IMO Correspondence Group for alternative fuels

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Content

- Background IGF-Code
- DNVGL Rules
- International Maritime Organisation
- Correspondence Group IGF-Code
- Summary

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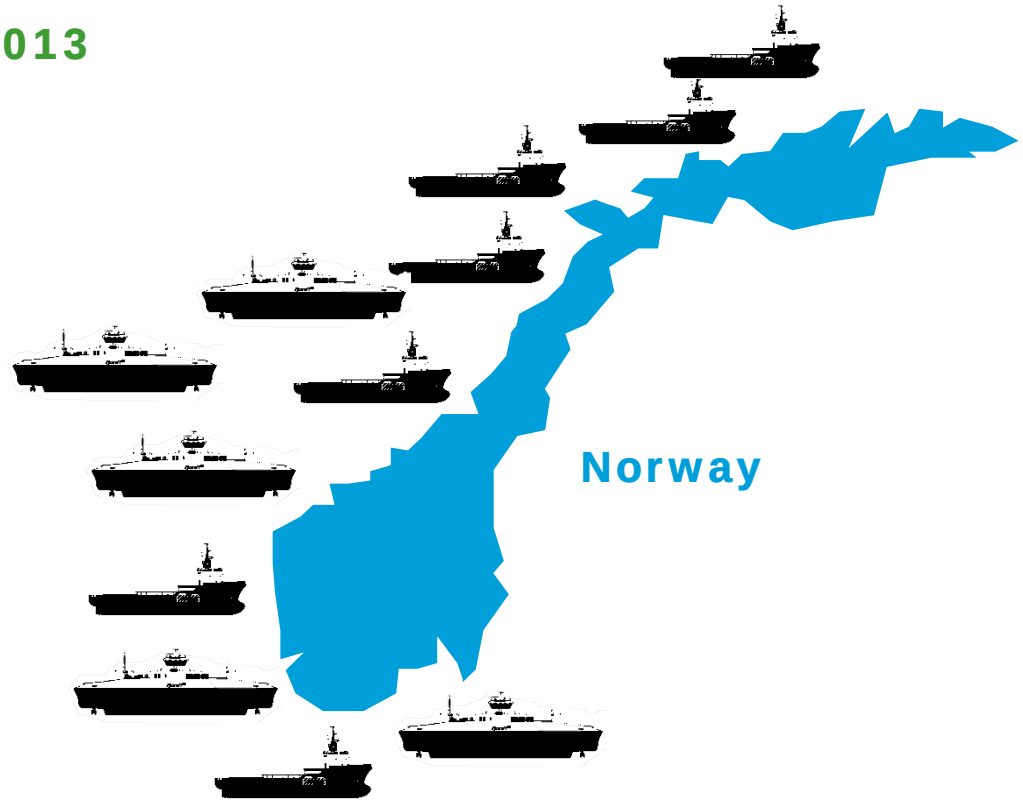
The development trend is moving from LOCAL …

