Transportens Innovationsnetværk
Medfinansieres af Uddannelses-og Forskningsministeriet

Continuation of PhD Reference Group

Initial meeting to inaugurate the new version of the network

”Wind Logistics Group”

Reference Group meeting #10
May 6, 2019
Stilling, Denmark

Agenda

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Medfinansieres af Uddannelses-og Forskningsministeriet

1. Meeting opening, welcome, and agenda review during working lunch
2. New/changed Reference Group member organizations/changed participants – short introduction by new participants
3. New purpose and scope of the Reference Group "*version 2.0*"
4. Project work and networking activities
5. Discussion about possible topics and challenges for the *Reference Group 2.0* to work on
6. New name for the Group
7. Wrap-up and preparation for after work / "gå-hjem" meeting at 16:00 PM

Introductions and new members

- Let us briefly go around the room
  - Company background
  - Personal background
  - Why did we decide to stay in

Goals of today

1. Define a new charter for this group going forward

2. Discuss topics for the group to work on (”*speed boats*”)

3. Agree on a new name for the group

Vantage point of today

- Reference Group of the global wind energy shipping and logistics PhD research project
- This Group met for the first time on August 28, 2013
  - ➢A total of 9 meetings from 2013-2018
  - ➢8 after work / ”gå-hjem” meetings from 2014-2018
    - ✓Approx. 350 attendees of the ”gå-hjem” meetings
- In this Group, we used the analogy of the Group being the ”*mother vessel*” from where we launched a number of ”*speed boats*”



At the deck of the ”*mother vessel*”…

- We shall not repeat the academic Reference Group
- We are here as industry, what we do will be done by industry, and it will be done to benefit industry
- The work in the Reference Group
  - …created a common understanding between us the Group members
  - …established a common understanding of the terminology
  - …helped us the Group members interact using our special ”tribal language” created

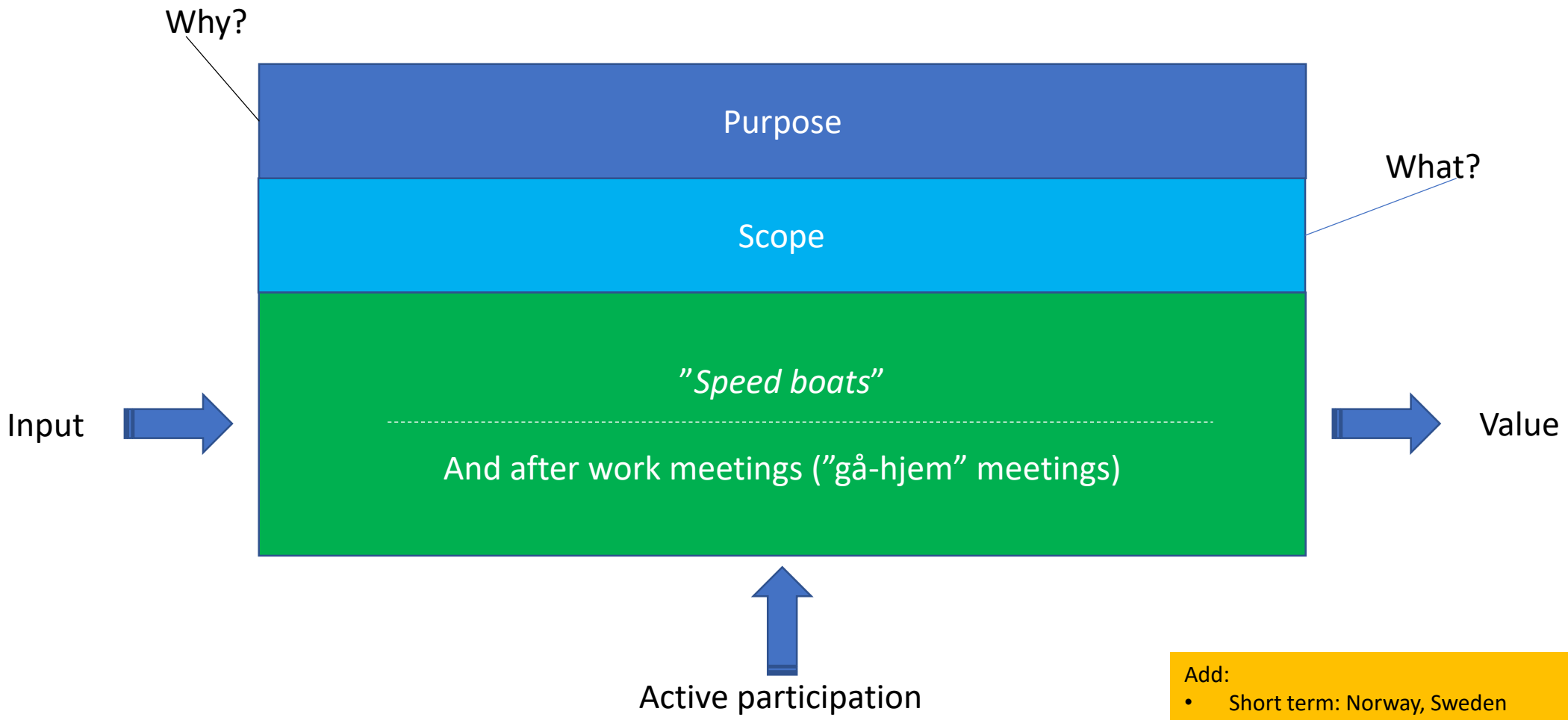
At the deck of the ”mother vessel”, we stand ready to launch from here

