



DOHA 2012
UN CLIMATE CHANGE CONFERENCE
COP18·CMP8

Oil Sustainability in Carbon Constrained World

The Doha Climate Gateway : Challenges Beyond 2012

The 31st JCCP International Symposium

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Ministry of Petroleum and Mineral Resources

Overview

1 COP 18 Outcome

2 Building of a New Agreement

3 Oil producer Concerns

4 Win Win Solutions

5 Efforts of Saudi Arabia

6 Summery



- **Amendment of the Kyoto Protocol**
 - **Second Commitment Period Adopted for 8 Years Duration (Jan 2013 – Dec 2020)**
 - **Targets are politically binding and will become legally binding upon completion of the ratification process.**
 - **38 industrialized countries (representing Europe and Australia) have submitted their letters of consent for this commitment period.**
 - **Canada, the Russian Federation and Japan have declined to join. (New Zealand ?)**
 - **CDM will continue for the second Commitment. 2015 will decide its future.**



- **Time table for the 2015 global climate change agreement and increasing ambition before 2020**
- **Finance.**
- **Adaptation.**
- **Technology**
- **Avoiding negative impacts of climate action (Response Measures)**



- **Avoiding negative impacts of climate action (Response Measures)**
- **Economic diversification decision**
 - Developed by Saudi Arabia, Qatar, Bahrain, UAE
 - Window for Future Action
 - Recognizing Economic Diversification Goals
 - Co-benefits Include Adaptation and Emission Reduction
 - Recognizes Special Circumstances

Building of a New Agreement

Outcome ?

- Legal Instrument,
- Protocol, or
- Agreed Outcome with Legal Force
- Under the Convention
- Applicable to All Parties
- Completed by 2015
- Entry into Force by 2020



Building of a New Agreement

Building Trust

- **UNFCCC is still the Foundation;
No renegotiation of the
Convention Principles and/or its
Annexes.**
- **Maintaining the Existing
Balance of Rights and
Obligations.**
- **Address concerns of all
parties, especially developing
countries.**



Oil producers Concerns

- **Negative Impact of Mitigation Policies and Measures:**
- **Oil producers should not bear the heaviest burden of climate mitigation policies; Indications are that they will.**
- **Distortions already exist in the market against oil.**



Finding Win-Win Solutions

- **Mitigating Climate Change**
- **Minimizing the Impact of Response Measure**
- **Sustainable Development is Not Threatened**

technology development will play a pivotal role in finding realistic and credible solutions to deal with the potential challenges of climate change.

Technology is the Answer

Carbon Capture and Storage

- **High Mitigation Potential (up to 55% of CO₂ emissions until 2100 – IPCC Special Report on CCS)**
- **Incentives to reduce cost and expedite deployment and diffusion for wide scale implementation in Developing Countries (Project Eligibility under CDM Type Of Financial Mechanisms.**
- **Opportunities for many developing countries to have more engagement in mitigation activities**

Technology is the Answer

- **Energy Efficiency**
 - Sine the early 70s, actual energy use would've been 50% more if it was not for conservation and efficiency improvements
- **Renewable Energy**
 - Solar, Wind, Hydro
 - Overall share is 4 to 5% of Energy Mix
 - Dominant Role of fossil fuels to continue (80% of energy Mix))

Efforts of Saudi Arabia

Technology based solutions:

- **Research and development.**
- **Energy Efficiency.**
- **Renewable Energy.**
- **International corporation.**

Efforts of Saudi Arabia

Research & Development:

- Partnerships with -and grants to many international research centers and institutions.
- Promotion of environmental research and research on cleaner oil.
- Solar Energy has High Research Priority in the Kingdom.

Technology Based Solutions



Research & Development:

- Saudi Arabia has established a roadmap for its carbon management program.

CO₂ Capture from Fixed Sources

CO₂ Reduction from Mobile Sources

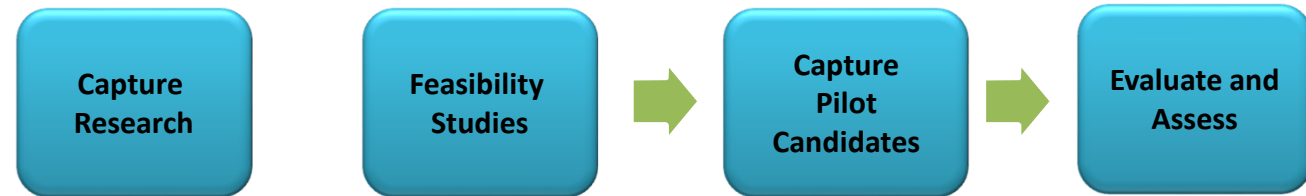
CO₂ Industrial Applications

CO₂ Storage

CO₂-Enhanced Oil Recovery

Technology Based Solutions

Capture from Fixed Sources



Technology Based Solutions

CO₂ Reduction from Mobile Sources

- Prototype Demonstration vehicle
- Integrated system
- Proved the concept
- 10% CO₂ reduction
- Bottlenecks identified



