Maritime Just Transition TASK FORCE

# Seafarers' competencies for alternative fuels

## Outcome of industry consultations by the Maritime Just Transition Task Force

Alishba Zaman
UN Global Compact

United Nations Global Compact

International Chamber of Shipping
Shaping the Future of Shipping

INTERNATIONAL TRANSPORT WORKERS' FEDERATION

IMO

International Labour Organization

# The Maritime Just Transition Task Force was formed at COP26 in 2021 by ICS, ITF, IMO, ILO, and UNGC

The purpose of the task force is to ensure that shipping's response to the climate emergency puts seafarers at the heart of the solution, supported by globally established Just Transition principles.


**Founding funders:**

Foundation

SMF Singapore Maritime Foundation

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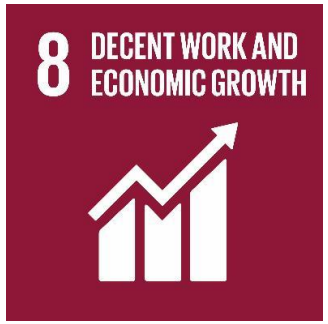
# A Just Transition is a people-centered response to addressing the climate emergency

**ILO's Definition:**

"A Just Transition means greening the economy in a way that is as fair and inclusive as possible to everyone concerned, creating decent work opportunities and leaving no one behind."

**A just transition is mentioned in IMO's 2023 revised GHG strategy:**

**"**IMO remains committed to reducing GHG emissions from international shipping and, as a matter of urgency, aims to phase them out as soon as possible, while promoting, in the context of this Strategy, **a just and equitable transition."**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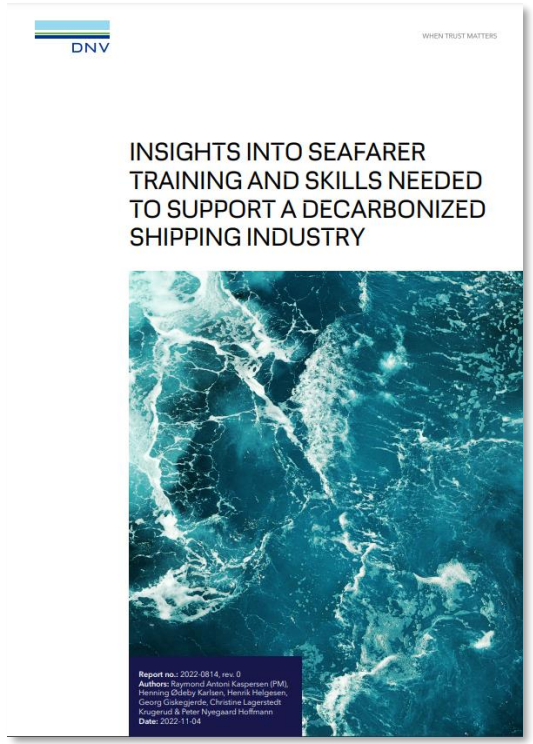
# The MJTTF has delivered recommendations on how best to support the maritime workforce in making the shift to a decarbonized shipping industry

