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AL REYADAH
شركة أبوظبي للالتقاط الكربون
ABU DHABI CARBON CAPTURE COMPANY

Review of Project Nominated for CSLF Recognition:

Al Reyadah CCUS Project

Arafat Al Yafei - Abu Dhabi Carbon Capture Company - Al Reyadah
United Arab Emirates

1st May 2017

carbon sequestration leadership forum

Projects Interaction & Review Team (PIRT)

Al Reyadah - Abu Dhabi CCUS Project

Al Reyadah is a pioneering initiative and a **Knowledge Hub** for Abu Dhabi in **CCUS Technology**, and it is a working platform for future **CCUS Projects**

United Arab Emirates (UAE)

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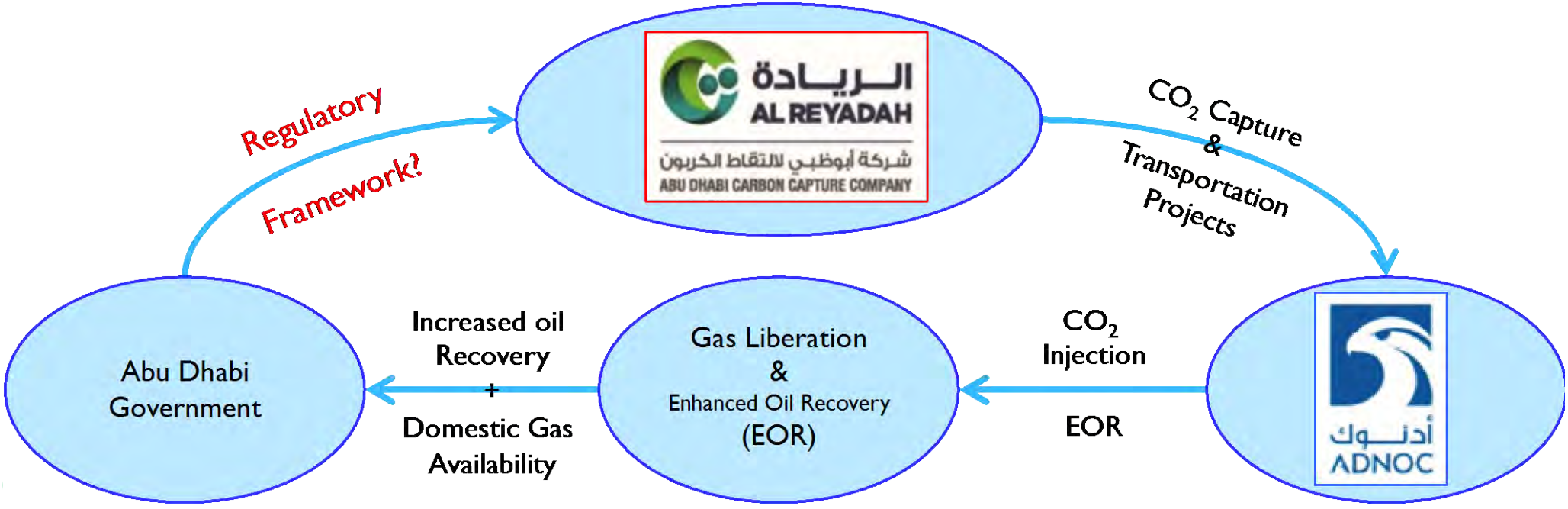
Al Reyadah Combating Global Warming & Abu Dhabi's Sustainability

Environmental

EOR helping Strategic Gas Demand

Commitment to Abu Dhabi 30% Clean Energy

CCS Global & Regional Leadership



Project Objective

1) Reduce Carbon Footprint of Abu Dhabi

2) Enhance Oil Recovery in Subsurface Reservoirs

3) Liberate critically important Natural Gas used in Oil fields for Pressure Maintenance

4) Operate a Commercially Self-Sustaining CCUS Facility which Captures Flue Gas CO_2 from a Steel Plant, processes to the required Specification, Pressurizes and delivers to Oil fields for Injection for CO_2-EOR

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Al Reyadah - Abu Dhabi Carbon Capture Company

