Benefits of Offshore Wind Industrial Clusters on Lowering Cost of Energy

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Agenda

- What is an industrial cluster?
- What is the Benefit?
- Precedents and examples
- What triggers a cluster?
- Potential for UK
- Conclusions

What is an Industrial Cluster?

- ***Wiki:***

"The term **Economies of Agglomeration** is used in urban economics to describe the benefits that firms obtain when locating near each other ('agglomerating'). This concept relates to the idea of economies of scale and network effects. Simply put, **as more firms in related industries cluster together, costs of production may decline significantly** (firms have competing multiple suppliers, greater specialisation and division of labour result). **Even when multiple firms in the same sector (competitors) cluster, there may be advantages because that cluster attracts more suppliers and customers than a single firm could alone**. Cities form and grow to exploit economies of agglomeration"

What is an Industrial Cluster?

- **Typical Cluster Types →**
  - Co-location
  - Co-operation
  - Co-ordinated

- **Co-Location**
  - Multiple supply chain elements are located in a similar location due to its suitability for supply delivery (ie, Bremerhaven, Filton/Bristol)
  - No direct interaction between companies
- **Co-Operation**
  - Supply chain elements are located together, and work together on some elements of operation to achieve an overall optimisation for customers eg, Logistics using a shared/3rd party operated warehouse/supply solution
- **Co-Ordinated**
  - Supply chain elements and OEM's work together to identify benefits, and actively work (themselves or using 3rd parties) to achieve cost reductions together

Cluster Reasoning for Supply Chain

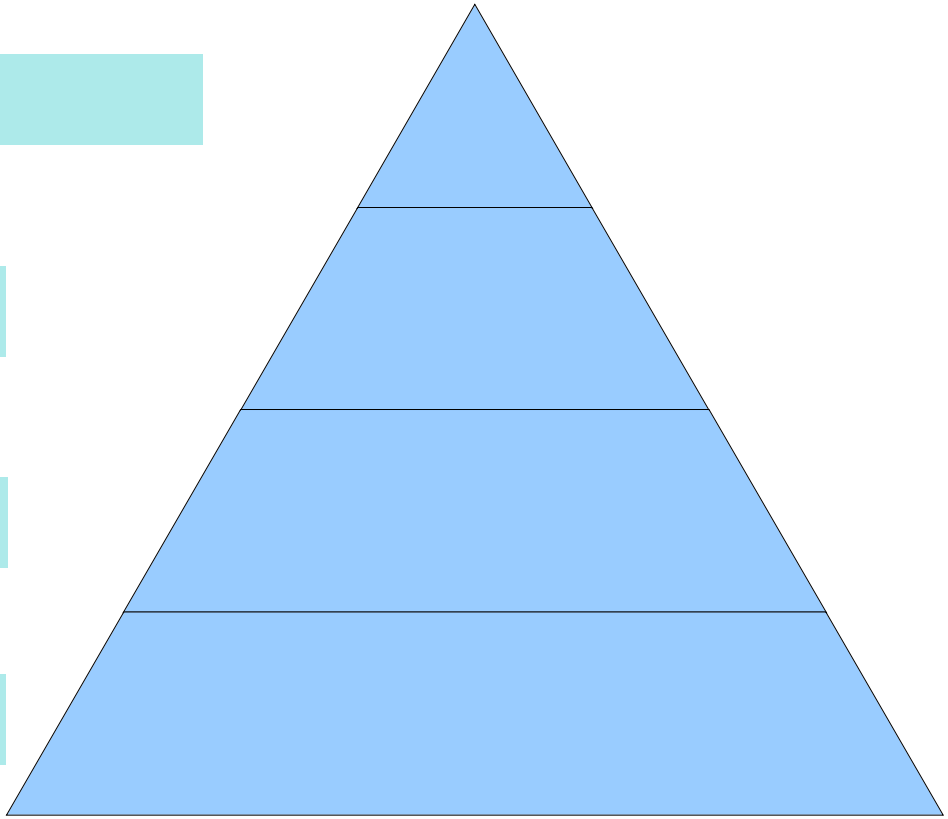
- Supply Chain "Rule of 8's" for each OEM
- For a single OEM:

