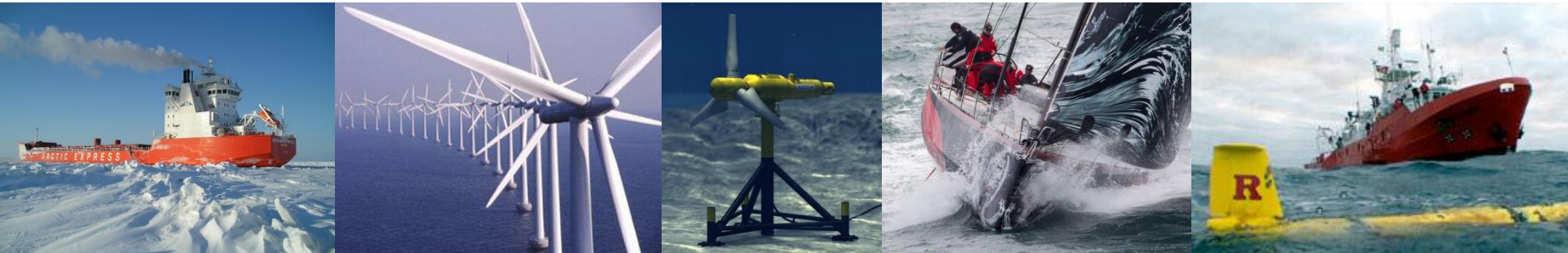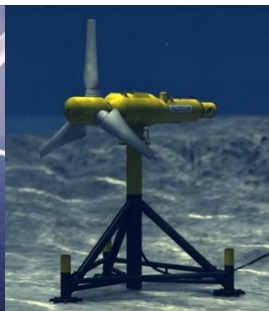# How to write a paper

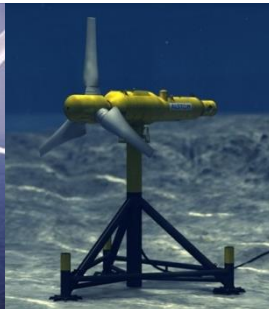## (Based on the text by Mike Ashby)
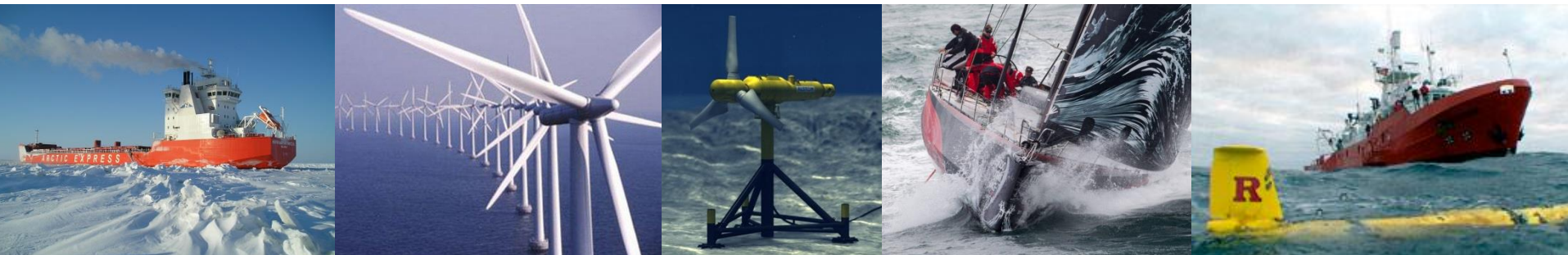
The first question:

