



Government of the Republic of Trinidad and Tobago

Ministry of Energy and Energy Industries

Head Office: Level 26, Tower C, International Waterfront Center, #1 Wrightson Road, Port of Spain, Trinidad and Tobago
PBX: (868) 225-4EEI (4334) Facsimile (868) 225-5766 Website: www.energy.gov.tt

Update on the Carbon Capture & CO₂ EOR Steering Committee

T&T Energy Conference 2022



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Context to the formation of Carbon Capture & CO2 EOR Steering Committee

1. Petrotrin injects CO2 in onshore fields (1974-2004)
2. Pilot CO2 injection in Barrackpore field by KPA (2010).
3. Carbon Reduction Task Force develops recommendations for CCUS(2010)
4. Ministry of Environment commissions the Feasibility of a CCS Project in T&T study (2013)
5. MEEI participates in CERM (2017)
6. MEEI funds UTT Carbon Management study (2018)
7. Pilot CO2 injection in Trinity Inniss field by Fram/Predator (2020)
- 8. Carbon Capture & CO2 EOR Steering committee setup by Cabinet (2021)**
9. Implementation of tax allowance on profits of 30% of expenditure up to \$500k for CCS & CO2 EOR projects(2021)
10. Carbon Capture & Storage (non EOR) at annual average mitigation potential of 3 Mtpa is included in T&T's TNA for its NDC under the Paris Agreement (2021)
11. MEEI funds joint UWI/UTT National Carbon Storage Atlas (2021)
12. Ministry of Planning & Development commissions Carbon Pricing Study (2021)

Captured Carbon	
Development of downstream industries to make use of captured carbon so that it is feasible for industries to implement carbon capture technologies which would otherwise not be economically feasible.	
Timeframe	5 to 10 years
Required implementation	1. Establish task force to determine feasibility of downstream captured carbon industries and detail plans for industry development. 2. If feasible: RFPs, Tendering and contractor selection 3. Implementation on a phased basis in the long term
Mitigation Potential	Emission reductions are estimated based on carbon capture potential. The reduction of emissions is associated with carbon capture technologies. The study considers that the available potential could reduce emissions generated by the industrial sector by 10% under a trend scenario. Accumulated 44,573,060 tCO ₂ e Annual average: 2,971,537 tCO ₂ e.
Relevant agencies	MEEI, MPaD, Energy Chamber, Industry stakeholders
Barriers	<ul style="list-style-type: none"> - Cost and recovery costs - Lack of financial incentives - Possible long term liability risks - Lack of current regulatory framework for CCS
Advantages/opportunities/Co-benefits	<ul style="list-style-type: none"> - Opportunity for creation of new industries and jobs. - Air quality improvement that implies health benefits and less public health costs.
Synergies and/or trade-off	<ul style="list-style-type: none"> - Opportunity for creation of new industries and jobs



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Carbon Capture & CO2 EOR Steering Committee Composition

- Penelope Bradshaw-Niles, Permanent Secretary (Ag.), MEEI [CHAIR]
- Himalaya Boodoosingh, Snr. Manager HSE, NGC
- Arlene Chow, CEO, Heritage Petroleum Company
- Andrew Jupiter, Coordinator Dept. of Pet. Eng., UWI
- Kishan Kumarsingh, Head Multilateral Environmental Agreements Unit, MoPD

MANDATE

“to manage the implementation of a Large-Scale CO2 EOR Project to increase Trinidad and Tobago’s oil revenue *and to address the reduction of carbon dioxide emissions.*”





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Terms of Reference

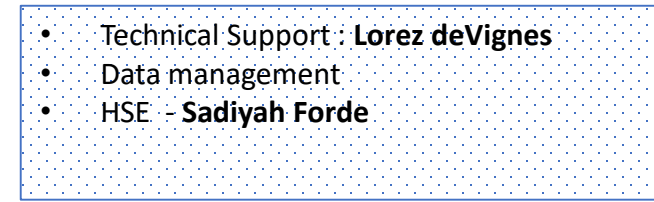
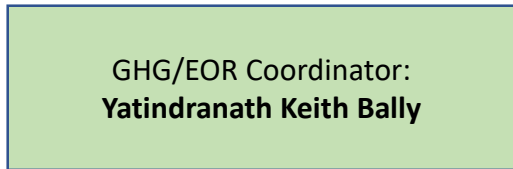
Large Scale CO₂ EOR Project

- “It is envisaged that the project would involve the use of CO₂ from the Atlantic LNG facility for EOR in the oil fields of Heritage in Point Fortin central area”
- “The initial focus of the Committee would be the identification of suitable reservoirs in the Heritage producing areas such as Point Fortin, Guapo, Gran Ravine and Forest Reserve; Heritage would have the lead and be responsible for the implementation of the project”

Research & Technical Studies

- “The technical studies required to advance the work of the Steering Committee be funded by the Ministry of Energy and Energy Industries from the Research and Development Funds contributed under the Production Sharing Contracts”
- “Research and technical studies to be conducted, where available, through UWI, St. Augustine, and/or the UTT”