We are here to decide the PURPOSE and SCOPE

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- Continue with entire format of Reference Group 1.0, i.e.:
  - A value chain network that meets twice per year from 12:00 to 16:00 Central European Time (CET) to review offshore wind logistics matters from the ”*mother vessel*” and launch ”*speed boats*”
    - ✓ For industry, by industry
      - No academic goal
  - The doors are opened for an after work/”gå-hjem” networking event afterwards
    - ✓ At 16:00 CET
      - Hosting company makes initial presentation
      - Thomas Poulsen (Panticon) supplements (representing the Reference Group)
      - Q&A
    - ✓ 17:30 refreshments/networking
- Continue with part of format of Reference Group 1.0, i.e.:
  - The networking part only
    - ✓ This is the ”minimum” required by **TINV** to be the platform

Goal of today



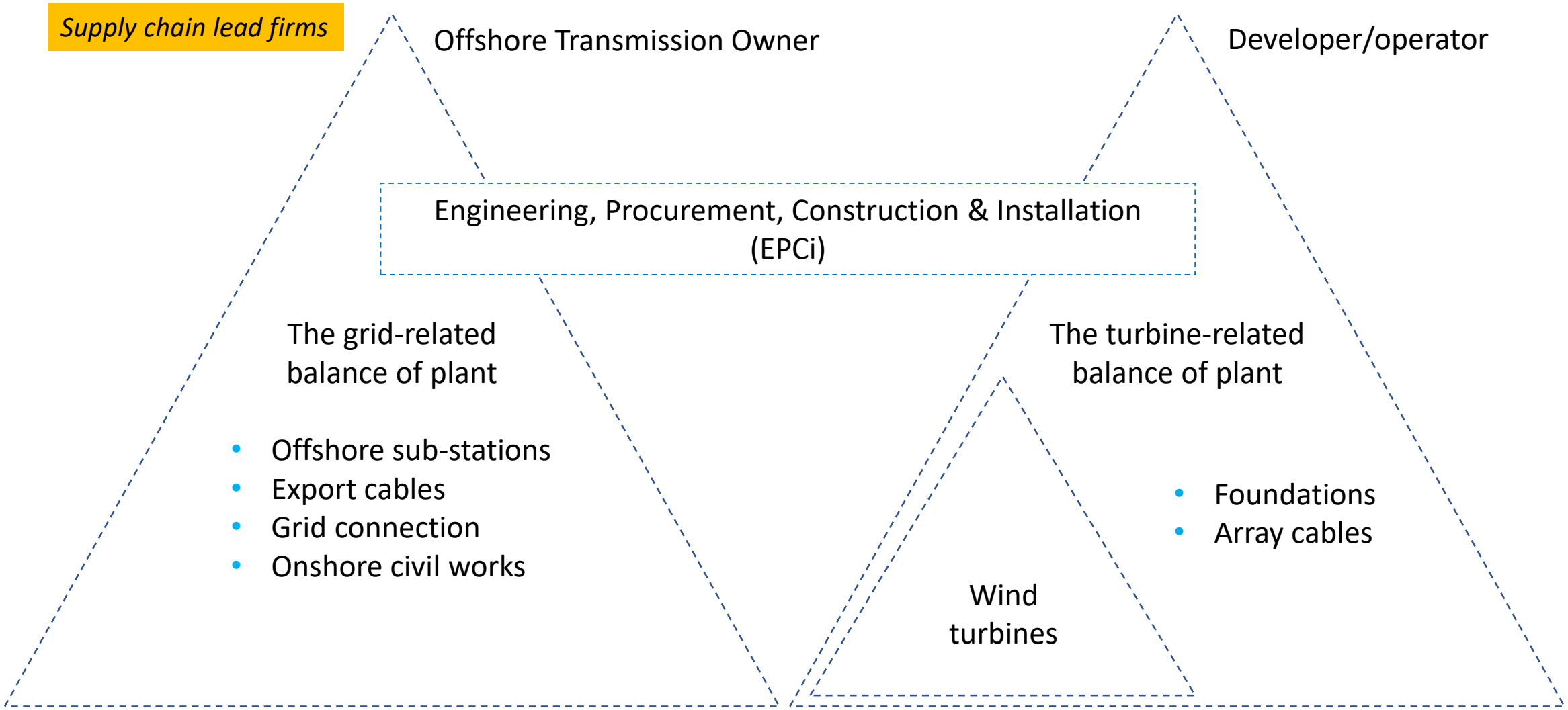
Add:

