

# Interfaith Center on Corporate Responsibility Hydraulic Fracturing Update

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February 4, 2016

New York, NY



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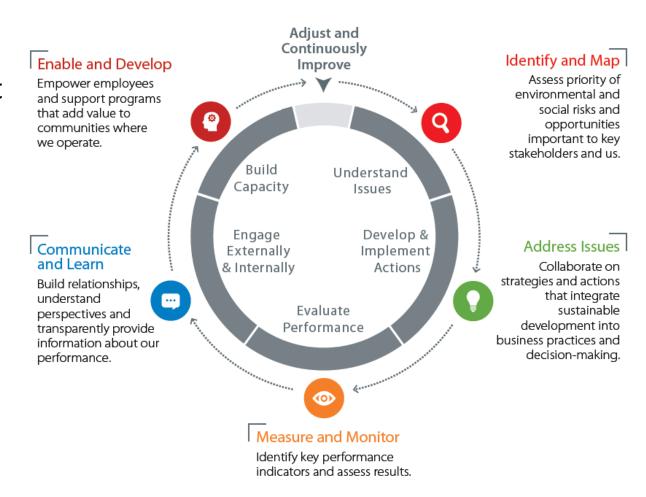
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#### Introduction & Overview

#### Agenda

- Approach to sustainable development
- Context for approach to hydraulic fracturing
- Prioritization process
- Global risks, processes and tools
- Customized processes and tools for hydraulic fracturing
- Mapping, measuring & monitoring
- How are we doing?
  - Disclosing the Facts



## Onshore Well Management Principles

- Onshore Well Management Principles guide how we protect and respect people and the environment
- Risk assessments and Action Plans









- First priority: Get the basics right well integrity
  - Onshore Well Management Principles and Onshore Well Integrity
  - Region-specific geological, environmental and operational requirements
- Well integrity is essential to
  - Safeguard workers and communities
  - Minimize risks of leaks and spills
  - Protect groundwater and surface water
- Focus on water and hydraulic fracturing for today's update

# Water & Hydraulic Fracturing - Identify & Map

#### **Water Action Plan**

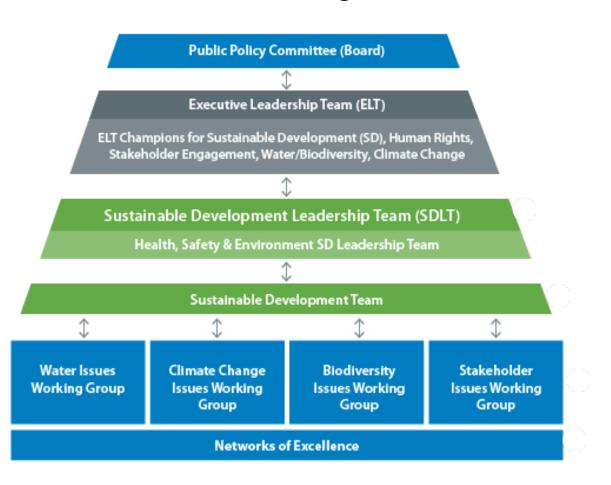
Effective, Efficient, Sustainable, Environmentally and Socially Responsible Water Management

Understanding Footprint	Managing Operations and Projects	Managing Risks and Opportunities	Engaging Externally	
Understanding Water Use	Asset Resiliency Assessments	Data Collection	External Water Stakeholders	
Reduce Cost	Identify Risks and Opportunities	Minimize Water Risks	Community Engagement	
Assess Peer Performance	Reducing Freshwater Use	Collaborate Across Company	Policy/ Regulatory Development	
Building Capacity: Resourcing, Knowledge Sharing, Skill Development				

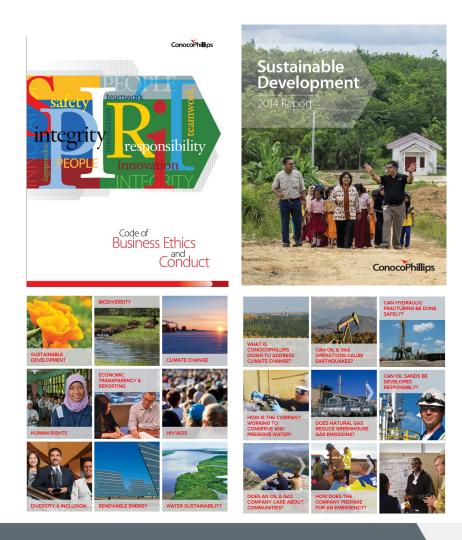
- Risk-based approach
- Global insights
  - IPIECA/WBCSD Global Water Tool
- BU/asset level risk assessments
  - GEMI Local Water Tool or similar
- Business Unit <u>Action plans</u>
- Key actions rolled up into Water Action Plan
- Evaluation on a company-wide basis

