surplus of 450,000 allowances
- Surplus allowance value: 450,000 x 15 = 6.75 million Euros
- EU MS/verifiers would confirm CO₂ volumes not emitted in CCS
- Future allocation would be based on tCO₂ *produced*, not stored

CCS take-up: policy as well as economic barriers

- CO₂ emissions are *inherent* in energy projects - especially in major new “mega” O&G projects and new carbon-intensive projects like oil sands or coal-to-liquids
- If CO₂ reductions mandated for O&G producers, CCS is key option after marginal efficiency gains except shutdown
- EOR economics may be most favorable for CCS, and EOR will be monitored to fit new CCS requirements
- Govts must agree CCS rules to ensure this mitigation option is available to the O&G sector – not a technology question but a regulatory/policy matter to resolve