Why?
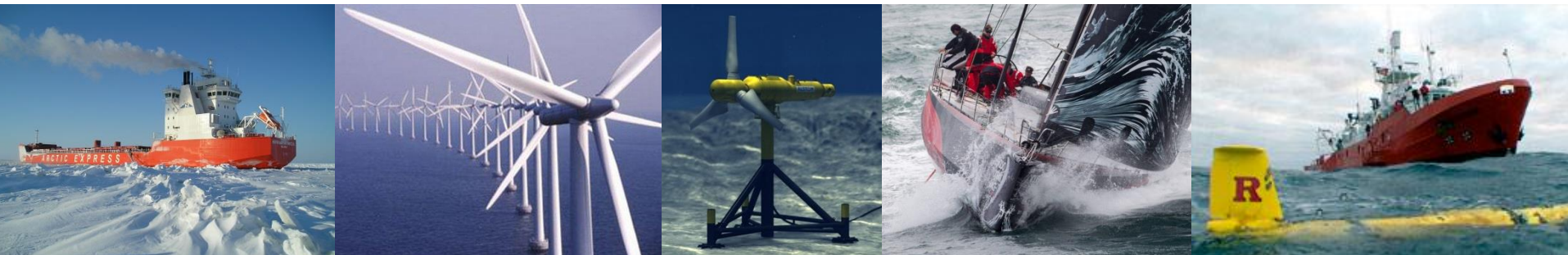
The Market

Who are your readers?

Title

- Meaningful and brief
- If you have alternative titles: who would you like to attract?
- May be the only part of your paper that someone will actually read!

Abstract

- Not only a summary that the reader may be interested in - a summary that should make the reader want more

- A few sentences on motive, method, key results and conclusions, respectively.

- Typically, 100-200 words in total.

Introduction

- What is the problem and why is it interesting?
- Who are the main contributors, and what did they do?
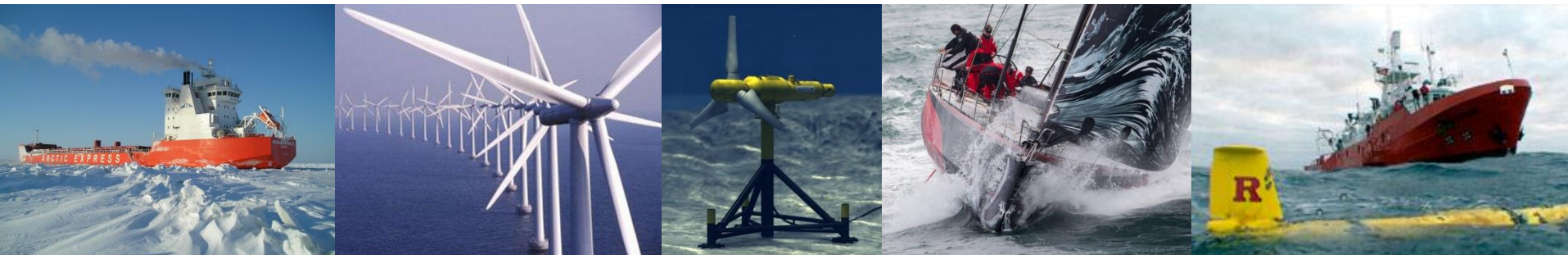- What novel thing will you reveal?

✓ Start with a good and "catchy" first sentence.

✓ Last paragraph may be an overview of your paper.