- Short term: Norway, Sweden
- Medium term: Germany, Holland, Belgium, UK
- Long term: China, Taiwan, Japan, South Korea, USA

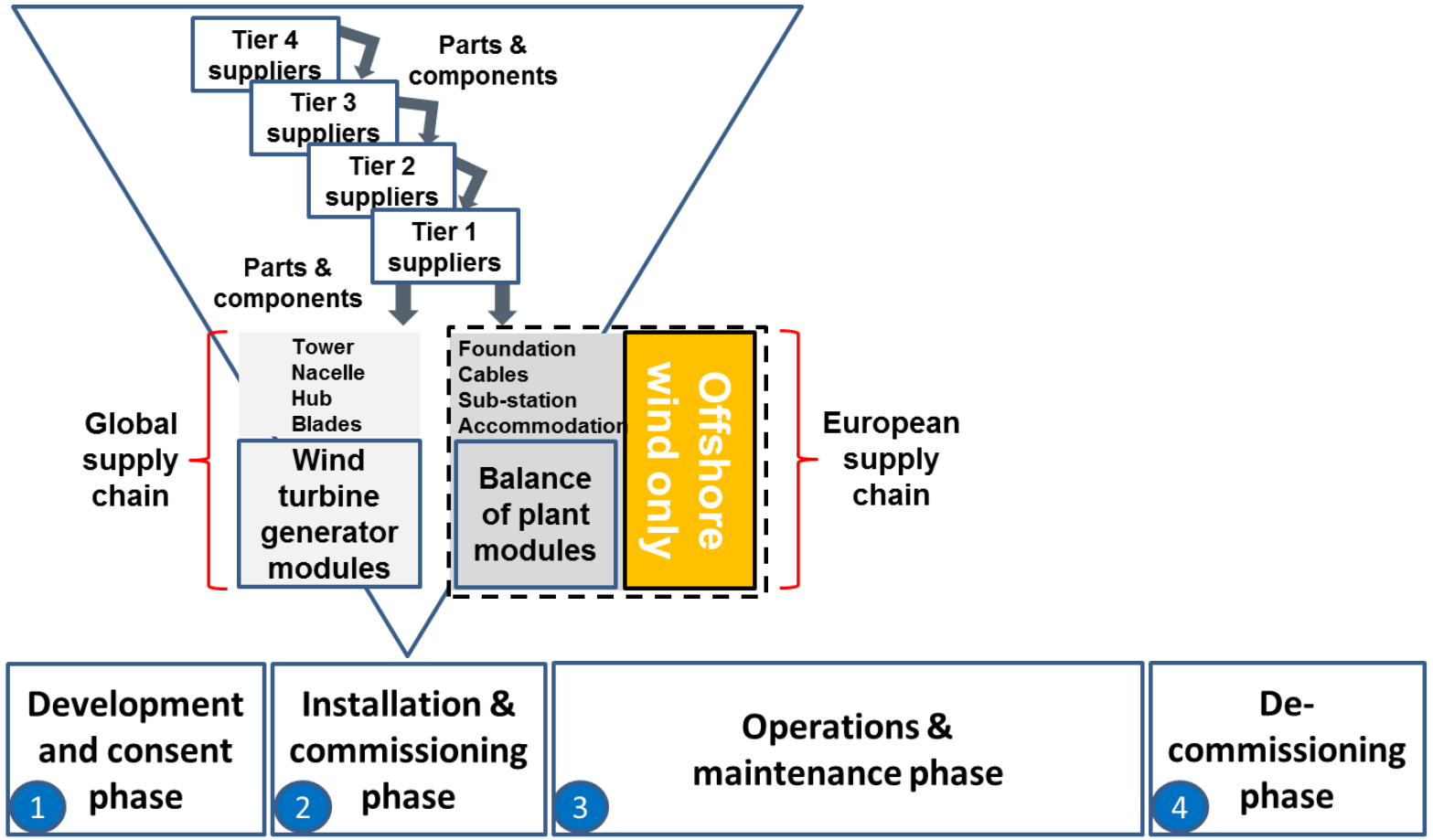
New *raison d'être*

- Offshore wind
  - Bottom fixed
  - Floating
- Logistics
  - Transport and port management
  - Shipping/maritime
  - Logistics (warehouse, sea, air, forwarding, etc.)
- Across all 4 offshore wind farm life-cycle phases and towards solutions offerings
  - Development & consent (D&C)
  - Installation & commissioning (I&C)
  - Operations & maintenance (O&M)
  - Decommissioning (de-comms)

Value chain stakeholders – offshore wind



Logistics as part of offshore wind



The 5 flows:

1. Goods
2. Information
3. Documentation
4. Money
5. Knowledge

Source: Poulsen, 2015

The new platform - TINV

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Transportens Innovationsnetværk (TINV)

- Started in 2010
- Just received 4th round of funding (Dec 2018 – Dec 2020)
- Key partners include:
  - Maritime Development Center (MDC)
    - ✓ Holds secretariat position
    - ✓ Secretariat established based on funding from, e.g., The Danish Maritime Foundation (Den Danske Maritime Fond)
  - FORCE Technology
  - Danish Technological Institute (TI)
  - Copenhagen Business School (CBS)
  - Technical University of Denmark (DTU)
  - Aalborg University (AAU)
  - University of Southern Denmark (SDU)

Source: Transportens Innovationsnetværk, 2019

What is in this for you?

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To be a permanent member who will help manage and steer the network in its new form, you will:

- Be part of setting the agenda
- Participate in the learning
- Market your company (and yourself?!)
- Influence the short term, medium term, and long-term "*speed boats*"
- The opportunity to be a "*speed boat captain*" and find your own "*crew*" and "*fuel*"!!!
  - ***Act as a network ambassador***

The value creation test (TVC-test)

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The objective of the network should be to create value

- The value creation test (TVC-test) should ensure that we constantly ensure that value is indeed created
- Value should be defined:
  - ➢ Increased Health, Safety, Security, Environment, and Quality (HSSEQ)
  - ➢ Monetary terms
    - ✓ Increased revenue to member companies & organisations
    - ✓ Levelised cost of energy (LCoE) reductions
  - ➢ Logistics synergies
  - ➢ More standardization in the supply chain
  - ➢ Better organization of the supply chain, e.g., partnering to provide solution packages
- Concept of ”*mother vessel*” and ”*speed boats*” could be continued
  - ➢ ”*Speed boats*” to be the key vehicle to drive value creation and innovation
  - ➢ After work/”gå-hjem” meetings to expand offshore wind logistics networking

