



ISO TC 265 – ‘Carbon Dioxide Capture, Transportation and Geological Storage’

Tim Dixon
IEA GHG R&D Programme
NAESB
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IEA Greenhouse Gas R&D Programme (IEAGHG)



- A collaborative international research programme founded in 1991
- Aim: To provide information on the role that technology can play in reducing greenhouse gas emissions from use of fossil fuels.
- Focus is on Carbon Dioxide Capture and Storage (CCS)
- Producing information that is:
 - ✓ Objective, trustworthy, independent
 - ✓ Policy relevant but NOT policy prescriptive
 - ✓ Reviewed by external Expert Reviewers

IEAGHG



- Flagship activities:
- **Technical Studies** >320 reports published on all aspects of CCS
- **International Research Networks**
 - Risk Assessment/Management
 - Monitoring
 - Modelling
 - Environmental Research
 - Social Research
 - Oxy-combustion
 - Solid Looping
- **GHGT conferences** –
 - GHGT-13, Lausanne, Switzerland, 13-18 Nov 2016
 - GHGT-14, Melbourne, Australia, 22-26 Oct 2018
- **PCCC conferences** – PCCC4, Sep 2017, Birmingham, Alabama

IEAGHG



Other activities include:

- International CCS Summer Schools: 550 alumni, 50 countries
- 2017 – July, International CCS Knowledge Centre, Regina, Canada;
- 2018 – June, Trondheim, SINTEF
- call for student applications deadline 23 Feb 2017

- Peer reviews, eg US DOE, US EPA; CO2CRC
- Active in international regulatory developments – UNFCCC, London Convention, ISO TC265
- Collaborations with IEA, CSLF, CCSA, EU ZEP, UT and others





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Update on ISO TC 265 – ‘Carbon Dioxide Capture, Transportation and Geological Storage’

- Note there is now a considerable body of work and documents, so the following provides updates where information has been readily available to IEAGHG, it does not necessarily represent a complete update on all work.
- New information on slides is in **bold**

ISO TC 265 - CCS



- Proposed by Canada. Technical Committee TC265 was approved by ISO members in 2011. Canadian Chair, Canada and China Secretariat. **18** participating countries, **10** observer countries, 7 Liaison orgs.
- IEAGHG involved as Liaison Organisation
- Objective: to prepare standards for the design, construction, operation, environmental planning and management, risk management, quantification, monitoring and verification, and related activities in CO₂ capture, transportation, and geological storage.
- Excluded: ocean storage of CO₂ by direct injection; mineral carbonation storage; industrial uses of CO₂ not related to CCS; and legal liability and permitting.
- NWIP = New Work Item Proposal; TR = Technical Report; WD = working draft; CD = final draft to committee TC265; DIS = Draft International Standard; IS = International Standard; Mirror Committee = a national committee for inputting to TC265