✓ Engineering work: give a historical background or present typical applications (e.g. initial stability).
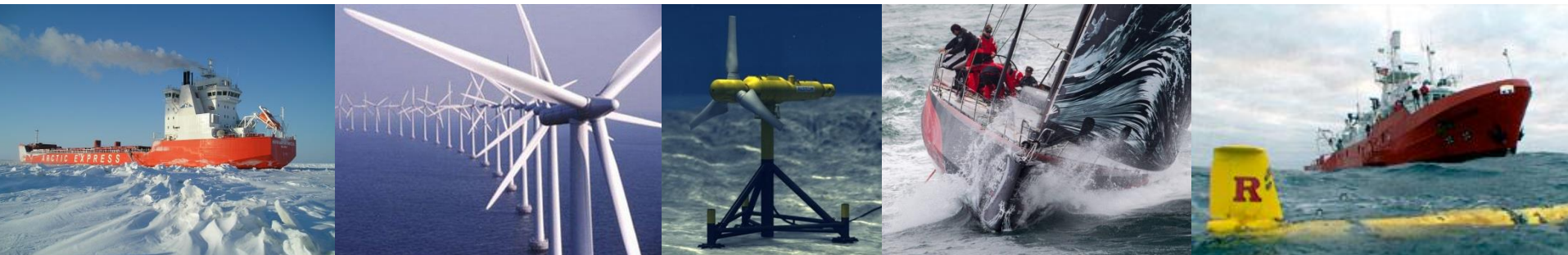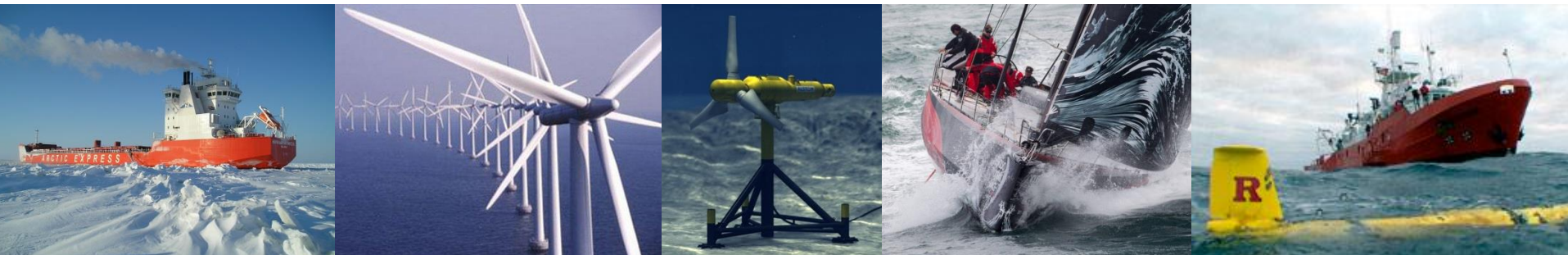
'Method' (heading differs)

- What have you done (experimentally, theoretically and/or computationally)?

- State assumptions, pose governing equations, explain methods used.

- What is different about your method?

- Keep a sufficient and consistent level of detail, so that your method/approach can be reproduced.

- Don't mix with "Results" or "Discussion"!
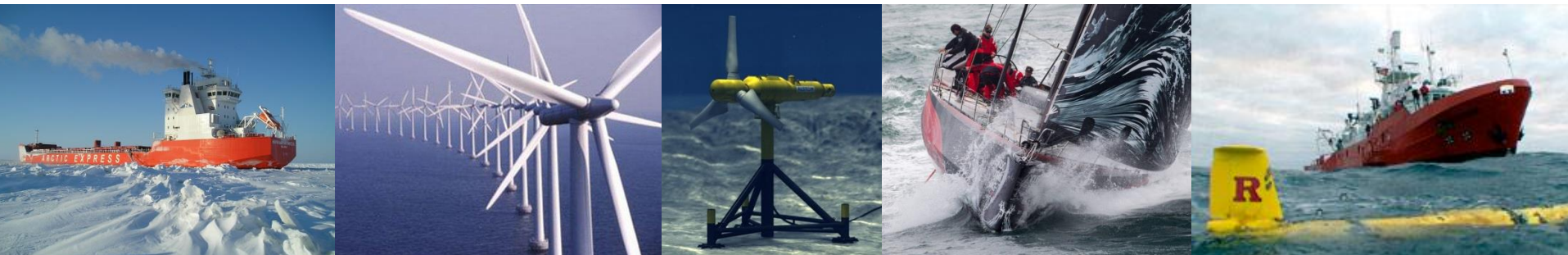
'Results' (heading differs)

- Present the output of the experiments, theoretical model or computations.

- Present data in a simple and apparent way, without opinion or interpretation.

- Give emphasis in the text to most important aspects of the presented data (tables and/or graphs).

- Data that is not commented on is obviously not necessary to include!

[Figures and Tables]

- Readers tend to "scan" figures and their captions!
- Make each figure as apparent and self-contained as possible.
- In graphs, make sure that axes are properly labeled, that units are defined and that a decent fontsize is used (at least larger than 0.5*text height).
- Preferably label each curve of graphs (use a legend).
- Use an appropriate number of figures for numerical data in tables (engineering judgement!).

