

Annex of Regulation and Best Practice

for Developing Unconventional Gas

This annex contains references to selected examples of current regulation and best practice, by relevant entity, for developing unconventional gas resources. These were chosen based on their close alignment with principles stated in the “Golden Rules”; consequently, many were influential in the development of the Golden Rules. The intention of this annex is to centralise selected examples, making these accessible to interested parties. It is not meant to be exhaustive and will be updated periodically as regulations are issued or guidance on best practice promulgated. Comments are welcome and can be emailed to weo@iea.org.

Regulation

Source	Reference
Colorado Oil and Gas Conservation Commission (United States)	Access to Records (Rule 205) General Drilling Rules (Rule 317) Public Water System Protection (Rule 317B) Monitor Pressures During Well Stimulation (Rule 341) Coalbed Methane Wells (Rule 608) Odors and Dust (Rule 805) Pit Permitting/Reporting Requirements (Rule 903) Pit Lining Requirements and Specifications (Rule 904) Spills and Releases (Rule 906)
Energy Resources Conservation Board (Alberta, Canada)	Mitigating Risks of Hydraulic Fracturing (List of relevant directives)
Pennsylvania Department of Environmental Protection (United States)	Oil and Gas Wells (25 Pa. Code, Chapter 78) Oil and Gas Conservation (25 Pa. Code, Chapter 79) Water Resources (25 Pa. Code, Chapters 91-111) Air Resources (25 Pa. Code, Chapters 121-129 and 131-145)
State of Queensland (Australia)	CSG-LNG Safeguards (List of relevant regulations)
US Department of Interior Bureau of Land Management	Regulation of Hydraulic Fracturing on Federal and Indian Lands (Proposed rule; 43 CFR Part 3160)
US Environmental Protection Agency	New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews (Final rule; 40 CFR Part 63) Effluent Guidelines for Oil and Gas Extraction (Final rule; 40 CFR Parts 9 and 435) Underground Injection Control (UIC) Program – Class II Wells, Oil and Gas GHG Mandatory Reporting Program – Subpart W, Petroleum and Natural Gas Systems

Best practice

Source	Reference
American Petroleum Institute (API) (United States)	Overview of Industry Guidance/Best Practices on Hydraulic Fracturing Hydraulic Fracturing Operations – Well Construction and Integrity Guidelines Water Management Associated with Hydraulic Fracturing Practices for Mitigating Surface Impacts Associated with Hydraulic Fracturing Isolating Potential Flow Zones During Well Construction Environmental Protection for Onshore Oil and Gas Production
Canadian Association of Petroleum Producers (CAPP)	Hydraulic Fracturing Operating Practices, Guiding Principles Fracturing Fluid Additive Disclosure Fracturing Fluid Additive Risk Management Baseline Groundwater Testing Wellbore Construction Water Sourcing and Reuse Fluid Handling, Transport and Disposal
Interfaith Center on Corporate Responsibility and Investor Environmental Health Network	Extracting the Facts: An Investor Guide to Disclosing Risks from Hydraulic Fracturing Operations

Relevant reports

Source	Reference
Energy Resources Conservation Board (Alberta, Canada)	Unconventional Gas Regulatory Framework – Jurisdictional Review (January 2011)
European Commission	Climate impact of potential shale gas production in the EU (Directorate General for Climate, July 2012) Final Report on Unconventional Gas in Europe, prepared by Philippe & Partners (Directorate General for Energy, November 2011) Support to the identification of potential risks for the environment and human health arising from hydrocarbons operations involving hydraulic fracturing in Europe (Directorate General for Environment, August 2012)
European Commission Joint Research Centre	Unconventional Gas: Potential Energy Market Impacts in the European Union (2012)
Federal Environment Ministry (Germany)	Assessing Shale Gas Production in Germany (in German) (December 2011)
International Association of Oil & Gas Producers (United Kingdom)	Regulators use of standards (March 2010) Global standards used locally worldwide: List of ISO TC67 standards and their status with API, CEN and various other standards developing organisations (August 2011)
National Petroleum Council (United States)	Prudent Development – Realizing the Potential of North America’s Abundant Natural Gas and Oil Resources (September 2011)
The Royal Society and The Royal Academy of Engineering (United Kingdom)	Shale gas extraction in the UK: a review of hydraulic fracturing (June 2012)
Queensland Water Commission (Australia)	Draft Underground Water Report – Surat Cumulative Management Area (for public consultation) (May 2012)
Shale Resources and Society Institute (United States)	Environmental Impacts During Marcellus Shale Gas Drilling: Causes, Impacts and Remedies (May 2012)
Society of Petroleum Engineers	State and Federal Regulation of Hydraulic Fracturing: A Comparative Analysis (January 2011)
State of Pennsylvania (United States)	Governor’s Marcellus Shale Advisory Commissions Report (July 2011)
State Review of Oil and Natural Gas Environmental Regulations (STRONGER) (United States)	State reviews of hydraulic fracturing for Arkansas, Colorado, Louisiana, Ohio, Oklahoma and Pennsylvania (2010-2012)
UK Department of Energy and Climate Change	Preese Hall Shale Gas Fracturing Review and Recommendations for Induced Seismic Mitigation (April 2012)
US Department of Energy	Secretary of Energy Advisory Board (SEAB) Shale Gas Production Subcommittee Ninety Day Report (July 2011) SEAB Shale Gas Production Subcommittee Second Ninety Day Report (November 2011)