

# ASIA CLEAN ENERGY FORUM 2019

PARTNERING FOR IMPACT

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## Deep Dive Workshop

### Asia Wakes Up to CCUS



Department for  
Business, Energy  
& Industrial Strategy

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#### Background

The Asian Development Bank (ADB) has been promoting Carbon Capture, Utilisation and Storage (CCUS) in Asia since 2009. It has worked with its developing member countries (DMCs) to identify new opportunities in CCUS, prepare regulatory frameworks and grow a research network to create opportunities for low carbon development through CCUS implementation.

There has been renewed interest in CCUS due to international commitments to reduce greenhouse gas (GHG) emissions and technical developments lowering the cost of capture and bringing in new ways of utilizing CO<sub>2</sub>. As part of its ongoing efforts to encourage knowledge exchange on CCUS amongst its DMCs, as well as other countries of the world, ADB is planning CCUS-focused events in Manila on 20–21 June 2019. This workshop will be part of Asia Clean Energy Forum 2019 which will have other events involving CCS. These events will deliberate on issues of CCUS development in Asia and will serve as a bridge with the important stakeholders across the world.

Past CCUS workshops have seen participation from the Government of UK, US DOE, Global CCS Institute–Australia, International CCS Institute–Canada, International Energy Agency (IEA) GHG, IEA and other international stakeholders.

## Agenda

7.30 a.m. – 8.00 a.m.	<b>Registration</b>
<b>Session 1</b>	
8.00 a.m.– 8.10 a.m.	<b>Welcome speech</b>
8.10 a.m.– 8.40 a.m.	<b>Keynote speech 1</b> An overview of CCUS across the world, importance of CCUS in climate talks, immediate opportunities, and long-term infrastructural need of CCUS. To be delivered by IEA (tentative).
8.40 a.m.– 9.10 a.m.	<b>Keynote speech 2</b> Speech on emerging CCUS technologies and advances (like secondary CO <sub>2</sub> cycle)—their net power, advantages over conventional technologies, impact on climate change, cost benefit analysis and need to move ahead.
9.10 a.m.– 9.40 a.m.	<b>Keynote speech 3</b> Speech on hydrogen as an emerging technology, with focus on the hydrogen plan of Japan and Australia, and answers questions such as "how hydrogen economics is better with CCUS compared to other sources like water splitting," "how it fits in to current network of natural gas pipelines," and "how it helps in transformation of the energy infrastructure." UK's experience may be added too.
9.40 a.m.– 10.30 a.m.	<b>Roundtable</b> Comparative discussion on EOR projects of Indonesia, India and PRC <i>(15 minutes of presentation from each country)</i>
10.30 a.m.– 11.00 a.m.	<b>Tea Break</b>
11.00 a.m.– 12.00 p.m.	<b>Mineralization of CO<sub>2</sub></b> Discussion on relevance of mineralization, economics of mineralization, comparison with conventional cement manufacturing in terms of GHG emissions, lifecycle analysis, current deployment and future opportunities in Asia.  (Perhaps two discussions of 10 to 15 minutes from Carbon Cure Limited Canada / Pan United, Singapore, Solidia, and Academic or conventional company)
12.00 p.m.– 12.30 p.m.	<b>Open Forum</b>
12.30 p.m.– 1.30 p.m.	<b>Lunch</b>
<b>Session 2</b>	
1.30 p.m.– 3.00 p.m.	<b>Areas of cooperation in methanol / ethanol production from CO<sub>2</sub></b> (PRC, India, Lenzatech )
3.00 p.m.– 3.30 p.m.	<b>Financing and implementation of leapfrogging ideas</b> (OGCI, ADB, Japan, USA, Australia, Malaysia, India, PRC, Gates Foundation)
3.30 p.m.– 4.00 p.m.	<b>Tea break</b>
3.30 p.m.– 4.30 p.m.	<b>Financing and implementation of leapfrogging ideas</b> (OGCI, ADB, Japan, US, Australia, Malaysia, India, PRC, Gates Foundation) (10 minutes each for OGCI, US and Gates foundation and a discussion to follow)
4.30 p.m.– 5.00 p.m.	<b>Conclusion</b>

**Note:**

*While, the above has covered major areas of importance for CCUS, the following are important topics which need to be mentioned and perhaps can replace one of the topics above or can be introduced as one session or speech in the main forum:*

- 1. CCS readiness—its technicalities and financing. (This is an area of importance and perhaps should be part of the main conference topic).*
- 2. Shaad Power Project Planning. (This is also an important topic and may be presented in the main forum).*
- 3. Cost reduction. (This can be part of the main forum and an overview may be given on the efforts across the world that will give confidence to the main streaming of CCS).*
- 4. Oxyfuel combustion*
- 5. Steel, cement and other process industries innovation (such as LanzaTech's innovation). (It is worth exploring CO<sub>2</sub> to ethanol from the perspective of the process industries. Perhaps, the right audience is not there. But they can be part of the methanol discussions).*
- 6. Common CO<sub>2</sub> infrastructure. (This can be included in the discussions on CCS readiness).*