'Discussion' (differs)

- Show relationships between the results and analysis, theory or model.

- Based on this, seek to extract principles, relationships or generalizations from the results.

- Be clear and concise!

- Sometimes combined with Conclusions; or for a short paper included in Results
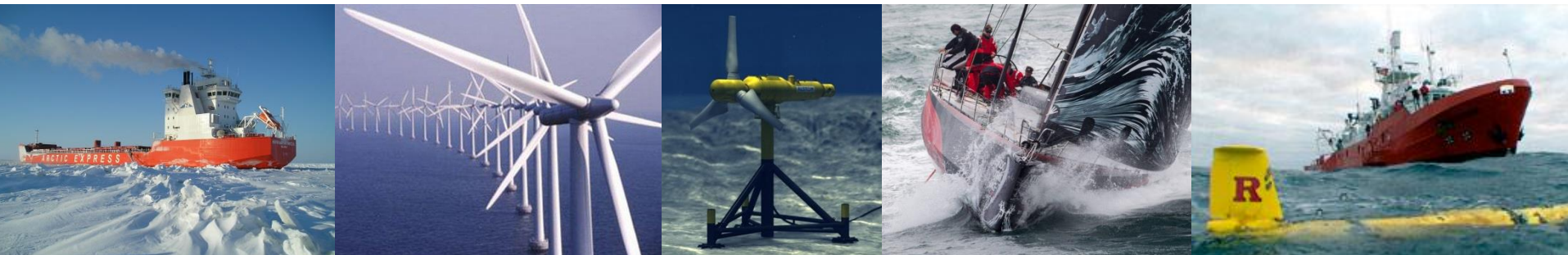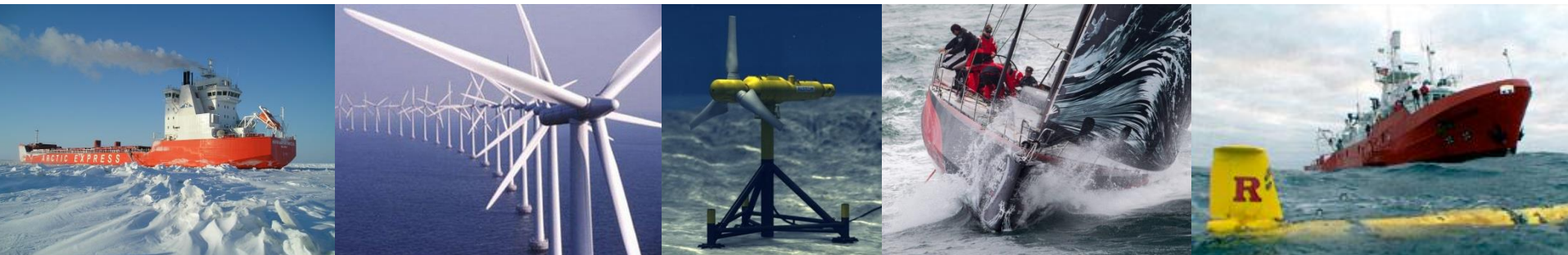
Conclusions

- Draw together the most important results and their consequences.

- List any reservations or limitations.