ISO Standards Development Process

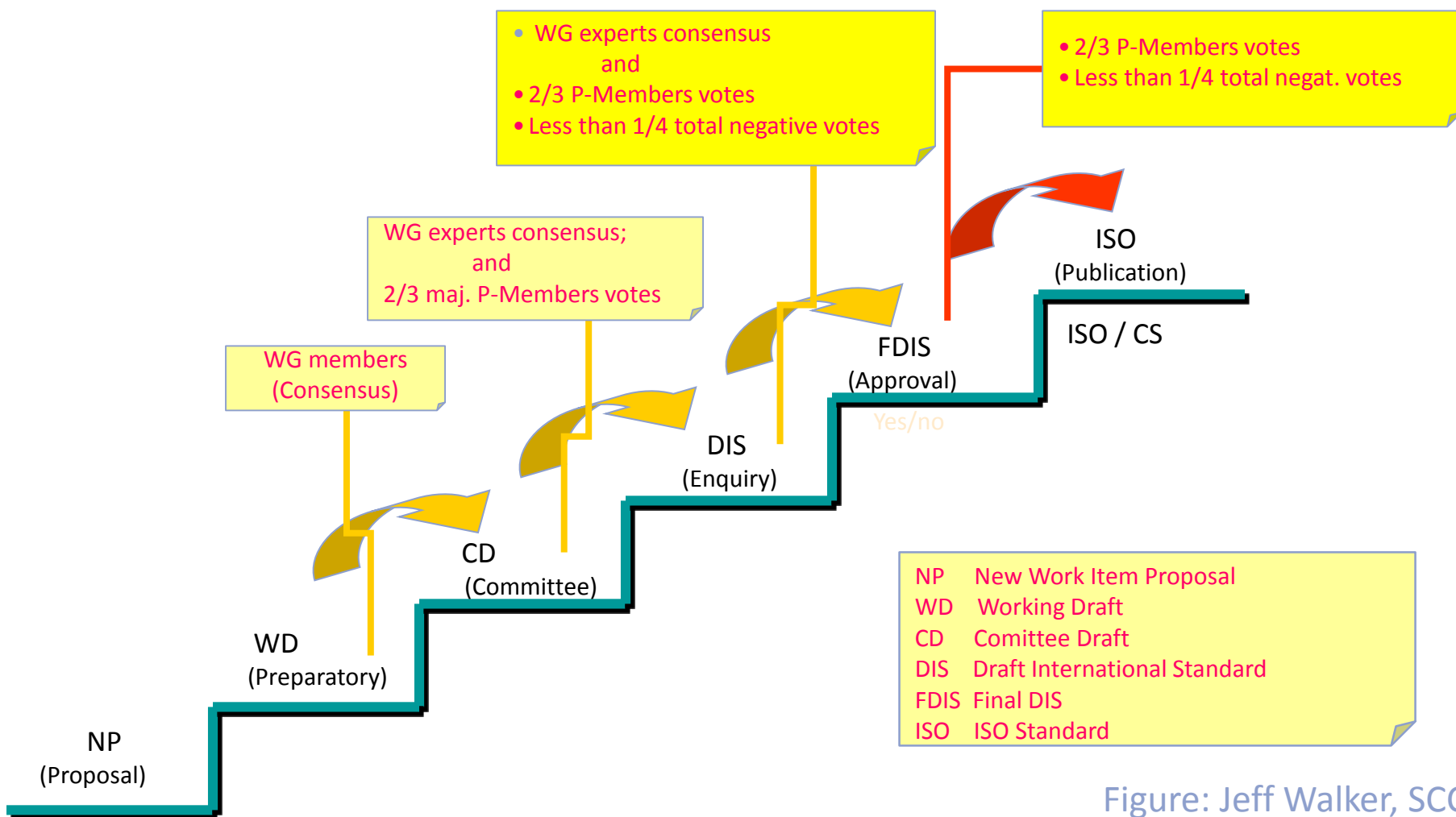


Figure: Jeff Walker, SCC

TC265 Working Groups



- WG 1 Capture – Japan
 - WG 2 Transport – Germany
 - WG 3 Storage - Canada and Japan
 - WG 4 Quantification and Verification – China and France
 - WG 5 Cross-cutting issues – France and China
 - WG 6 CO₂-EOR – USA and Norway
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- IEAGHG participates in TC265 plenary, WG 3 Storage, WG 1 Capture, WG 4 Q&V, WG 5 Cross-cutting

ISO TC 265 Update



WG 1 Capture

- The Technical Report ISO DTR 27912 is a review of all capture technologies and applications and was published.
- A standard for “Performance Evaluation Methods for Post-Combustion Capture”. ISO 27919-1 (ie part 1).
- **A DIS was approved in September 2017 with some comments**
- **Topic of part 2 will be “Evaluation procedure to assure and maintain stable performance of post combustion CO2 capture plant integrated with a power plant”. NWIP voted and approved. ISO 27919-2**
- **Preliminary NWIP for TR on Capture from Cement Plant (Norway)**
- **Discussion of whether to work on Capture/CCS Readiness**

ISO TC 265 Update



WG 2 Transport

- The International Standard (DIS) ISO 27913 “Carbon dioxide capture, transportation and geological storage -- Pipeline transportation Systems” has been approved with comments and will be published.
- The WG decided not to progress onto other transport means and will go dormant.
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WG 3 Storage

- **The FDIS 27914 was approved in September 2017 with comments. Publish soon?**
- **Discussion of potential new work items at 10th TC265. eg turn annexes into TRs?**

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WG 4 Quantification and Verification

- Objective : GHG emissions performance of whole CCS chain
- Working on a Technical Report first, ISO TR 27915. This DTR was approved for publishing.
- A new proposal to develop an International Standard for Quantification and Verification was approved by voting November 2016. ISO 27920.
- **Work underway**

ISO TC 265 Update



WG 5 Cross Cutting Issues

- Develop IS for Terminology “CCS Vocabulary” – France lead. ISO 19251.
- A CD of ISO 27917 “Carbon dioxide capture, transportation and geological storage — Vocabulary — Cross-cutting terms” **was out for voting as a FDIS on 7 September 2017 with a deadline of 2 November 2017.**
- Technical Report on Life Cycle Risk Management of Integrated CCS Projects, led by China. **Underway.**
- New Work Item Proposal for TR on CO₂ Stream Composition. **Approved with comments. Meeting in September 2017 Paris. DTR21921**

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WG6 on Storage using CO2 EOR

- Working towards a draft International Standard. A CD of ISO 27916 got insufficient positive votes (less than 2/3) to proceed to DIS stage so it was turned down and sent back to the WG6 for revision.
- Improved version sent for voting on 8 Feb 2017 deadline 7 April. **Approved, with comments. Will move to DIS. Work underway. Time extension given**

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9th TC265

- Awareness Ad Hoc Group, led by USA, to track use and other related developments
- **Other GHG Ad Hoc Group, led by WG4 convenors, to consider others GHGs in addition to CO₂. Relate to ISO 14064 (GHG reporting)**
- **New CO₂ Utilization Ad Hoc group led by China, to track technology**

ISO TC 265 Update



Outputs:

published Standards on:

- Pipelines transport (ISO 27913:2016);
- Geological storage (ISO 27914:2017);
- Vocabulary (ISO 27917:2017)
- (4 more under development)

published TR reports on:

- Capture systems (ISO 27912:2016);
- Quantification and verification (ISO 27915:2016)
- (2 more under development)

Future ISO TC 265 meetings



TC265 Plenary meetings:

- **10th TC265 - 13-17 Nov 2017, Sydney, Australia**
- **11th TC265 – 1-6 July 2018, Paris, France**
- Public information on the work is available at http://www.iso.org/iso/iso_technical_committee?commid=648607
- [US 'mirror' group lead steven.carpenter@uwyo.edu](mailto:steven.carpenter@uwyo.edu)



Thank you

Any Questions?