



GREEN EFFORTS – Green and Effective Operations at Terminals and in Ports



GREEN EFFORTS
port innovation

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GREEN EFFORTS – PROJECT AIM



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Reducing the CO₂ footprint of terminals and ports

- through a cleaner energy mix
- and through reduced energy consumption.



FACTS AND FIGURES



JACOBS
UNIVERSITY

- Funding: 2.2 Mio. €
- January 2012 – June 2014



**GLOBAL
INSIGHT**

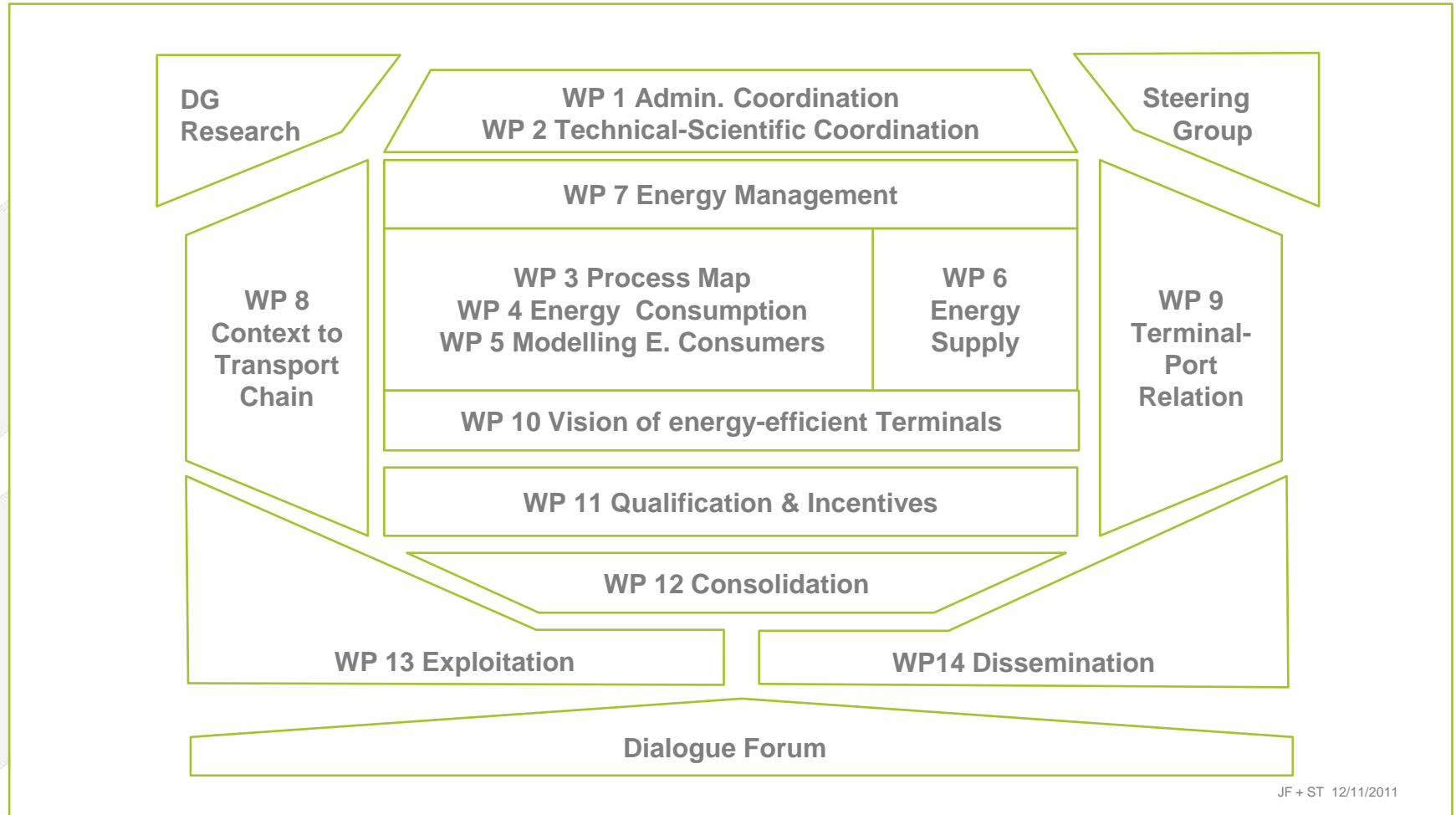
SIEMENS



FACTS AND FIGURES – WORK PACKAGES



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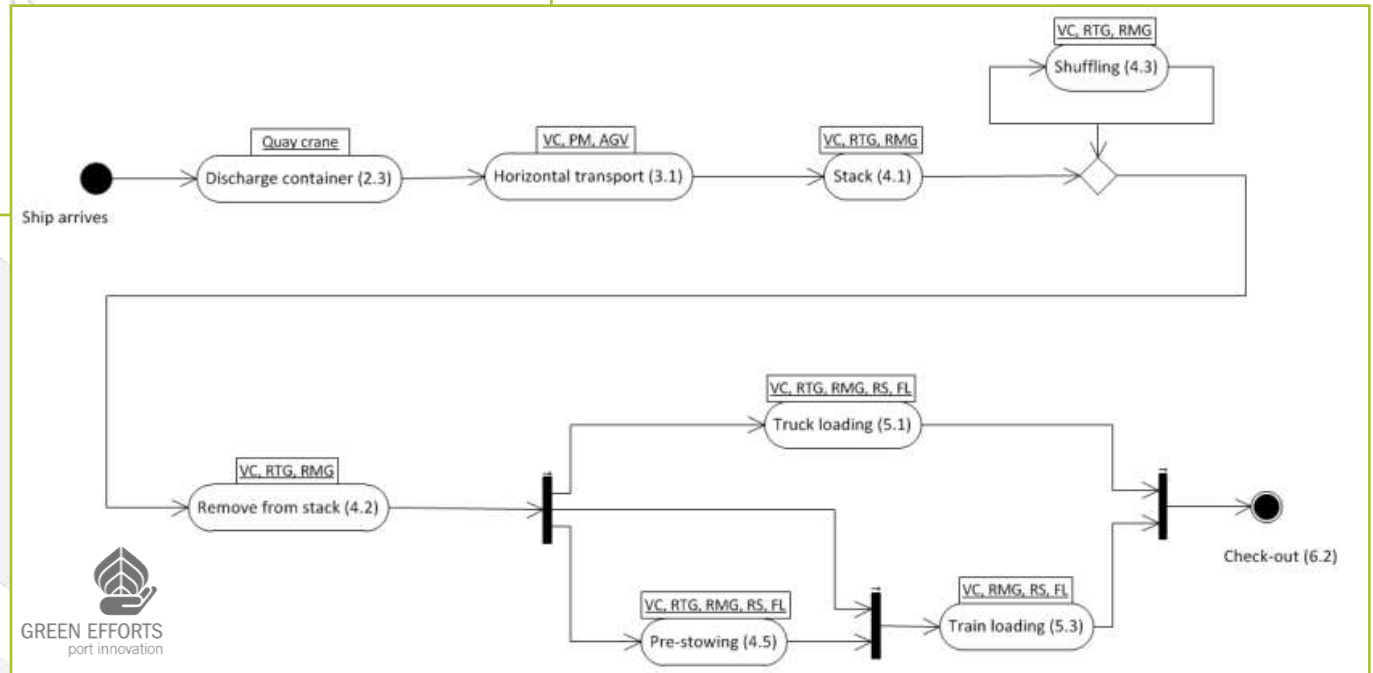
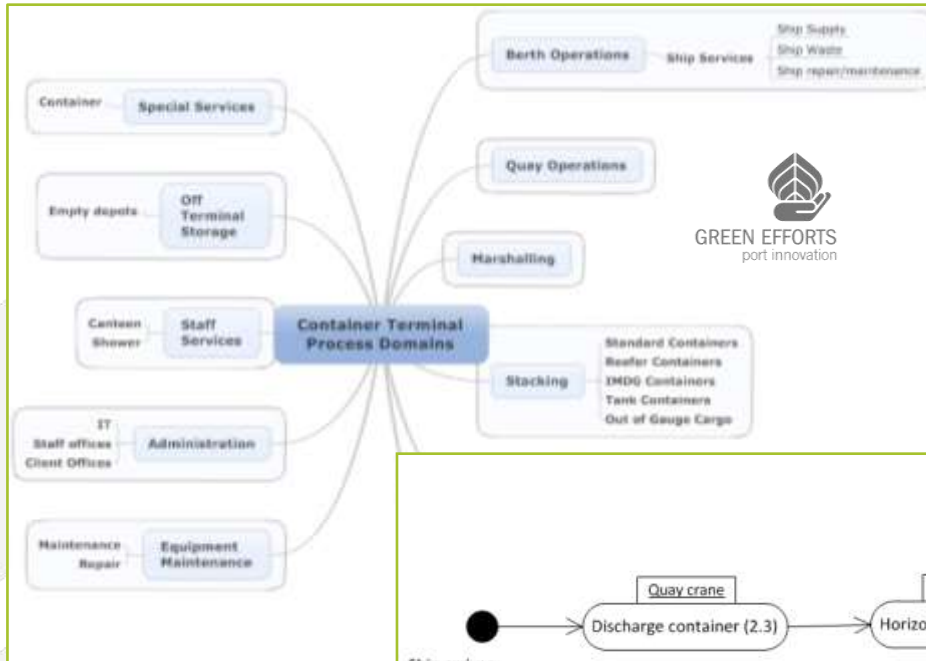