Technology Based Solutions

Industrial Application

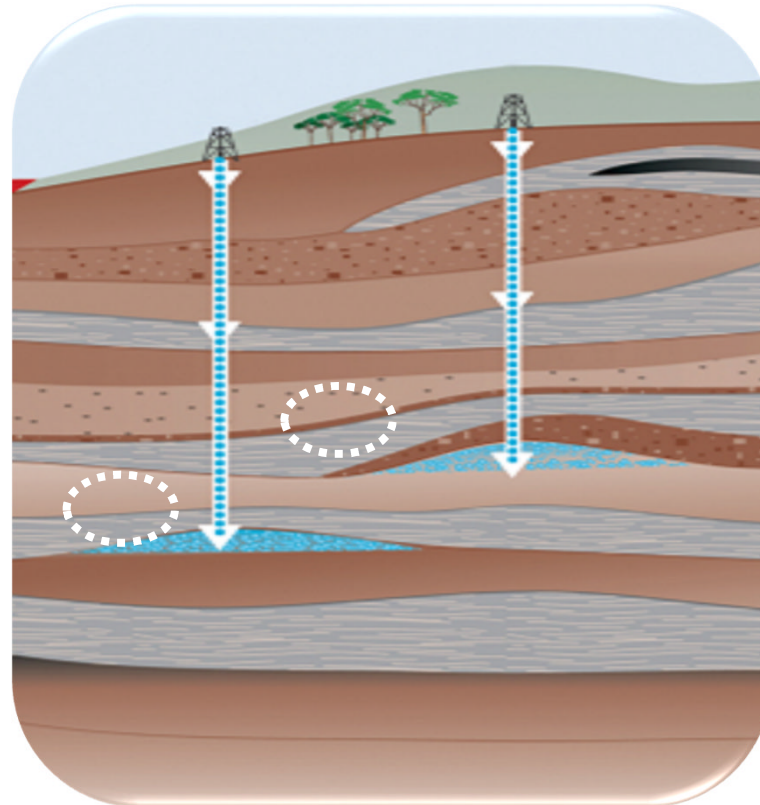
- **Polymers**
- **Carbon Fiber**
- **Construction Material**
- **Chemicals**