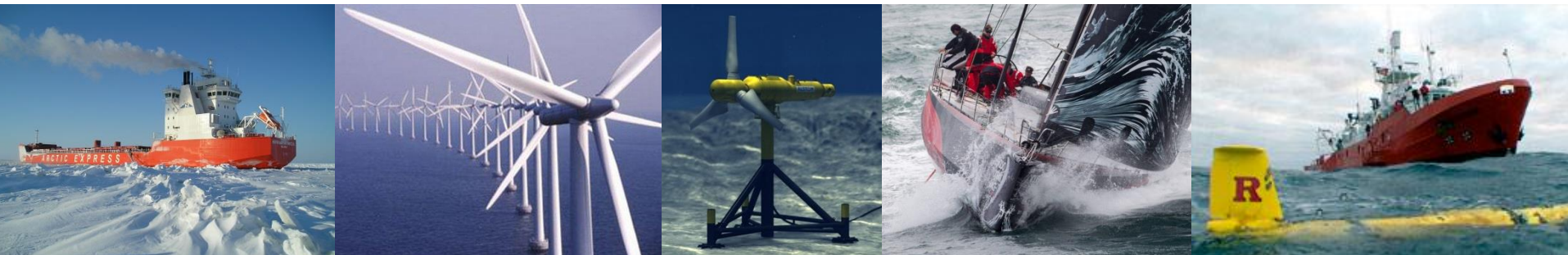- Do not duplicate the Abstract (or vice versa)!
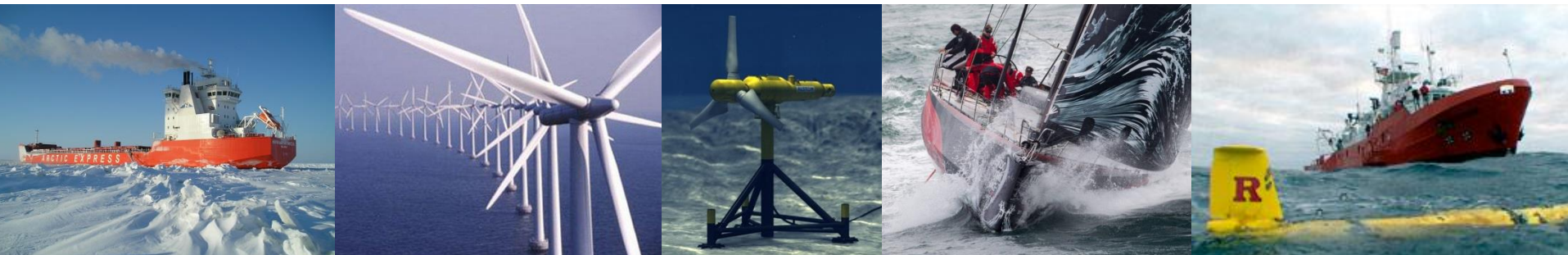
Acknowledgements

- Thank people who have contributed with ideas, technical support or funding.

References

- Cite significant previous work (typically in the Introduction).

- Cite sources of theories, methods or data being used.

- References must be complete: See IMM reference on how to write.
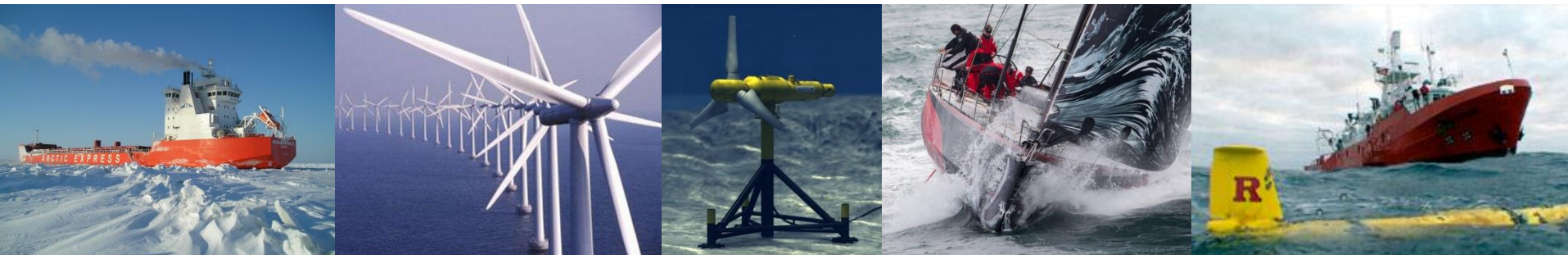
Useful advice #1

When reporting engineering work, clearly describe the case/problem early in the paper (preferably directly after the introduction).