Dialogue with Reference Group members

- Ørsted
- Siemens Gamesa Renewable Energy
- Dansk Ingeniør Service
- MHI Vestas Offshore Wind
- NorSea Group/NSG Wind
- House of Energy
- Energy Innovation Cluster
- BBC Chartering
- Head Energy
- Port of Esbjerg
- DHL
- Danish Shipping
- FTI
- Port of Aalborg
- AH Industries/Eltronic
- And…
  - ➢ Danish Wind Industry Association
    - ✓ Now ”Wind Energy Denmark”
  - ➢ Danish Wind Export Association

Possible member recruitment

- Danish companies & organisations
  - BMS
  - Energinet.DK
  - LM Wind Power/GE
  - Bladt Industries
  - Swire Blue Ocean
- Nordic companies & organisations
  - Vattenfall
  - Equinor (Hywind)
  - AKER Solutions
- Northern & other European companies & organisations
  - DEME Offshore (following Feb. 2019 integration of DEME subsidiaries A2Sea, EverSea, GeoSea, Tideway)
- Plus from other countries (short term, medium term, long-term country list)
- Engage embassies in overseas markets where projects are to be resolved

Add:
- Short term: Norway, Sweden
- Medium term: Germany, Holland, Belgium, UK
- Long term: China, Taiwan, Japan, South Korea, USA

Synergies | Europe | Nordics

- Norway (e.g. via Norwegian Energy Partners (NORWEP))
  - Wave of diversification from offshore oil & gas industry to offshore wind
  - Synergies: Oil & gas, subsea, floating, access to financing (willingness to invest in offshore wind)
  - Overlaps: Logistics, shipping
  - Cultural proximity
- Sweden
  - New pro-offshore wind government, new legislation
  - Anticipation of more offshore wind projects in the Baltic Sea
  - Vattenfall (developer very active in DK offshore wind), Trellborg (cable protection)
  - Cultural proximity

Synergies | Europe | Northern Europe (I)

- Benelux countries (Belgium, the Netherlands, and Luxembourg)
  - ➢ Track record: Leading industry EPCi players
    - ✓ Belgium:
      - DEME Offshore (following Feb. 2019 integration of DEME subsidiaries A2Sea, EverSea, GeoSea, Tideway)
    - ✓ The Netherlands:
      - Van Oord, Boskalis, Fugro
    - ✓ Luxembourg:
      - Jan de Nul
  - ➢ Growing home market
    - ✓ O&M opportunities

Synergies | Europe | Northern Europe (II)

- Advanced offshore wind markets
  - ➢ Germany
    - ✓ Strong supply chain, sub-suppliers
      - E.ON, EEW
    - ✓ O&M, Decomm opportunities
  - ➢ UK
    - ✓ Strong supply chain, sub-suppliers
    - ✓ O&M, Decomm opportunities