Technology Based solutions

CO₂ Storage

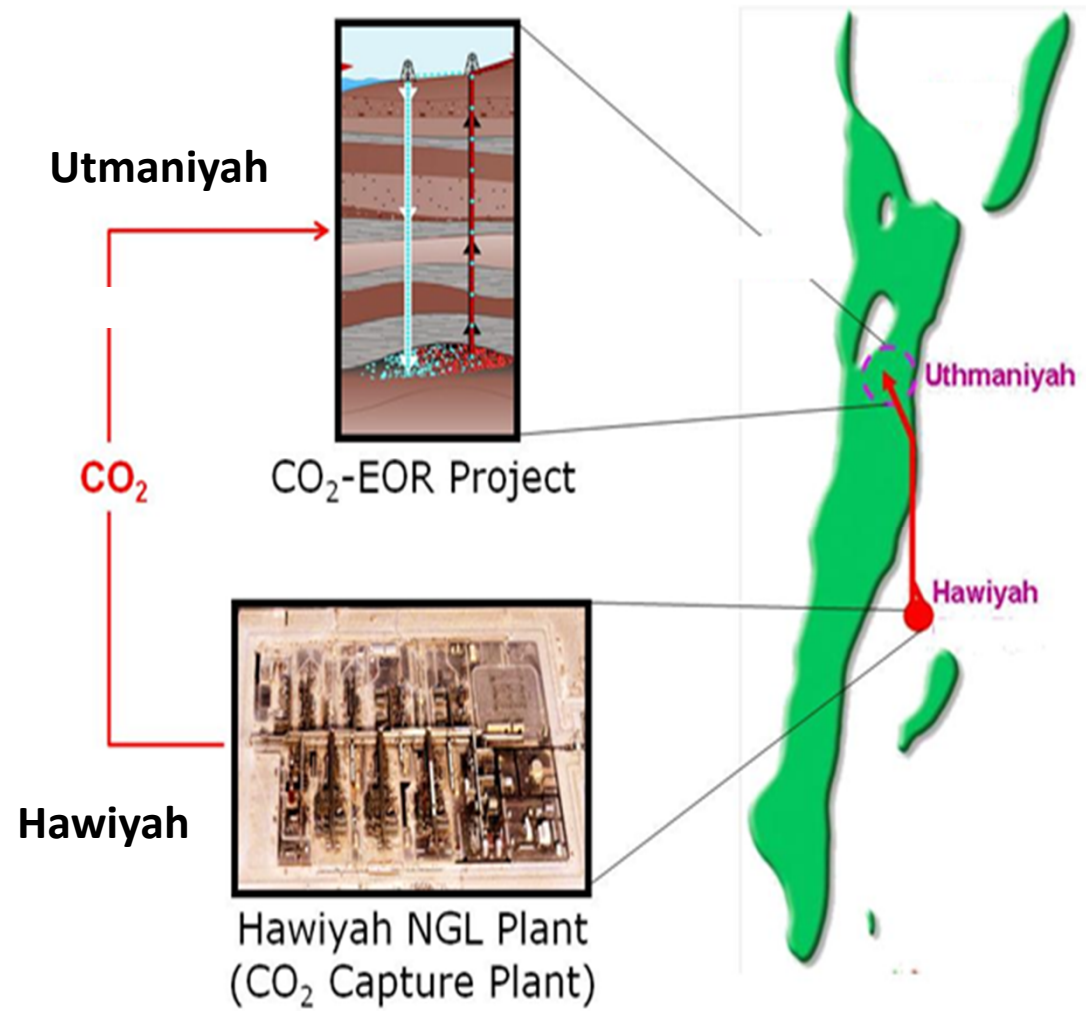
- Storage
- Monitoring
- Long Term Impact



Technology Based Solutions

CO₂-Enhanced Oil Recovery

- Lab Studies
- Reservoir simulation
- Field Experimentation
- CO₂-EOR Demo



Renewable Energy

Renewable energy is an important complement of the energy mix in Saudi Arabia.

RE Sources :

solar, wind, geothermal energy, and waste-to-energy

On going Projects

- 41 GW KA-CARE solar project
- Dholm Wind farm (10 MW)
- Solar Power project at North Park Building (Saudi Aramco).
- Solar Powered desalination plant (KACST).
- Solar Water Heating Project



Energy Efficiency

- **2003:**
 - Launch of a national effort (NEEP) to enhance demand-side energy efficiency (focused on electricity) in collaboration with public and state-own.
- **2007-2010:**
 - Initiative by the Ministry of Petroleum to transfer the National Energy Efficiency Program to a permanent entity; the Saudi Energy Efficiency Center, established in October 2010.
- **2010-2012:**
 - Inter-agency effort to launch the Energy Efficiency Program (EEP)
 - Targeting ;Buildings, Transportations, Industry, and Urban.

International Corporation

- **Active member in CSLF.**
 - Purpose: facilitate the development of improved cost-effective technologies of separation and capture of CO₂ for its transport , use, and storage.
- **Four Kingdoms Initiative.**
 - Members: Netherlands, UK, Norway and Saudi Arabia.
 - Objective: speed up the development, commercialization and dissemination of CCS technologies
- **Bilateral Offset Credit Mechanism (BOCM), Japan;**
 - distribute the low carbon technologies and benefit from the generated credits
- **Saudi Aramco and Korea Advance Institute of Science and Technology (KIAST)**
 - established CO₂ research center.
- **Workshops, Conferences, in Saudi Arabia on CCS**

In Summary

- **Oil producers are ready to positively engage and be part of any new agreement.**
- **In any new agreement, Developing country oil producers should not be impacted with more economic burden in an unfair manner.**
- **Oil and gas will be an important part of energy mix after 2030. Therefore, oil and gas sustainability is essential for both consumers and producers.**
- **Saudi Arabia aims to provide the world with reliable, affordable, sustainable, and safe energy source.**
- **Saudi Arabia encouraged the research and development in the energy field to maximize the energy efficiency in the Kingdom.**
- **KSA promotes investments in Renewable energy to increase energy mix.**
- **Saudi Arabia Showcase its effort in developing and supporting CCS.**



THANKS

感謝