



Key recommendations Emerged from the Expert Workshop on 'Carbon Emission Management: Upstream & Downstream Best Practices and Opportunities' held on October 29-30, 2015 at New Delhi

A 1½ day international conference on 'Carbon Emission Management' was organized by the Petroleum Federation of India in association with World Petroleum Council on October 29-30, 2015 in New Delhi. The conference witnessed gracious presence of Hon'ble Union Minister of State for Petroleum & Natural Gas (MoP&NG), Government of India, Shri Dharmendra Pradhan, Experts from World Bank and International organisations, senior officials of MoP&NG and CEOs and Directors of Oil & Gas majors as well as service companies in India. The conference covered the Upstream & Downstream Best Practices and Opportunities towards carbon emissions management.

The industry emphasised on commitment towards carbon emission management to encompass entire value chain considering India's energy demand outlook. It was felt that National and Global agenda for Carbon emission management should be aligned through proactive stakeholder dialogue to understand the challenges and opportunities for supporting the goals. The key recommendations emerged from the conference are;

- 1. Need for adopting Standard GHG Reporting:** As a vital first step in the direction of carbon emission management, industry identified the need to adopt uniform standards by Corporates/ Businesses and articulating impact of carbon price on the sector. The GHG accounting practices and standards will allow companies to access, evaluate and strategies for carbon emission management. *To achieve this, the need for capacity building was identified, where active stakeholder's engagement will help identifying the desired skills.*

2. **Emissions Inventory Development:** It was suggested to adopt efficient methodologies to curb methane emissions from processes of Oil & Gas value-chain and possibly as a first step. Oil and gas production/ processing one of high energy intensive process requiring complex operational condition holds significant opportunity for carbon emission management through efficient operations and enhanced efficiency. It was felt that methane emission management across value chain and through gas flaring reduction should also be looked as low hanging fruits. *The need for developing an emission inventory for Oil & Gas Sector spread across upstream extraction, refining & processing, transportation, gas flaring etc. was deliberated which can be used for suggesting suitable mitigation measures.*

3. **Increasing Pipeline's Modal Share:** The industry echoed their views on the need for enhancing share of pipelines network for crude oil and refined product transportation being the best mode of transportation to reduce carbon footprint. *It was emphasized by stakeholders that for expanding capital intensive pipelines projects Government should consider providing supportive regulatory and fiscal incentives to attract investment and fast track implementation of projects.*

4. **Carbon Management in Transport:** A significant share of GHGs is contributed from transport sector, thus switch to gas based economy will provide a boost to carbon management efforts. Increasing the usage of natural gas through smart cities and green corridors will ultimately leading to a gas based economy combating climate issues and help displacing LPG which can be used much better elsewhere. It was felt that with limited domestic gas resources, the expanding gas demand will be complemented with LNG



imports by setting up LNG import terminals, floating storage and re-gasification facilities etc.

In this transition to natural gas, it will be imperative that carbon management practice encompass complete gas value chain including terminal and operations, in view of global warming potential of methane (major constituent of natural gas). *The industry identified need to continue efforts for control carbon emissions from LNG operations and adopt efficient best practices.*

5. Refining Sector Opportunities: India has experienced an increase in crude oil refining capacity from 62 MMTPA (1998) to over 230 MMTPA from 23 refineries presently and owns the second largest refining capacity in Asia. Though country's private refiners have one of most efficient and state of art refineries in the world, yet there is a room for improvement in terms of operational excellence. It is reported that fuel combustion one of the largest source of emissions in a refinery (where 98-99% are CO₂ emissions) has immense potential to contribute. Thus, achieving Operational excellence for Indian refineries in terms of technology, efficient processes and equipment, use of gas instead of heavy fuel oil for internal use emerged as one of key strategies to mitigate carbon emissions. Improving refinery energy efficiency and Benchmarking is the way to move ahead.

As a step in this direction, it was suggested to conduct comprehensive and systematic energy performance optimization & opportunity assessment studies for new/ operating plants to help in emission management efforts.

6. The stakeholders deliberated on initiatives for carbon emission management in Industrial and motive power segment using chemical and biological routes. While industrial segment is looking for CO₂ capture from flue gases and then to value added product, in the



motive power segment sustained fuel efficiency should continue being critical for indirect control of CO₂ emissions allowing.

In addition to above, industry sought the need for clear, coherent, supportive policy framework and integrated approach towards carbon emission management.