Phase-I: Emirates Steel

Al Reyadah: ME's 1st Company mandated to develop Commercial Scale CCUS Projects

***Enhance Oil/Gas Production with CO2-EOR**, while extending Abu Dhabi's Oil Fields Life*

***Liberate Natural Gas** for Power Generation*

*Contribute to **Reducing UAE's Carbon Emissions***

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Al Reyadah Mandate

Al Reyadah is a new ADNOC OPCO specialized in CO2 Supply

Mandate:

- To **manage the CO2 supply to both ADNOC's Onshore & Offshore assets** for CO2-EOR requirements
- **Create a CO2 Network & Hub** in order to achieve flexibility between CO2 Supply and Injection requirements "like GASCO supplying HC Gas"
- Share learning from a pool of strategic technical advisors from an array of various specialists and scientists including; **US DoE, GASCO R&D, ADNOC R&D, Masdar Institute, PI, Khalifa University,** and various other technical institutes, organizations and major Oil/Gas Companies & Service Providers

Vision:

To **maximize profitability by a robust CO2 Master Plan** to ensure ADNOC's OPCOs CO2 EOR Pilots & Development Plans Commitments while contributing Sales Gas to the Government's future energy and reducing Carbon Footprint.

Mission:

Efficiently provide OPCOs the required CO2 volumes in a timely manner and at the right location with **optimized new technologies and CO2 price**

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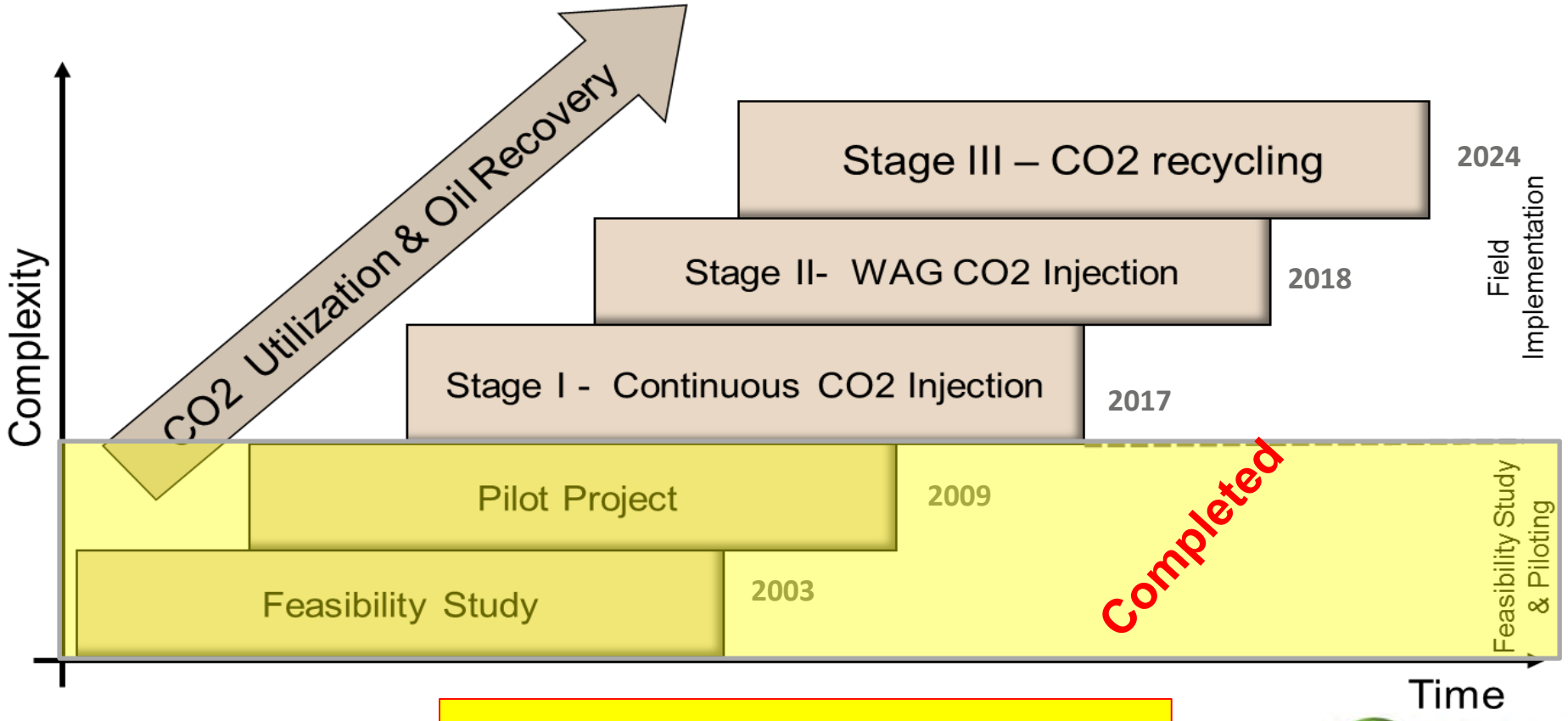
CO2 Phased Development Strategy in Oil Field