## Tools to Address Risks & Opportunities – All Types of Production

- Governance
  - Integration
  - Direction and oversight



# Shared public commitments, policies and positions



# Tools to Address Risks & Opportunities – All Types of Production

- Proven standards, practices, guidelines, procedures & tools
  - Structured approach for key steps
  - Streamlining

- Global Onshore Well **Hydraulic Fracturing** Integrity Management Fracking Fluid Seismicity **Principles** Overview Overview
- Global Water Sustainability Center
  - Advancing technology
- ConocoPhillips Center for a Sustainable WE2ST
  - Colorado School of Mines
- Groundwater baseline assessments
- Benchmarking
  - By/for industry: IPIECA and OGP
  - By/for investors & ratings/rankings: Including CDP, DJSI, FTSE4Good



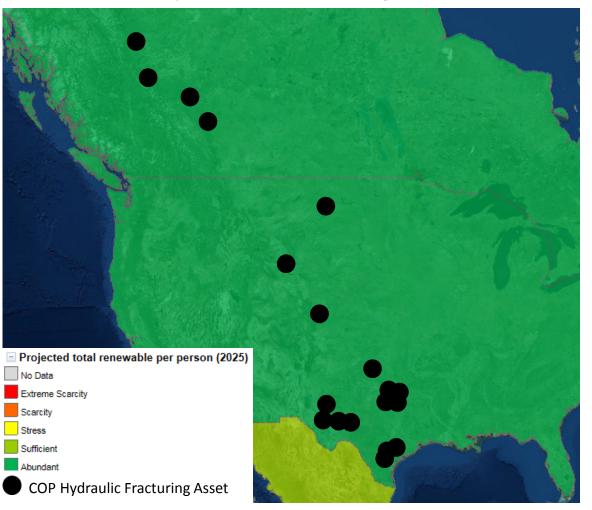


## Hydraulic Fracturing – Tools to Address Risks & Opportunities

- Lower 48 Water Leadership Team and
- Water Solutions advance technology and innovation to
  - Reduce freshwater use
  - Increase use of non-fresh sources
  - Increase recycling and reuse
  - Reduce water discharge and disposal
- Collaboration & Best Practices Development
  - Eagle Ford Water Consortium / South Texas Energy and Economic Roundtable
  - Energy Water Initiative
  - Northeast British Columbia Montney Operators Group
  - CAPP hydraulic fracturing <u>operating practices</u> and PTAC <u>Tight Oil and Gas Technology Action Plan</u>
- Benchmarking by/for investors & ratings/rankings: <u>Disclosing the Facts</u>

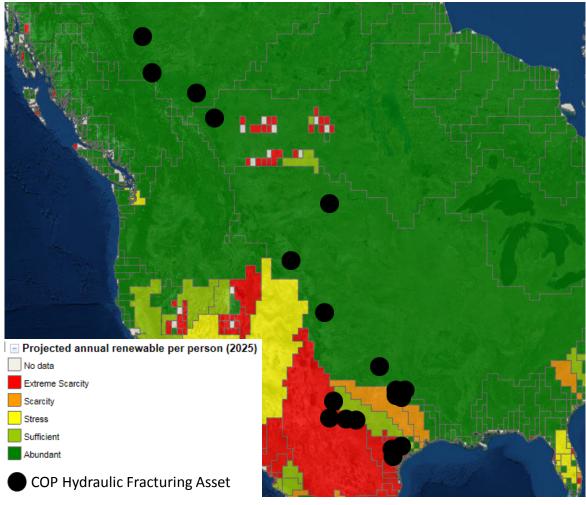
## Identify & Map – Future Water Availability for Hydraulic Fracturing Assets

Risk assessment - abundant water for human needs near Hydraulic Fracturing assets in 2025



IPIECA Global Water Tool Output: Water Resources by Country (2025)

Risk assessment – stress & scarcity in watersheds for two Hydraulic Fracturing plays in 2025