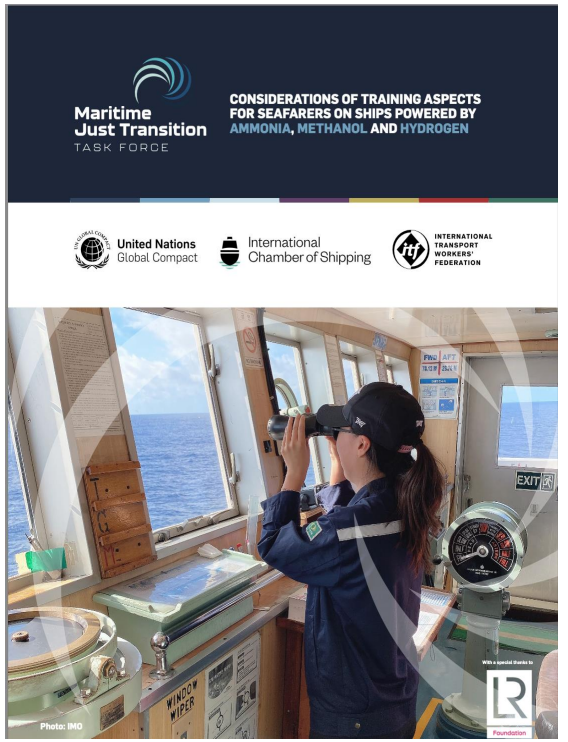
## 10-point action plan


## Position paper


## Report




## Report

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# The MJTTF and IMO have a joint project to develop baseline training framework for seafarers in decarbonization

**Outcomes:**

1. **Generic competency standards** for the use of methanol, hydrogen and ammonia as fuels
    - **Input to IMO processes:**

        Input to a separate agenda item at IMO HTW11 in February 2025 for consideration by IMO Member States and industry stakeholders.

        The project outcome will feed into IMO's comprehensive STCW review, which is done in parallel.
2. **Training framework and learning material:**
    - **Generic training material** for all seafarers, shore-based personnel, policy makers and regulators.
    - **Basic and advanced training material** for those with designated duties on board, and officers responsible for operations related to the use of alternative fuels on vessels
3. **Instructor handbook**
    - Train-the-trainer course and materials to support the roll-out of the new training materials.
4. **Roll-out of train-the-trainer programme trial**
    - Carried out in Asia by World Maritime University with the Maritime Technology Cooperation Centre.

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# The UNGC Ocean Stewardship Coalition is supported by leading companies, whereof several are actively engaged in the MJTTF

MAERSK

IKEA

DP WORLD

PTC PHILIPPINE TRANSMARINE CARRIERS, INC.
Moving the World

YARA
Yara Clean Ammonia

gard

HÖEGH AUTOLINERS

CMA CGM

ONE
OCEAN NETWORK EXPRESS

msc

ANGLO-EASTERN

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# Industry involvement and social dialogue is key to the project

**Project owners**

- IMO
- UN Global Compact, repr. MJTTF Secretariat

**Core project team**

- Lloyd's Register
- World Maritime University
- Int. Chamber of Shipping
- Int. Transport Workers' Fed.
- UN Global Compact
- IMO

**Lead Experts**

- MMMCZCS
- MAN
- SGMF
- Yara
- OTG
- Shell
- NH2
- Anglo Eastern
- X-pressfeeders
- PTC

**Action Group – input from the wider ecosystem**


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# Risk Assessment Workshops

Workshops were facilitated by Lloyd's Register's Maritime Decarbonisation Hub, the research and action unit of the organisation that focuses on the safe deployment and upscale of zero and near-zero fuels, involving various stakeholders representing different areas of the maritime supply chain, namely:

- Subject matter experts from LR and LR Maritime Decarbonization Hub.
- The Core Project team partners, comprising of organizations and associations who oversee the project (UNGC, ICS, ITF, IMO, WMU and LR, )
- The MJTTF Action Group members who were invited to review the preliminary outcomes.
- Industry prominent figures invited as workshop participants for primary input.
- Industry Subject Matter Experts with expertise in fuels, engineering, competencies and training.

• The workshops were designed using the STCW Code tables as the main reference point. These tables

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# Risk Assessment workshops

- The workshops were designed using the STCW Code tables as the main reference point. These tables specify the minimum standards of competence for basic and advanced training for ships propelled by fuels regulated under the IGF Code. The workshops' objective was to establish a robust foundation for developing baseline competence standards and training materials for seafarers handling ammonia, methanol and hydrogen with some deep dives on the following areas:

- The common and unique aspects in the handling and management of each fuel.
- Identification of safety-critical tasks associated with maritime operations for each fuel.
- Identification of hazards, assessment and management of ALARP (As Low As Reasonably Practicable) risk mitigation measures.
- Development of a record of competency gaps and training considerations, including changes in existing frameworks.