2000 – 2013



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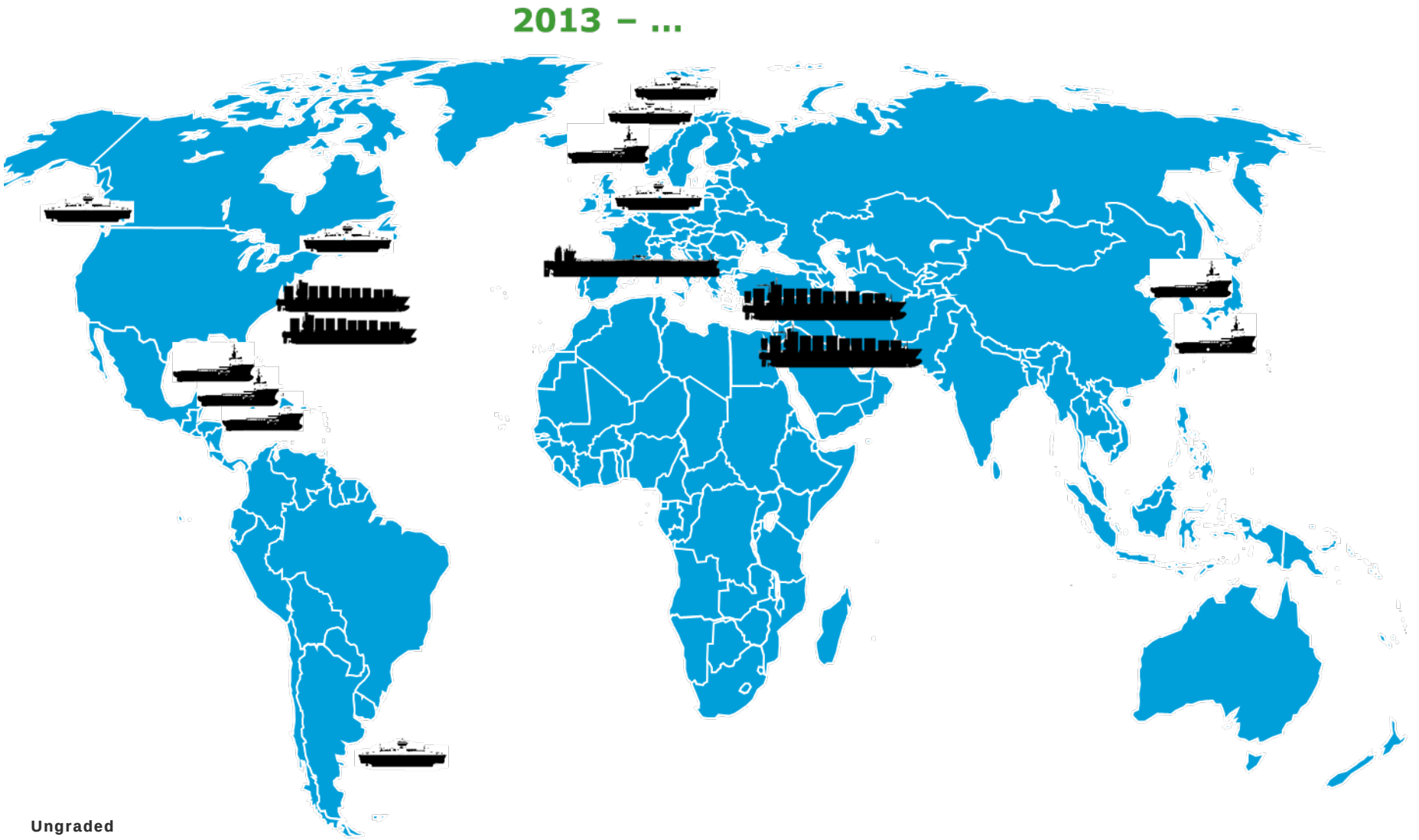
… to GLOBAL …



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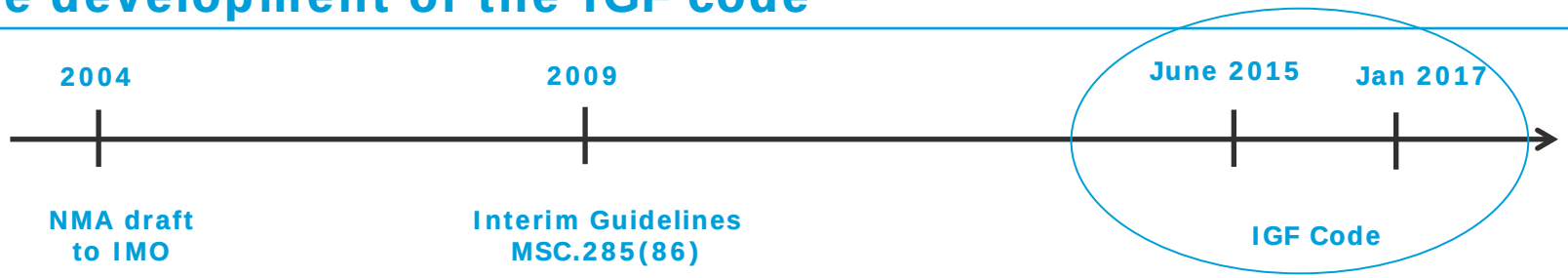
The development of the IGF code