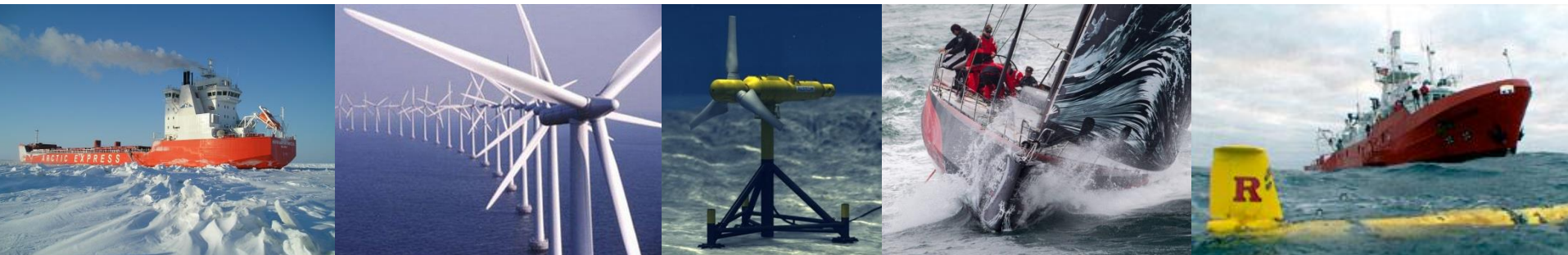This helps the reader keep track and paves the way for subsequent theory.
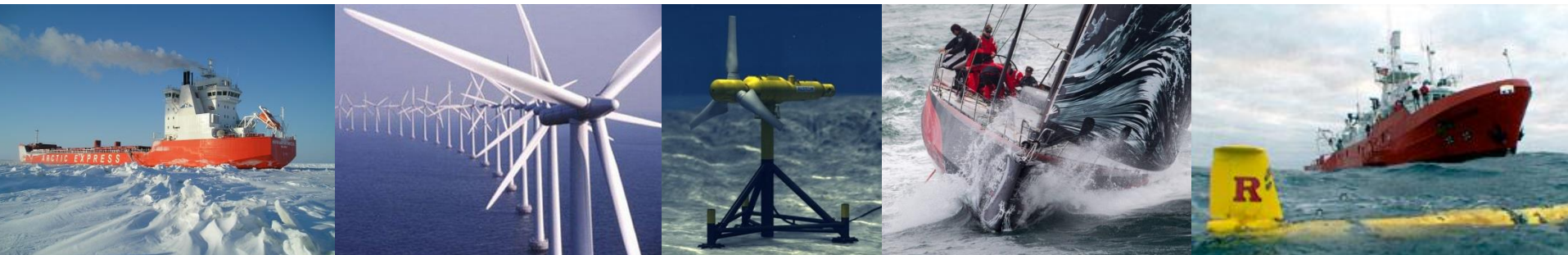
Useful advice #2

Only present data in tables or graphs that is essential for making a point or draw a conclusion. This means that if you show data in a graph, you should also comment on it. "In the graph of Figure 1, it is seen that…"
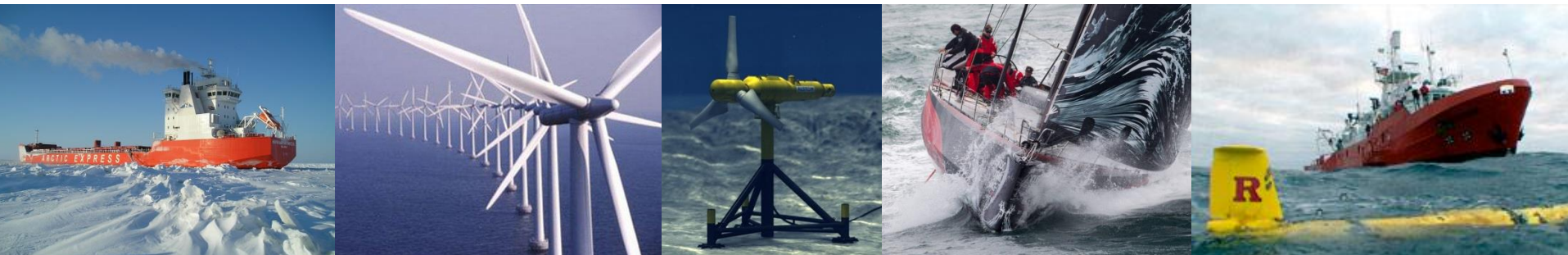
Useful advice #3