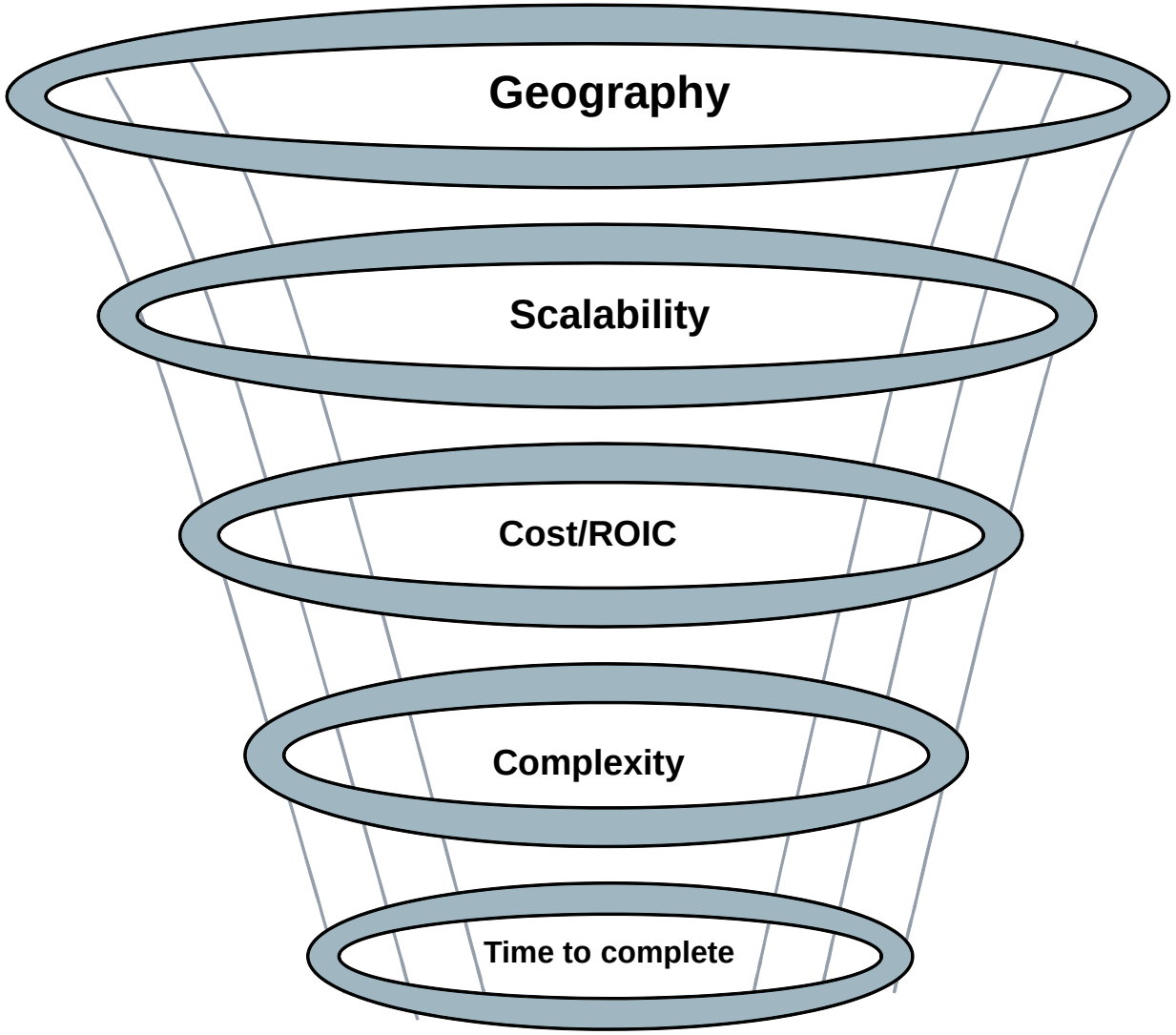
Synergies | Europe | Other Europe

- Atlantic Ocean
  - France
    - ✓ Opportunities across all life-cycle phases
    - ✓ Floating technology market opportunities
  - Spain
    - ✓ Supply chain
    - ✓ Floating technology start-ups
  - Portugal
- Baltic Sea
  - Poland
  - Estonia
- Mediterranean Sea
  - Turkey

Synergies | Outside Europe

- And farther away:
  - ➢Initially companies with subsidiaries/representatives present in Denmark
  - ➢China
    - ✓Opportunities across all life-cycle phases
    - ✓Envision Energy, Goldwind, Shanghai Electric represented in Denmark
  - ➢Taiwan
    - ✓Opportunities accros all life-cycle phases
  - ➢Japan, South Korea, USA
    - ✓Opportunities across all life-cycle phases
    - ✓Floating technology market opportunities
  - ➢India
    - ✓Opportunities across all life-cycle phases
    - ✓Suzlon, L&T Group

Project selection funnel - prioritization



Value creation?

Geography:
- Short term participants: Norway, Sweden
- Medium term: Germany, Holland, Belgium
- Long-term: UK, China, USA

Timing/pipeline of projects:
- Within 2 years: Fast moving ”*speed boats*”
  - Value creation within 2 years
  - Some projects ”completed” within 2 years
- Medium term: Projects started
- Long-term: Early project efforts initiated

Options on how to manage?