The strategy is to breakdown the overall objective into phased developments/projects in order to gain experience in surface and subsurface aspects of CO2 EOR, operations and mitigate risk.



SUBSURFACE - CO2-EOR

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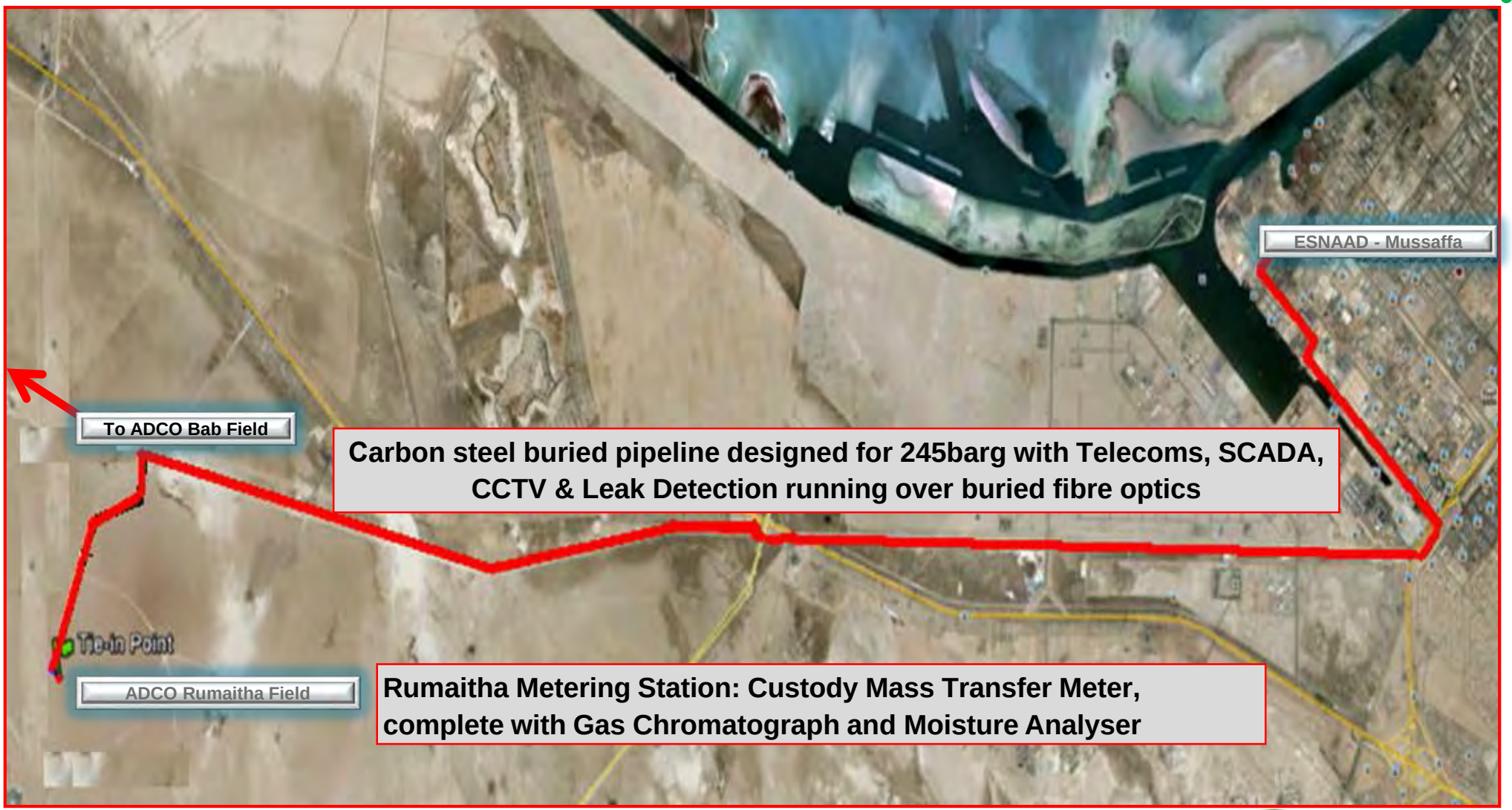
CO2 Dehydration & Compression Facility