High Level Organization



Lorna Mohammed- Singh - Heritage

**Prof Raffie Hosein – UWI
Dr. David Alexander - UTT**

Himalaya Boodoosingh - NGC

Christian Welsh - MEEI

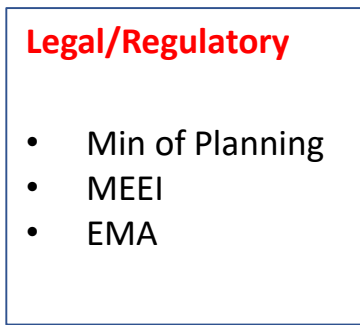
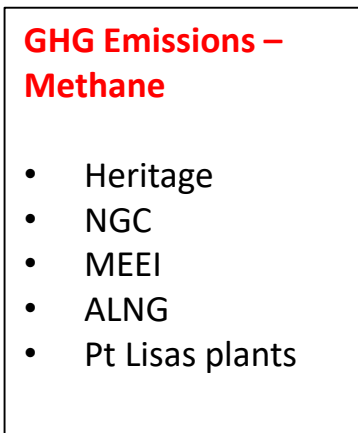
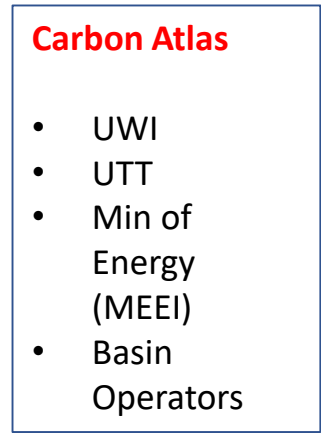
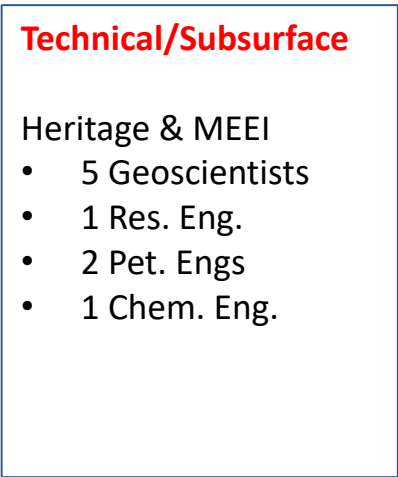
Workgroup 1- SPA*

Workgroup 2 - SPA

Workgroup 3- SPA

Workgroup 4- SPA

Workgroup 5- SPA



* Single Point of Authority



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Carbon Capture & CO2 EOR Steering Committee highlights

2021 Steering Committee highlights

- Feb – Cabinet appoints Committee
- Mar – 1st Committee Meeting
- May – Keith Bally appointed as Coordinator
- June – 1st presentations by non Committee organizations on GHG reduction plans.
- September – launch of MEEI led Legal/Regulatory Workgroup
- Nov – launch of Heritage led Technical Workgroup
- Dec – launch of UWI & UTT Carbon Storage Atlas Project

2022 Steering Committee highlights

- Mar – GHG Emissions: Methane Workgroup leader appointed.
- May – Committee endorsement to the T&T Green Fund of a non profit company's CCUS initiative



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Full listing of organizations consulted on GHG reduction plans

- ✓ CERM (UWI/UTT)
- ✓ ALNG
- ✓ BHP Billiton
- ✓ BPTT
- ✓ DeNovo
- ✓ Energy Chamber Commerce
- ✓ EOG Resources
- ✓ Green Earth Foundation
- ✓ Green Fund
- ✓ Heritage Petroleum Limited
- ✓ Massy Gas Products Trinidad Limited
- ✓ New Horizon Exploration Trinidad & Tobago Ultd.
- ✓ The National Gas Company of Trinidad and Tobago (NGC)
- ✓ Nutrien
- ✓ Oxy Low Carbon Ventures
- ✓ Perenco
- ✓ PLNL
- ✓ Predator Oil & Gas Holdings
- ✓ Proman
- ✓ Shell Trinidad and Tobago Ltd
- ✓ TOSL
- ✓ Wellbore Ltd
- ✓ Yara



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Key Future Milestones

WORKGROUP/STEERING COMMITTEE MILESTONES	2022							
	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
TECHNICAL/SUBSURFACE WORKGROUP								
Evaluation of suitable Forest Reserve reservoirs			X					
Literature Survey			X					
Feasibility Study – Prod Forecast, Economics							X	
CO ₂ Storage economics comparison							X	
Steering Committee Decision on EOR and Storage Value								X
UWI/UTT CARBON STORAGE ATLAS WORKGROUP								
Quantify the storage capacity of the Basins identified						X		
Perform gap analysis to identify training needs to enable CCS in T&T					X			
Review & Finalization of Technical Report							X	
LEGAL/REGULATORY WORKGROUP								
CCS (non EOR) & CO ₂ EOR legislative policy draft for Cabinet initiated	X							
Completion of CCUS legislative policy draft with CCS (non EOR) technical regulations		X						
Recommendations on fiscal/commercial measures to encourage CCS/CO ₂ EOR			X					
Min. of Planning National Carbon Pricing study completed					X			
Final Report Submission					X			
STEERING COMMITTEE								
Interim Progress Report submission to Cabinet		X						