- The IGF Code was adopted by IMO in June 2015 (MSC95) and will enter into force 1 January 2017
- Mandatory for all gas and other low flashpoint fuel ships
- Detail requirements for natural gas
- Other low flashpoint fuels allowed, approval based on alternative design approach
  - More detailed provisions for methyl/ethyl alcohol fuels and fuel cells is under development in IMO correspondence groups now

Note! Some flags already require compliance

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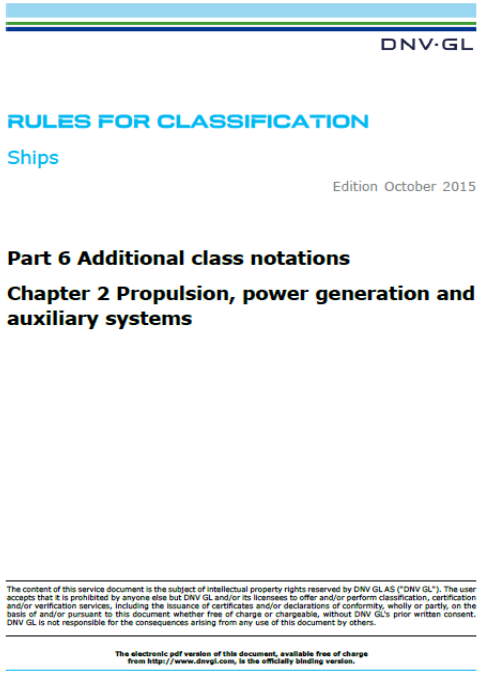
New DNV GL Rules for GAS FUELLED SHIP INSTALLATIONS

Pt.6 Ch.2 Sec.5 GAS FUELLED SHIP INSTALLATIONS – GAS FUELLED

- Class Notation **Gas fuelled**
- Published October 2015 and enter into force January 2016
- The new DNVGL Rules for Gas fuelled ship installations are **covering** the requirements in **the IGF Code**.



DNV·GL

RULES FOR CLASSIFICATION

Ships

Edition October 2015

Part 6 Additional class notations

Chapter 2 Propulsion, power generation and auxiliary systems

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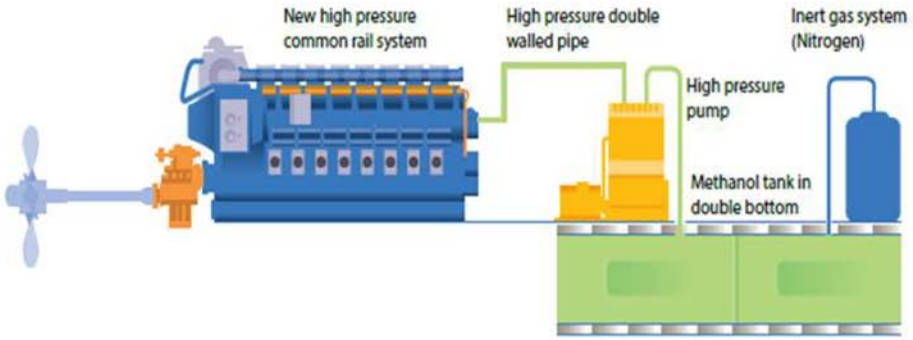
Pt.6 Ch.2 Sec.5 Gas fuelled ship installations - Gas fuelled