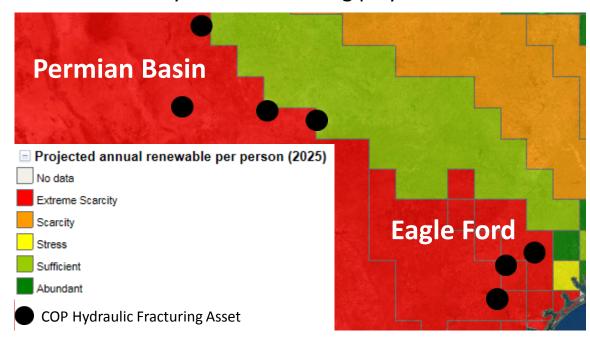
IPIECA Global Water Tool Output: Water Resources by Watershed (2025)

# Measure & Monitor – Focus on High Priority Areas and Operations

#### Actions include:

- Reduce freshwater use
- Explore non-freshwater sources
- Reuse/recycle produced water
- Reuse municipal waste water
- Address environmental complexity
- Solutions developed
  - Contribute to continuous improvement
  - Added to Water Solutions toolbox
  - Shared as case studies
  - Applications for other assets

# Zoom-in Risk assessment – stress & scarcity in watersheds for two Hydraulic Fracturing plays in 2025



IPIECA Global Water Tool Output: Water Resources by Watershed (2025)

# Communicate & Learn / Enable & Develop – Eagle Ford

- Water Sourcing and Recycling
  - Deeper brackish sources not used by local landowners (<u>SPIRIT Q4 2015</u>, p. 15)
  - More than 25% non-fresh water used in 2014
  - Recycle municipal wastewater effluent in <u>Karnes County</u>
- Land Management
  - Reducing acreage/well by 70% or more versus single well pads
  - Recycle oil-based drill cuttings (<u>SPIRIT Q4 2015</u>, p. 42)
- Regional Collaboration
  - <u>Eagle Ford Water Consortium</u> Now South Texas Energy and Economic Roundtable
- Local Community
  - Tool to discuss water sources with stakeholders
  - Reduced <u>truck use</u> by 40%
  - <u>Eagle Ford Landing</u> and Citizens Advisory <u>Committee</u>
  - Poll to listen and determine what topics are important
  - Show our operations: Facilitate tours in the Eagle Ford

# Communicate & Learn / Enable & Develop – Permian Basin

#### Water Sourcing

Focus on non-freshwater sources (<u>SPIRIT Q4 2015</u>, p. 15)

#### Water Recycling

- Fit-for-purpose produced water treatment (SPIRIT Q4 2015, p. 11)
- Produced water deoiling technology (<u>SPIRIT Q4 2015</u>, p. 14)
- Reuse/recycle of 250,000 barrels (<u>SPIRIT Q4 2015</u>, p. 17)

#### Regional Collaboration

Energy Water Initiative including Water Management <u>Case Studies</u>

#### Local Community

• Reduced truck traffic

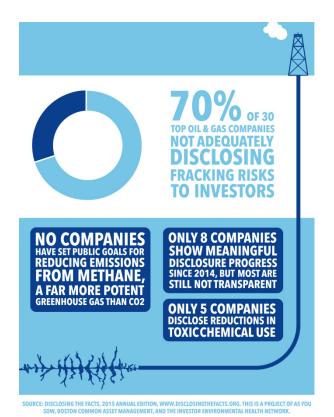




# Disclosing the Facts Hydraulic Fracturing Scorecard – How are we doing?

2015 Disclosing the Facts Scorecard results for ConocoPhillips

- More than doubled score
- Moved from 19<sup>th</sup> rank to 10<sup>th</sup>
- Notable practice mention



ConocoPhillips Disclosing the Facts Score Results	2014 Score	2015 Score
Toxic Chemicals	0	0
Water and Waste Management	1	3
Air Emissions	2	3
Community Impacts	1	2
Management and Accountability	1	3
Total	5	11
Rank	19 (out of 30)	10 (out of 30)

ConocoPhillips does not agree that 70% not adequately disclose risks – many companies including COP are demonstrating good performance

- Risk-based approaches are well-recognized
  - First priority: The basics well integrity
  - Next priority: Identify risks such as water scarcity
  - Different plays require different priorities
- Scorecards do not tell the whole story

#### Summary

- Comprehensive, fit-for-purpose approach
- Taking action on hydraulic fracturing issues
  - Prioritization process
  - Global risks, processes and tools
  - Customized processes and tools for hydraulic fracturing
  - Mapping, measuring & monitoring
- External perspective on our approach and performance
  - Disclosing the Facts