CO2 Transmission Pipeline - Location



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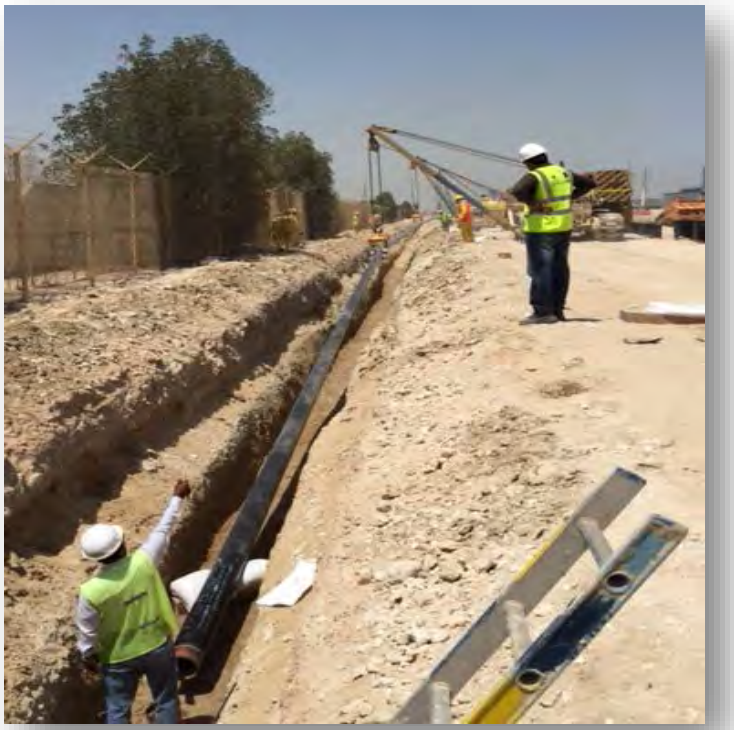
Construction of CO2 Pipeline



CCS Facility
Mussafah Section

- Carbon Steel buried pipeline designed for 245barg
- 2 Block Valve Stations for emergency venting of CO2 in case of pipeline leak
- Remote isolation and maintenance blowdown facilities
- Pipeline Safety: Telecoms, SCADA, CCTV and Leak Detection running over buried fibre optics

Rumaitha Section

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Al Reyadah - Abu Dhabi Carbon Carbon Capture Company

Phase-I: Emirates Steel - Highlights & Summary

- **World's 1st fully Commercial CO2 Capture Project from Steel Industry** (Emirates Steel)
- **Captures 800,000 T of CO2** at Emirate Steel, compresses & dehydrates and **Transports through a 43 km Pipeline** for injection into ADNOC oil wells for CO2-EOR
- Operates **Highest Pressure (240 bar) CO2 Pipeline in the World**
- **Combats Climate Change** by eliminating CO2 equivalent to 170,000 cars' emission
- **Commercially Self-Sustaining** project with **no Governmental Subsidies**
- **Working towards Multiple Industrial scale CCUS Projects & CO2 Pipeline Network/Hub** aimed at reducing the carbon footprint in line with Abu Dhabi vision 2030
- **Driven by the requirement to Capture CO2 from Multiple Industries** & the high potential availability of CO2 storage
- **Current CO2 Supply Potential: 1.6 Bscfd** (ADNOC group & industrial sources in Abu Dhabi which is expected to increase due to the expected increase in sour gas production and the new expected power plants)

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Thank You

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