1 General requirements
2 Materials
3 Ship arrangement
4 Fuel containment systems
5 Piping systems
6 Ventilation systems
7 Fire safety
8 Electrical systems
9 Control, monitoring and safety systems
10 Gas turbines and boilers
11 Manufacture, workmanship and testing

Stena Germanica



Source Stena Line

- Stena Germanica conversion of the main propulsion machinery, 4 x Wärtsilä 8ZAL40S Totally 24.000 kW at Remontowa shipyard, Gdansk, March 2015

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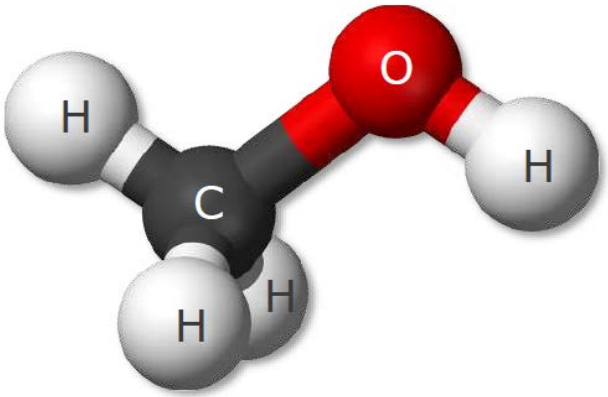
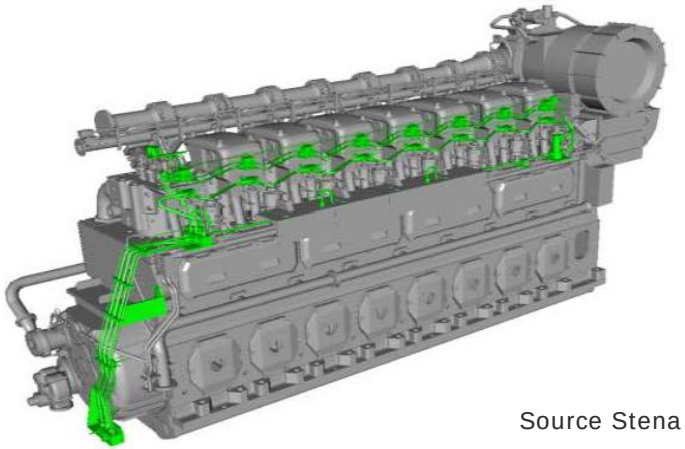
Challenges Methanol

Challenges

- Low flashpoint
- Toxic
- Low viscosity
- Corrosive
- Low energy content (half compared with oil)
- Attractive business case





Source Stena Line

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IMO

- **Member States**
  - IMO currently has 171 Member States and three Associate Members.
- **Non-Governmental Organizations (NGOs)**
- **Intergovernmental organizations (IGOs)**