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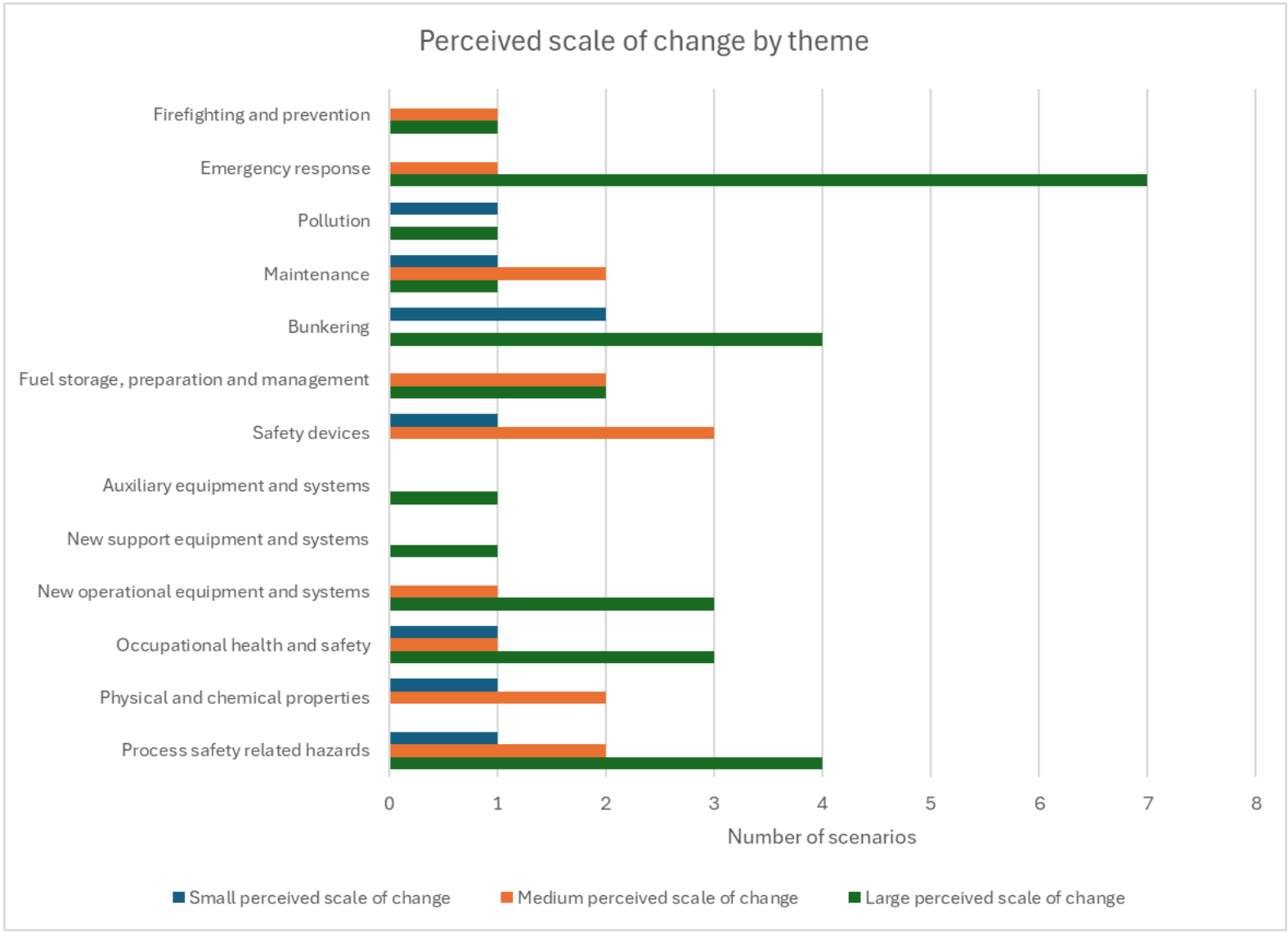
# Methanol Perceived scale of change by theme, level and number of related scenarios

