



Making Oil Refineries Carbon Free

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Houston We Have a Problem



Anthropogenic Climate Change is real

Effects on the environment are vast

Temperatures will continue to rise

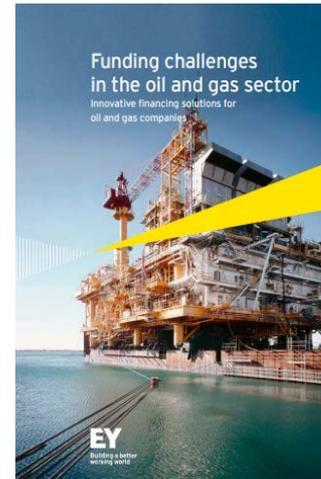
Sea level will rise 1-4 feet by 2100

Our City

25% of nation's jobs related to oil and gas,
16% support jobs for oil and gas.

\$50 billion in petrochemical projects underway,
42% of US base petrochemical manufacturing
capacity.

Paris Climate Agreement,
Climate Mayors, Green Initiatives.





Research Question

How can the implementation of a Pressure Swing Adsorption (PSA), a Carbon Capture System (CCS), in oil refineries located in the Greater Houston Area benefit the key stakeholders?



Technologies Available

Overview

Carbon Capture & Storage

Petra Nova

Pressure Swing Adsorption



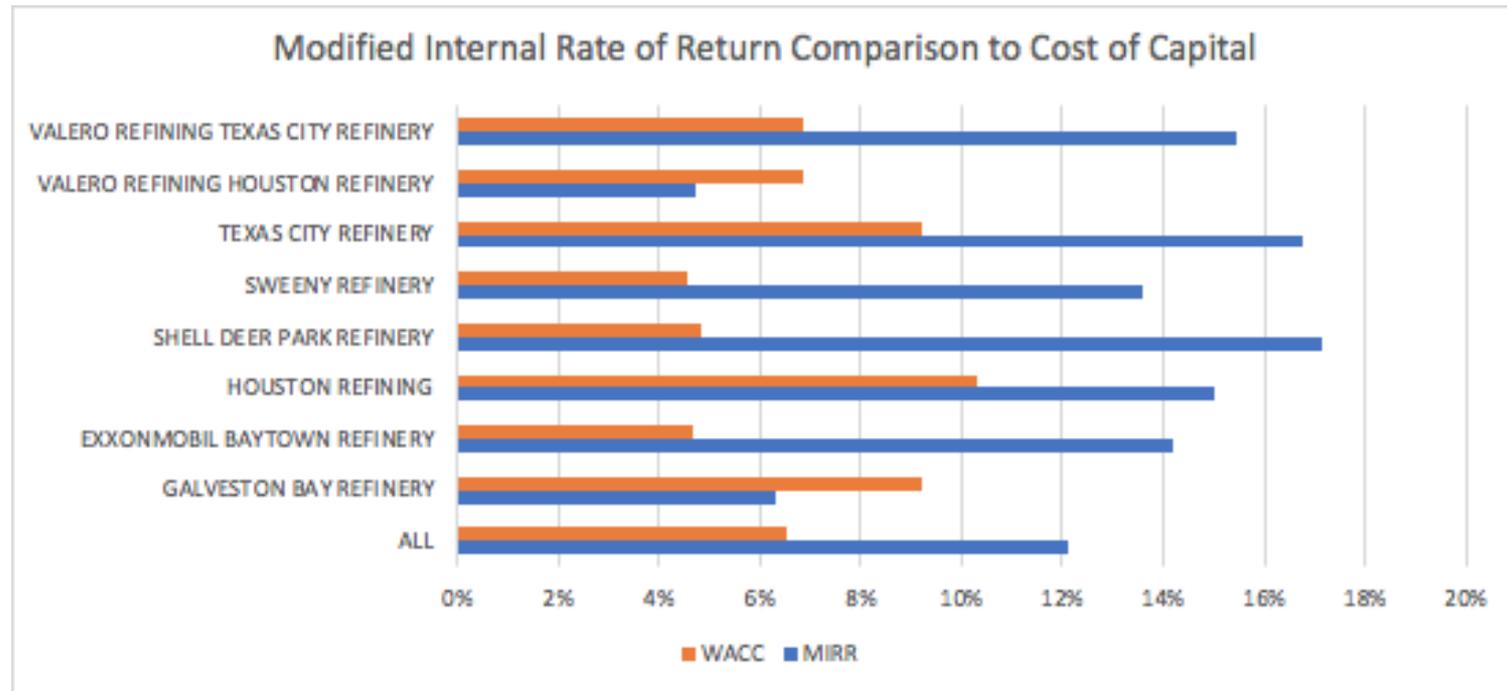


Developing a Model



<https://goo.gl/Ts19H3>

Carbon Capture can be profitable





Impacts



0
1

Industry

Economy &
Environmental Goals



0
3

Environment

Nature & World

313,507,952 Metric Tons of CO2

People

Average of 12% of Annual Texas Health & Social Impact



0
2

2019 - 2033

Houston

Industrial Emissions
Tech Hub &
Environmental Goals



0
4



Future Considerations

01	Financial Model	<ul style="list-style-type: none">• How can we develop a stronger financial model with greater data?
02	Policy Advocacy	<ul style="list-style-type: none">• How can we advocate for policies that favor CCST?
03	Other Green Tech	<ul style="list-style-type: none">• How does CCST compete with renewable energy?



Thank you!