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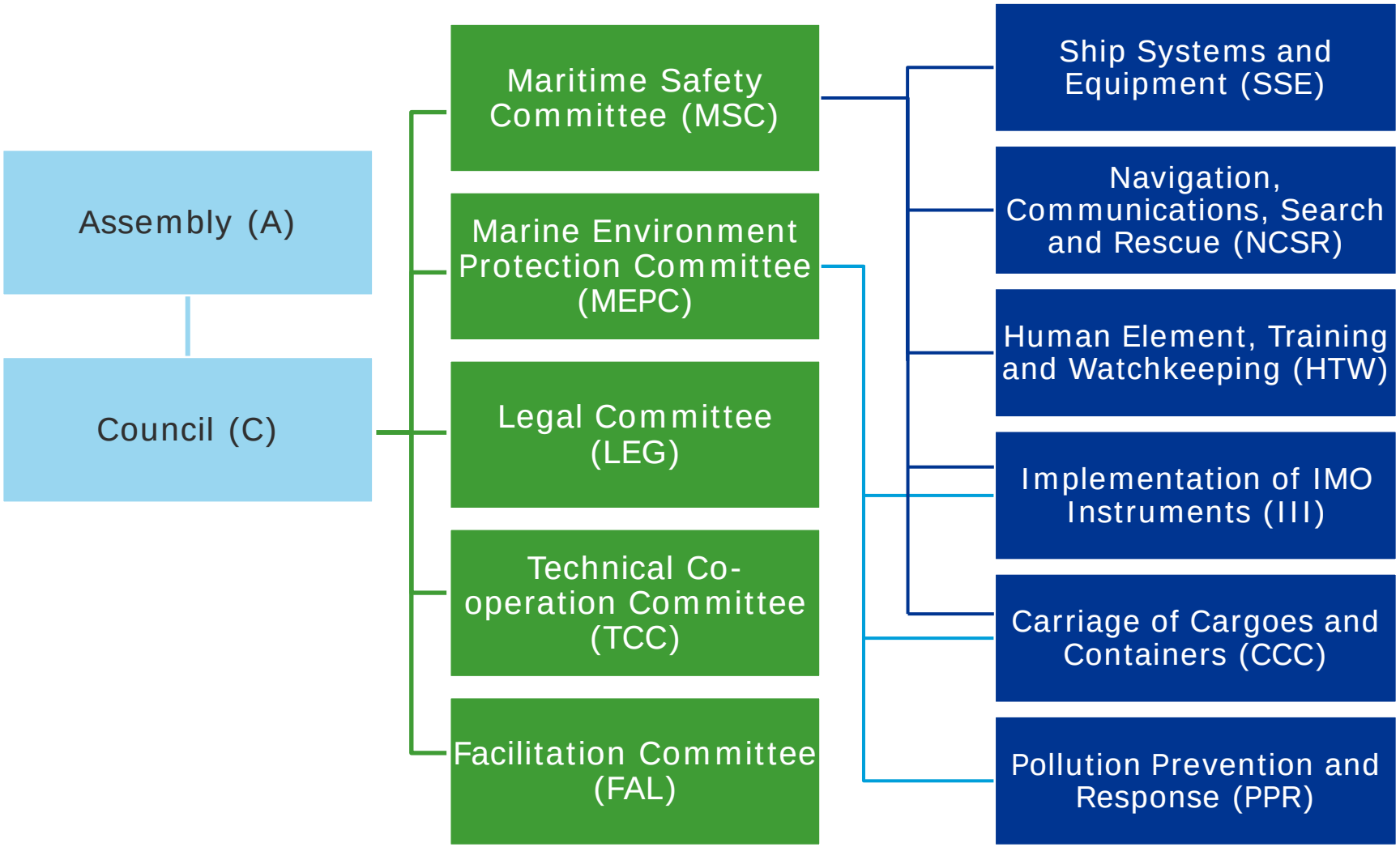
Committees and Sub-committees of IMO



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Sub-Committee on Carriage of Cargoes and Containers

- CCC 2: 14. -18. September 2015
  - Working group for development of technical provisions for the safety of ships using methyl/ethyl alcohol as fuel
  - Terms of reference for the established Correspondence Group on Development of Technical Provisions for the Safety of Ships using Low-flashpoint Fuels

- Between the meetings technical discussion regarding the technical provisions only within the correspondence group in writing
  - CG is coordinated by Sweden
    - Chapters with technical provisions have been submitted by Sweden
    - Results will be summarized by Sweden

- CCC 3: 5. - 9. September 2016
  - Discussion of the Correspondence Group results in WG (report)

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Terms of reference for the Correspondence Group on Development of Technical Provisions for the Safety of Ships using Low-flashpoint Fuels

As instructed by the Sub-Committee, the group prepared draft terms of reference for the established Correspondence Group on Development of Technical Provisions for the Safety of Ships using Low-flashpoint Fuels, under the coordination of Sweden, as follows:

1. further develop technical provisions for the safety of ships using methyl/ethyl alcohol as fuel, taking into account paragraphs 4 to 10 of document CCC 2/WP.3 and based on annex 1 to document CCC 2/WP.3
2. consider the need of forwarding any of the safety provisions for ships using methyl/ethyl alcohol as fuel to other sub-committees for review and advise CCC 3 accordingly;
3. finalize the draft amendments to the IGF Code regarding fuels cells, taking into account paragraphs 16 and 17 of document CCC 2/WP.3 and based on annex 2 to document CCC 2/WP.3; and
4. submit a report to CCC 3.

