UNDERSTANDING HOW ENERGY EFFICIENCY IS ACHIEVED IN SHIPPING COMPANIES

An action research approach

INTRODUCTION
What does an energy efficient shipping company do, that its competitors don’t? While a large potential is available, many companies have been shown to still struggle with their work with energy efficiency. A collaborative project was created in 2010 between a university, a consultancy and two shipping companies, with the aim to implement an energy management system in these two shipping companies. In this way, we could understand how companies need to change in order to better harness the potential for energy efficiency (Johnson, 2013).

A PhD student—the presenter of this poster—was to work as an action researcher in the shipping companies and aid them in the implementation process. The consultancy, with years of experience in the field, would function as a mentor to the student and give access to best practice. The figure below, from Johnson et al. (2014), outlines this idea.

This poster draws upon some published and unpublished findings in this project.

A PERFORMATIVE PERSPECTIVE ON "BARRIERS" TO ENERGY EFFICIENCY
For decades, researchers, policy-makers and others have wondered why seemingly cost-efficient measures to increase energy efficiency are not being implemented. A large taxonomy of “barriers” (and “drivers”) to energy efficiency now exists in literature (e.g. Sorrell et al., 2004). The approach has been criticized for its reductionism (Palm and Thollander, 2010), or in other words:

"The barriers have never explained anything; the barriers have to be explained instead."

EXPLORING AND PROBLEMATIZING "COST-EFFECTIVENESS"
Decreased time in port is highlighted in many assessments of cost-effective potential as a measure that could increase energy efficiency at very little cost – companies can use the time gained to speed down when at sea. In Johnson and Styhre (2014), we explore and problematize this potential in a study of a short sea shipping company operating in the Baltic and North Seas. We combine quantitative and qualitative data to analyse the potential in terms of possible reductions in energy use, as well as to understand how this potential arises. While a significant potential could be shown to exist, we also find that a number of stakeholders in different organizations need to be involved in order to reach it. Tools for analysing and following-up on performance as well as good communication with crew and technical management where of significance. However, the shipping company could also use the extra time to carry more cargo over time, not slow down.

FROM PRACTICE TO RESEARCH TO EDUCATION
The network and good-will established in the Swedish shipping community during these years has opened up opportunities for education. A new M.Sc. course in Maritime Energy Management (7.5 ECTS credits) will give all students small projects to perform in Swedish shipping companies, starting November 2014. Course literature was not available and created in collaboration with DNV-GL.

CONCLUSIONS
An action research strategy implies three sources of anxiety for a researcher: learning the subject matter (in this case, energy efficiency in shipping), learning research methods, and learning organizational intervention.

On the other hand, the method may be a successful way to negotiate access to data, and contribute to positive change more directly than through giving policy recommendations. A focus on practice has also translated well into educational initiatives.

The “knowledge-action gap” in the context of energy efficiency in shipping companies can be understood in terms of the business models employed by companies – it is still possible to make money through practices that counter the logic of energy efficiency (Taudal Poulsen and Johnson, 2014). However, transdisciplinary research strategies, as e.g. outlined in this poster, can contribute to changes on local levels.

REFERENCES