- Through a member association (like TINV)
  - Example Maritime Development Center (MDC) managing secretariat for TINV
- Privately funded
  - Projects
  - Secretariat
- Appoint a secretarial ”cluster”
  - MDC

Private funding options

1. We contribute our time; time has a value
2. Membership fee
3. Shared fee
4. Cost per ”*speed boat*”
5. TVC test!!!

Continuation of the PhD Reference Group

- Purpose?
- Scope?
- Members?
- Geography?
- Focus?
  - ➢Work on projects
  - ➢Networking only



”*Speed boats*” and number of projects targeted

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”*Speed boat*” types:

- Wind turbine installation vessel (WTIV): moves slow, long-term 1-2x
- Service Operations Vessel (SOV): medium term 3-4x
- Crew Transfer Vessels (CTV’s): fast, short term Many

What is achievable during the 2-year period?

Project catalogue – examples from dialogue

- Create a ”global logistics hub” building in select markets:
  - Taipei, Seoul, Tokyo, Boston, NY-NJ, etc.
- Taiwan vessel flag conference
  - Authorities, ship owners, and other key stake-holders in TW market
- New offshore wind markets of South Korea, Japan, and India
  - Joint logistics task force?
- Logistics decision support
  - How to set up and orchestrate the supply chain strategically incl. options
- Tools for supply chain development
  - How to set up a supply chain from scratch, in part or in full (local content)
- Global supply chain design ”black box” plug’n’play set-up
- IT ERP system for logistics (daily operations)

Project catalogue – Ørsted ideas

- Ørsted could not attend and suggested several ideas:
  - Autonomous vessels
  - Green fuels
  - Asia-Pacific market entry
  - Logistics for floating offshore wind foundations
- Danish Shipping could not attend and is engaged in offshore initiatives on a pan-European basis through their European shipowners' association (ECSA)
  - Sees potential synergy with this Group/network

Cross-learning 1: Other industries

- Other industries:
  - Oil & gas
  - Shipyards
  - Airplane
  - Truck assembly
  - Fiber optic cables
  - Composite

"Speed boats"?

Cross learning 2: Mature to emerging

- Denmark (full supply chain)
  - Competencies in the supply chain is focus (not ownership of company)
- Europe (e.g. Van Oord, DEME Offshore, Jan de Nul, Boskalis, etc.)
- Globally emerging new markets:
  - Europe: Poland, Turkey, Spain, France, etc.
  - Asia-Pacific: China, Taiwan, Japan, South Korea, India, Vietnam, Australia
  - Americas: USA, Canada, Brazil

”*Speed boats*”?

Interest logged by DTU

Create joint industry project (JIP) between Technical University of Denmark (DTU) and industry to focus on Logistics