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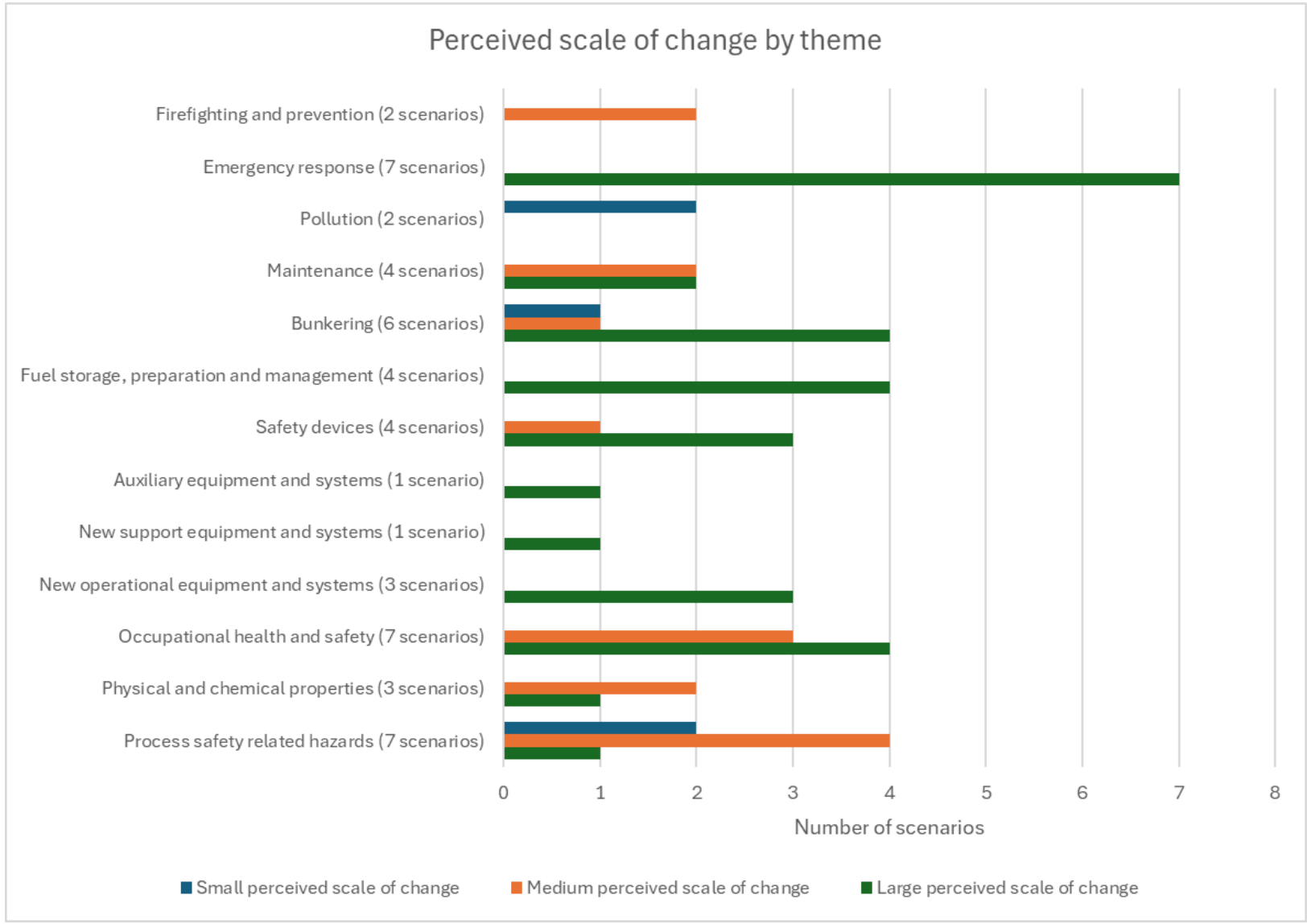
# Ammonia Perceived scale of change by theme, level and number of related scenarios