Emphasize the title, the abstract and the conclusions. These are the most important parts in order to make the reader interested in your paper, and to communicate your message. These parts are typically written in the last minute...
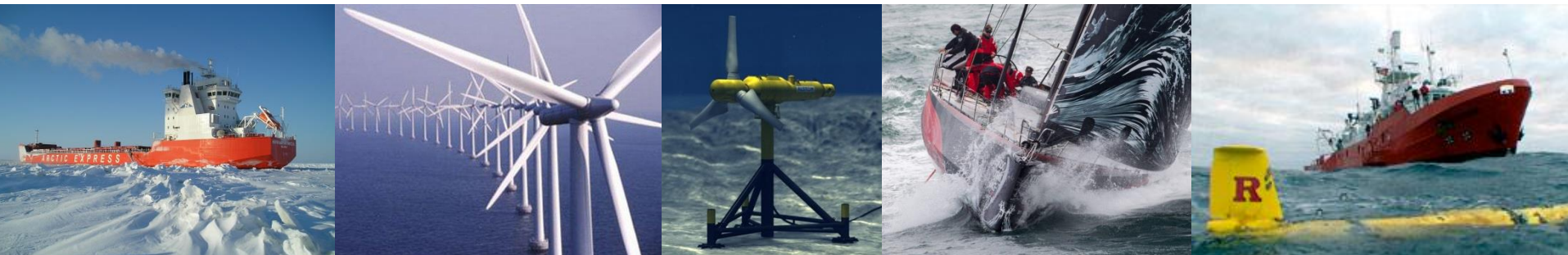
Useful advice #4

A digestive introduction makes a difference. Rather than giving another summary of the paper (often the case), write a historical background or review important applications of the particular system (ships, offshore wind, tidal energy). However, the final paragraph can state the objective of the paper for a smooth transition to the next section.
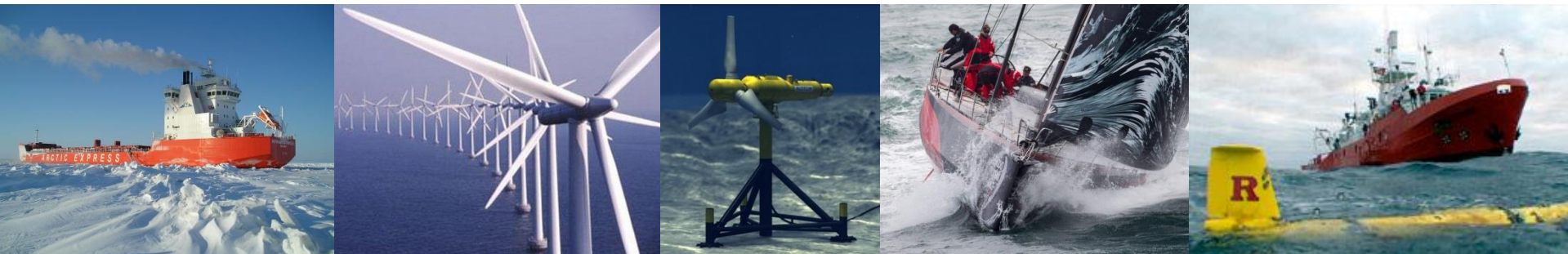
Useful advice #5

Always state the governing equations of the problem that is treated (e.g. equations of motion). Otherwise, the reader cannot judge the relevance of your work, no matter how much you claim to have a "super-duper-accurate numerical solution" of some fancy equations.

When writing equations, do not forget to define all properties (every single one!). Very common mistake.