Advantages

- Access to public funding
- Knowledge management
- University student access

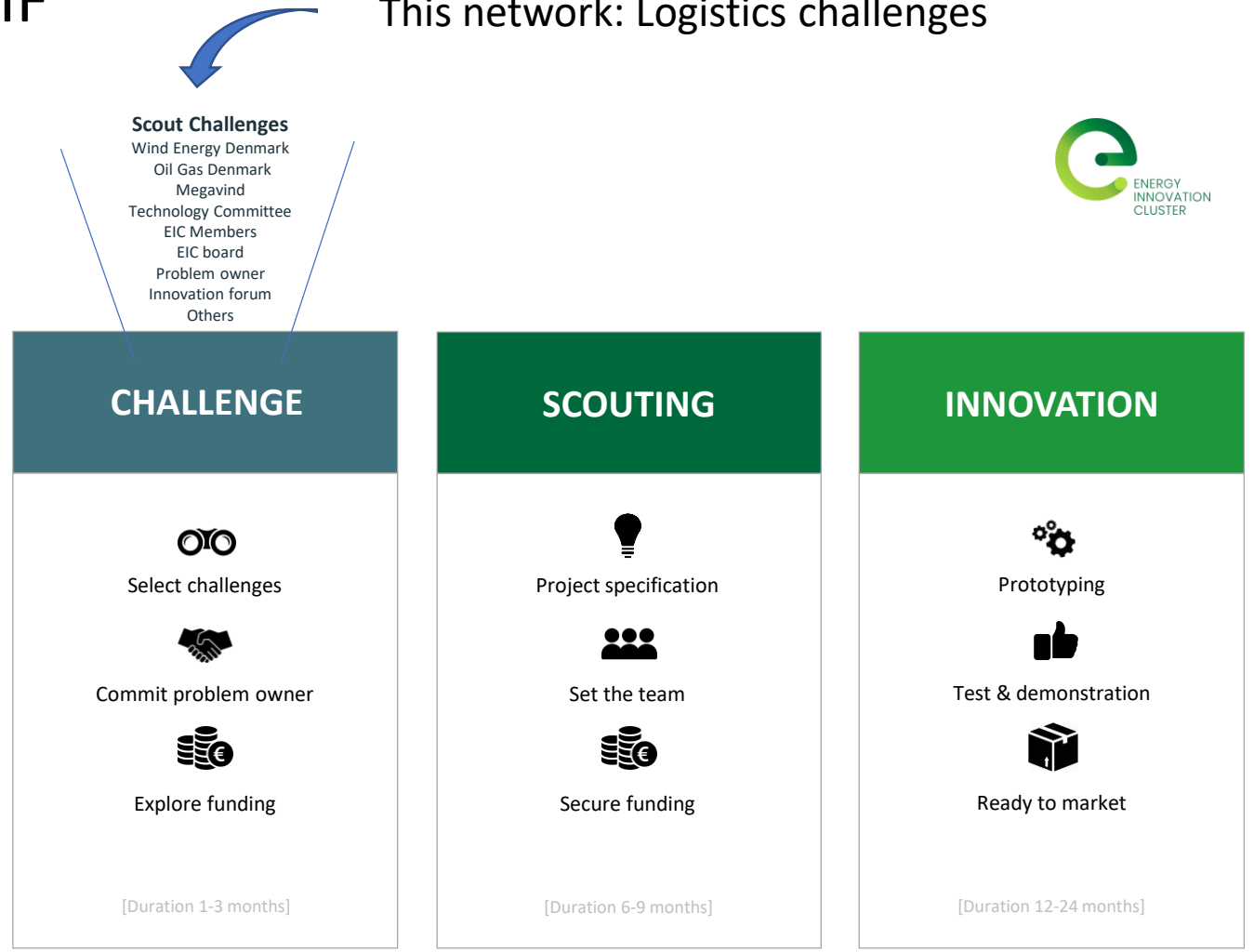
Disadvantages

- Competitors work together
- Long duration
- Academic vs industry KPIs

Project progression models

- Energy Innovation Cluster – CRIF
  - ➢Identify project
  - ➢Follow template
  - ➢Board approval
  - ➢Funding
  - ➢Assignment of project manager

This network: Logistics challenges



Source: Energy Innovation Cluster, 2019

Brainstorming session

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”*Speed boats*” we would like

- Good opportunities
- Synergies
- Stronger united than individually

”*Speed boats*” we do not want

- No value
- Irrelevant
- Competition prohibitive

Brainstorming session

- Which kinds of projects should the group work on?

- Please come up with examples of meaningful logistics projects:
  - ➢Why relevant?
  - ➢What is the goal (lower cost, improved safety, better quality, etc.)?
  - ➢How to get there (innovation, process improvement, etc.)?
  - ➢How long does it take?
  - ➢Complexity?



Where we started: PURPOSE and SCOPE

- Continue as is:
  - A value chain network meets from 1200-1600 to review offshore wind logistics matters from the ”*mother vessel*” and launch ”*speed boats*”
    - ✓ For industry, by industry
      - No academic goal
  - The doors are opened for an after work/”gå-hjem” networking event afterwards
    - ✓ At 1600 pm
      - Hosting company makes initial presentation
      - Thomas Poulsen supplements (representing the Reference Group)
      - Q&A
    - ✓ 1730 pm refreshments/networking
- Or the networking part only
  - This is the ”minimum” needed by TINV to be the platform

New name of the network

Brainstorming

- New purpose decided
- TVC test important
- Network focus



Wind Industry Logistics

Topics of the afternoon after work/”gå-hjem”

- Globalization
- Logistics
- Digitalization

Future after work / ”gå-hjem” topics defined by:

a) Reference Group decides

b) Hosting organization (interesting contents, not ”commercial”)

Thank you for your contribution and participation!