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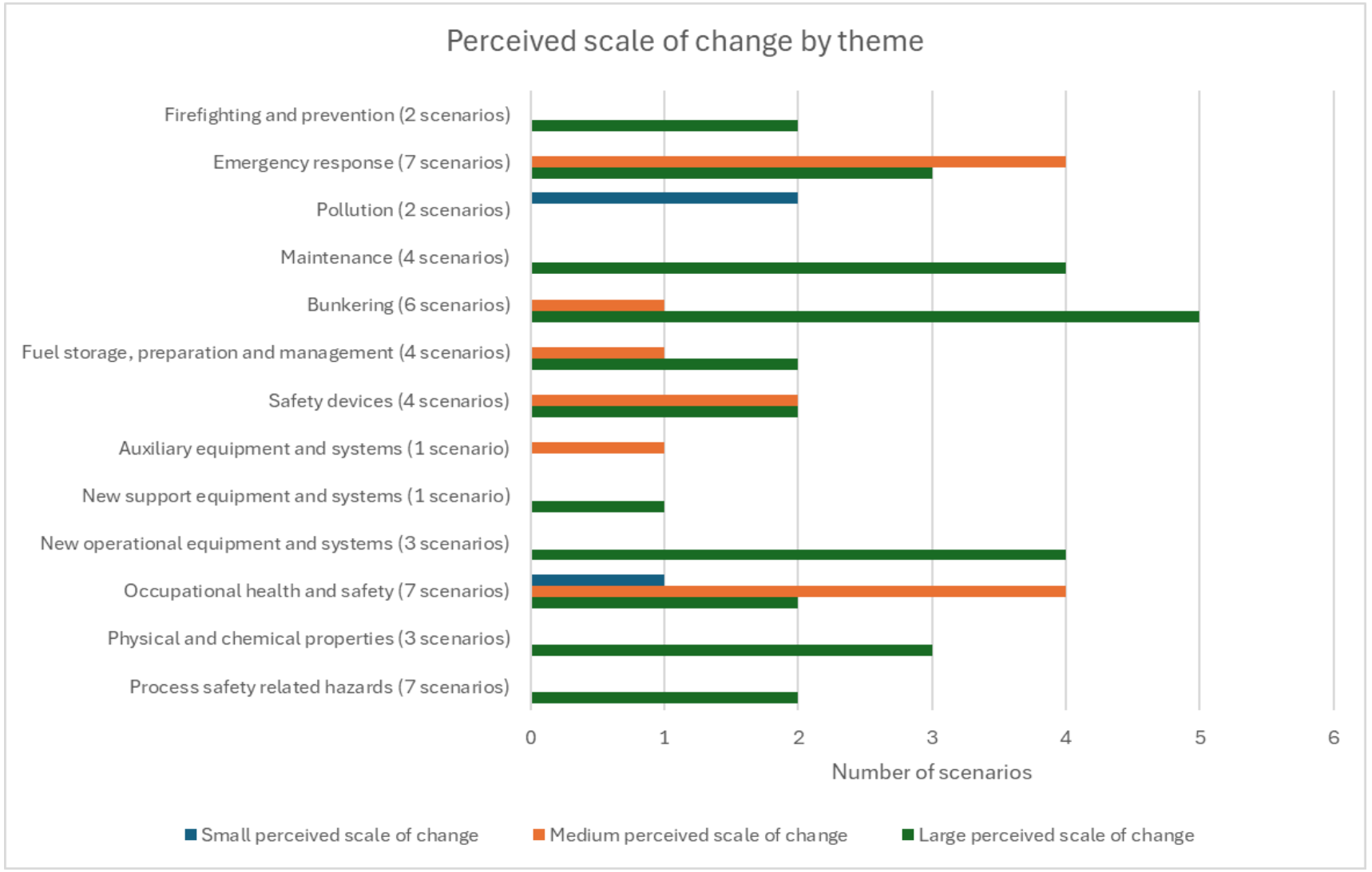
# Hydrogen Perceived scale of change by theme, level and number of related scenarios