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Terms of Reference – CG IGF-Code

Action	Date	Comments
CG members to receive chapter 6-7 for commenting + square brackets in ch.2-5 (annex 1 to CCC 2/WP.3)	2015-10-15	ToR .1-2 Circulation 1
CG members to submit comments on chapter 6-7 + square brackets in ch.2-5	2015-11-20	ToR .1-2
CG members to receive chapter 8 –11 for commenting	2015-11-20	ToR .1-2 Circulation 2
CG members to submit comments on chapter 8-11	2015-12-21	ToR .1-2
CG members to receive chapter 12 – 15 for commenting	2015-12-21	ToR .1-2 Circulation 3
CG members to submit comments on chapter 12-15	2016-01-29	ToR .1-2
CG members to receive annex 2 to document CCC 2/WP.3 related to fuel cells for commenting	2016-01-29	ToR. 3 Circulation 4
CG members to submit comments on annex 2 to document CCC 2/WP.3 related to fuel cells	2016-03-04	ToR. 3
CG members to receive a summary of chapter 1 – 15 of methyl/ethyl alcohol and fuel cells	2016-04-01	
CG members to receive the report and annex(s) for final comments	2016-05-02	
Final comments on the CG report	2016-05-09	3 weeks before deadline to CCC 3.
Submit report to CCC 3	2016-05-27	Deadline for submission, 13+1 weeks (51-70 pages) before CCC 3.

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Principles applied for Methanol / Ethanol:

- Segregation principle - to protect the gas fuel installation from external events
  - Fire, collision, grounding, mechanical damages

- Double barrier principle - to protect the vessel against leakages
  - Piping, Gas piping, Fuel preparation room

- Leakage detection principle - to give warning and enable automatic safety actions.
  - Leakages anywhere in the fuel system shall be detectable

- Emergency shut-down principle – to reduce consequences of a leakage
  - Leakages anywhere in the fuel system shall be automatically isolated

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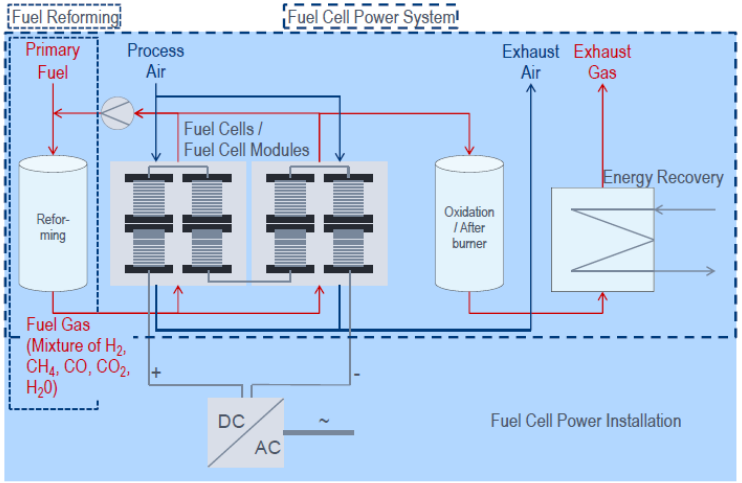
Summary

- IGF-Code adopted and will come into force 1. of January
- Other low flashpoint fuels allowed, approval currently based on alternative design approach
- Fuel cells (chapter 10.6) will probably adopted at CCC 3
- More detailed provisions for methyl/ethyl alcohol fuels and fuel cells is under development in IMO



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Thank you for your kind attention!

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