Useful advice #6

Try to keep a consistent level of detail in the paper. If you introduce more details than necessary (the difficulty is to judge this) you have to define a lot of properties and explain the details, which increases the likelihood of errors and mistakes. And you will quickly lose the reader's attention.

Useful advice #7

A paper is not a media to promote company names or products. Try to write an overall description of the software tools you use and make a reference instead.

Ex: The calculations are performed using a standard graphical programming tool [4]. (Reference to LabView)
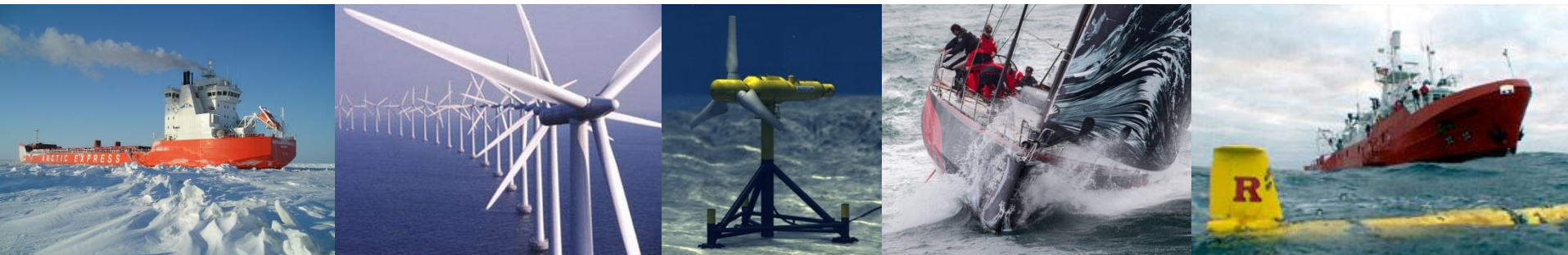
Finally

A well written paper makes a difference. If your paper is messy, difficult to understand and contains a lot of errors and misspellings – <u>what will the reader think about your technical work???</u>

As an engineer, it is very important that you can communicate your results and conclusions in an effective way!
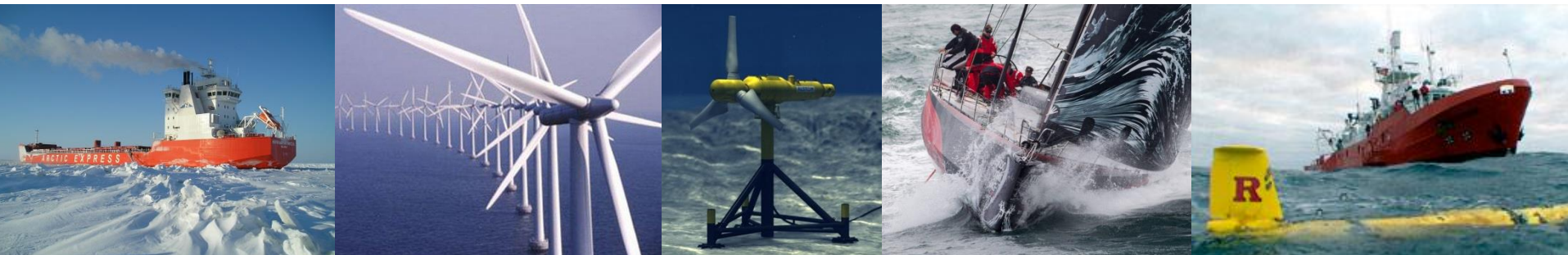
Instruksjon laste opp LaTex rapportmal

- Gå til:
- http://home.hib.no/ansatte/gste/ftp/MAS124_Intro_Marintek nikk/Laborasjon/Rapport_skriving/
- Last ned:

[To Parent Directory]

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Gå til:

- www.overleaf.com og lag en konto (alle i gruppen)

- **Én person** i gruppen klikker på New Project -> Upload project , hent zip filen der du lagret den

- Klikk inn på prosjektet og dele med din(e) gruppemedlem(mer)