JF + ST 12/11/2011

RESULTS – PROCESS MAP CONTAINER TERMINAL

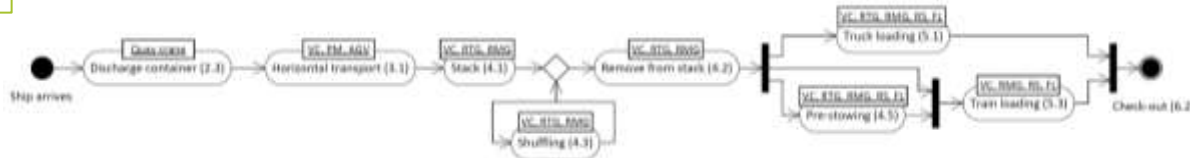


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OUTLOOK – PORT & TERMINAL KNOWLEDGE LANDSCAPE

1: Processes



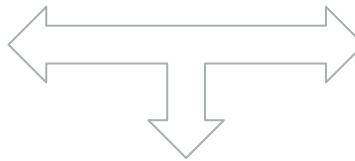
2: Energy Consumption

Consumption per move/TEU



Reduction Measures:

- A
- B
- C
- ...



3: Energy Supply

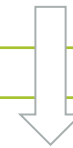
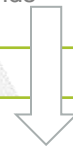
External / in-house:

- Diesel
- LNG
- Biomass
- Wind
- Solar
- Tidal
- ...

4: Energy Management

- Demand Side Management
- Load Shedding
- Smart Grids
- ...

5: CO₂-Emissions



RESULTS – REFERENCE TERMINAL PROCESSES



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RESULTS – REFERENCE TERMINAL PROCESSES



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RESULTS – REFERENCE TERMINAL ENERGY CONSUMPTION



RESULTS – REFERENCE TERMINAL ENERGY SUPPLY



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INFORMATION AND CONTACT

- Project website:
<http://www.green-efforts.eu/>
- Information material:
 - Flyer
 - White paper:
Photovoltaics, LED and others
- Contact
 - Project Coordinator and Dissemination group:
Jacobs University Bremen gGmbH
Prof. Jens Froese, Indah Lengkong
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 - Presentation on e-harbours conference on electric mobility:
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