Low Carbon Energy Transition:
New risks and opportunities for downstream refining and petrochemicals sectors

Yulia Dobrolyubova, ERM
Partner, Corporate Sustainability & Climate Change, Southeast Asia

SIEW Energy Webinar,
Wednesday, June 24, 2020
Climate Change: New Challenges for the Industry

Where is the market going and why?
Impacts of Climate Change

Even under the best 1.5-2 °C future climate scenarios, there will be unavoidable climate impacts that present real threat to the oil and gas and downstream industries.

Projected climate impacts by 2100 under 1.5 and 2 °C scenarios

Confidence level for transition: L=Low, M=Medium, H=High and VH=Very High

Projected climate impacts for the oil and gas and downstream industries

- **EXPLORATION**
  - Physical damage from wave height and high winds

- **DEVELOPMENT**
  - Physical damages due to flooding
  - Physical damages due to extreme wind and waves

- **PRODUCTION**
  - Physical damage from wave height and high winds

- **TRANSPORT & PIPELINES**
  - Physical damage from flooding, Storm surges, high winds and wave heights
  - Physical damage on shore pipelines

- **REFINING & PROCESSING**
  - Physical damage from flooding, storm surges and high winds
  - Loss of access to water

Source: IPCC: Special 1.5°C Report, 2018

Climate Change Risks and Opportunities

especially for companies in the Oil & Gas downstream sectors that depend on fossil fuels

**PHYSICAL CLIMATE RISKS**

- Stranded Assets
- Market Disruption
- Litigation Damages

**TRANSITION RISKS AND DRIVERS**

- Policy | Technology | Market
- Legal Liability
- Reputational Issues

**Macroeconomic & Local Policy Impacts**

- Increased Operating Costs
- Capital Upgrade Requirements
- Supply Chain Disruption

- Investment Opportunity
- Customer Demands

- Investor Requirements
Carbon Policy Risks

The growing number of jurisdictions are introducing price on carbon emissions

61

Carbon pricing initiatives (such as carbon taxes or emission trading schemes) are in place globally or scheduled

1600

Companies have announced that they are already using or plan to introduce internal carbon pricing

Source: State and Trends of Carbon Pricing, 2020 (World Bank)
CEOs are squaring up to the challenge
Including making big public commitments

911 companies have committed to set Science-Based Targets (SBTs)

392 companies have already approved SBTs.

911 companies globally are taking science-based climate action in line with the Paris Agreement, of which 392 companies have already approved science-based targets (SBTs) by 2030.

5 MAY 2020
What is Driving the Low Carbon Energy Transition?

Global opinion survey with executives in the Oil & Gas and downstream sectors by ERM and Yale University (2019)
What is driving your low carbon strategy?

- **B2B client pressure**: 75%
- **Protecting business from climate risk**: 73%
- **Doing something good for society**: 73%
- **Regulation and disclosure**: 60%
- **Revenue and growth**: 55%
- **Consumer pressure**: 55%
- **Investor pressure**: 90%

**Legend**:
- Significant
- Somewhat
- Not an influence

[TCFD Logo]
What’s been effective in furthering your low carbon agenda?

- Integrate sustainability into external reporting
- Develop company-wide sustainability plan
- Sustainability integrated into mainstream business planning
- New technology investment to support goals
- Have a CEO statement defining our low carbon ambitions
- Executive committee member accountable for sustainability
- Bought/sold assets in line with our agenda

Options:
- Not effective
- Somewhat
- Very effective
Addressing Low Carbon Transition Risks

What companies can do to address transition risks to low carbon economy?
Oil & gas and downstream companies have various means to reach their zero-carbon targets

- **REDUCE YOUR EMISSIONS**
  - Corporate Policies (ICP, tax, zero waste)
  - Operational Improvements & staff awareness
  - Low-Carbon Technologies (energy efficient equipment, CCUS)

- **ENABLE OTHERS TO REDUCE**
  - Investments in innovative green technologies (e.g. green hydrogen, storage solutions) for wider use
  - Support projects outside supply chain / buy offsets

- **INSETTING**
  - Support project along supply chain (Scope 3 emissions)

- **OFFSETTING**
  - Finance partners’ actions

Source: adopted from Quantis
Oil & Gas and downstream companies have various means to reach their zero-carbon targets

Shell example

Source: Shell.com
Climate Leadership Journey
Illustrative example of key activities

Climate Leadership Journey and Key Activities

Baseline Assessment & Data Management
- Stakeholder expectation analysis
- Assessment of GHG emissions (Scopes 1, 2 and 3)
- Data management systems to track progress
- Peer benchmarking

Climate risks / Opportunity assessment
- Selection of scenarios for the analysis
- Physical & transition risks analysis
- Financial impact assessment

Strategic Response
- Reduce emissions: marginal abatement cost curves (MACC)
- Carbon offsetting and insetting, Renewable Energy Certificates
- Overall vision, targets (e.g. SBT) and metrics
- Climate strategy and action plan, including climate risks

Capacity and Governance
- Training / capacity building programs
- Governance system and cross-functional collaboration
- Stakeholder engagement

Stakeholder engagement and disclosure
- Disclosure (e.g. TCFD, CDP)

ERM’s support along your project lifecycle

www.erm.com
Use of MAC Curve and internal cost of carbon to understand GHG mitigation options

MAC Curve example for a refinery project
5 things that winners will be doing

- **Get real – and transparent** – with investors

- Make **profound changes in business models**, portfolios and practices to address the deep structural transformation

- **Equip executives and operational managers** to lead through the transition – work ever harder to attract the young generation

- Understand what **carbon data** are really saying about the state of the business – and upgrade systems and processes

- Do whatever it takes to **eliminate GHG emissions** from ongoing operations – dare to imagine carbon as the only license to operate that really matters

*Choose to harness new corporate leadership, social will and financial drivers to lead the low carbon energy transition*
Thank You

Yulia Dobrolyubova
Partner, Sustainability & Climate Change, South East Asia
yulia.dobrolyubova@erm.com
+66 8 9693 9568

Deepak Wadhwa
Partner, Oil & Gas, Asia Pacific
deepak.wadhwa@erm.com
+65 938 24271
ERM is a leading global provider of environmental, health, safety, risk, social consulting and sustainability related services. For nearly 50 years we have been working with the world's leading organizations, including in the Oil & Gas, Power and Downstream Sectors, delivering innovative solutions and helping them to understand and manage their sustainability challenges.