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# Key considerations associated with the use of ammonia as a marine fuel focused on safety devices, process safety and occupational health and safety training are:

- Ammonia's toxicity poses new challenges, requiring knowledge of its physical and chemical properties, hazardous profile and human exposure threshold limits.
- New knowledge of ammonia fuel supply system design.
- New knowledge on ammonia fuel supply system operation.
- New maintenance and inspection regimes.
- Additional working practices for ammonia handling onboard the ship, including work permits, toxic space entry, management of change.
- Definition of hazardous and toxic zones onboard the ships and Personal Protective Equipment (PPE) requirements for entry and operation within these zones.
- Enhanced PPE requirements and ammonia-specific emergency response strategies.
- Training on the use of new equipment and safety systems, in addition to training on the use of PPE and emergency response to ammonia incidents onboard the ship.

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# Key considerations associated with the use of methanol as a marine fuel focused on bunkering, process safety hazards and occupational health and safety are:

- Methanol's greater flammability compared to conventional fuels requires new fire detection methods and safety protocols.
- Detailed training on methanol's properties, including its toxic effects, corrosivity and chemical compatibility, is necessary.
- PPE protocols and process safety measures need updating to account for methanol's unique hazards.

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# Key considerations associated with the use of hydrogen as a marine fuel focused on bunkering, process safety hazards and new operational equipment are:

- Hydrogen's high flammability necessitates new flame detection methods and enhanced fire safety measures.
- Theoretical knowledge of hydrogen’s properties, such as high leak propensity and potential for corrosion, is crucial.
- New PPE protocols and occupational health and safety training are required due to hydrogen's unique hazards.
- Special attention to fuel storage, particularly with liquid and compressed hydrogen, to prevent flammable atmosphere formation.

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# Feeding into the IMO regulatory path

There are three forums within the IMO that are relevant to this project and its impact. These are listed here below:

**Sub-Committee on Human Element, Training and Watchkeeping (HTW)**

- Dealing with the comprehensive review of STCW Convention and Code
- Expected to revise the training for crew on ships using alternative fuels and technologies

**Sub-Committee on Cargo Carriage and Containers (CCC)**

- Developing the interim safety guidelines for various alternative fuels
- Developing future safety provisions in relation to alternative fuels as part of a mandatory instrument

**Maritime Safety Committee (MSC)**

- Approving the interim guidelines with a view to developing provisions in a mandatory instrument
- Expected to be approving and adopting standards of competence in chapter V of the STCW Code

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# Stages for how guidelines develop into mandatory instruments by IMO :

1. Development of interim safety guidelines – by Sub-Committee on Cargo Carriage and Containers CCC
2. Interim safety guidelines are approved – by Maritime Safety Committee (MSC)
3. Stakeholders use these interim guidelines to construct ships
4. Ships are approved by flag States under SOLAS alternative design and arrangements
5. Stakeholders use different frameworks to train crew on such ships
6. Guidelines are used as a basis for provisions in mandatory instruments when there is sufficient industry experience – by MSC
7. Training frameworks in the form of guidelines are developed and approved – by Sub-Committee on Human Element, Training and Watchkeeping HTW
8. Training frameworks in the form of standards of competence are adopted within STCW – by MSC
9. This is the current state of play for the relevant safety guidelines

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# CONSIDERATIONS OF TRAINING ASPECTS FOR SEAFARERS ON SHIPS POWERED BY AMMONIA, METHANOL AND HYDROGEN

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