OEM

Tier 1 – 8 per OEM

Tier 2 – 8 per Tier 1

Tier 3 – 8 per Tier 2



(8 Companies)

(64 Companies)

(512 Companies)

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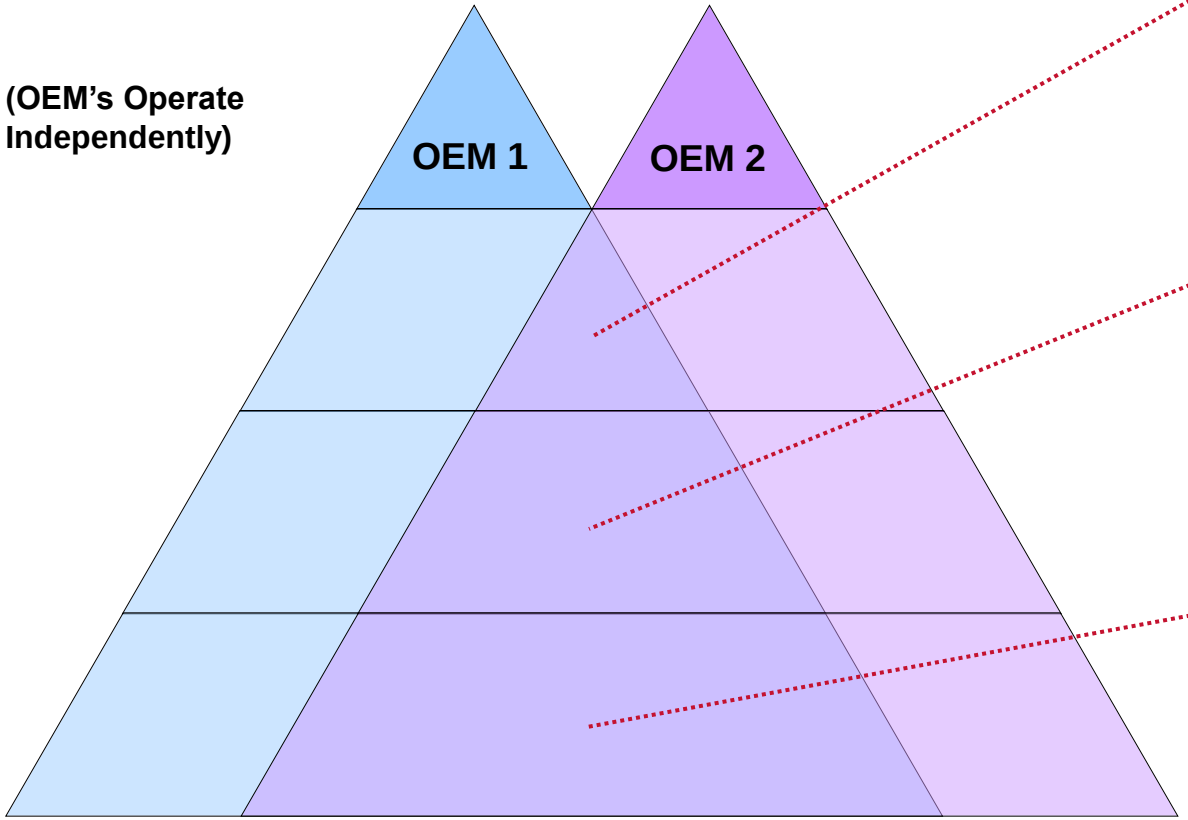
Supply Chain Cluster Potential

(OEM's Operate Independently)



Tier 1 shared supply chain could be towers, gearboxes, composites

Tier 2 would be common suppliers into the Tier 1 supply chain, who would also be encouraged to co-locate to optimise position with 2 OEM's

Tier 3 suppliers would typically have lower logistics costs – this is where potential collaboration on supply chain management could work (ie, Auto style delivery management)

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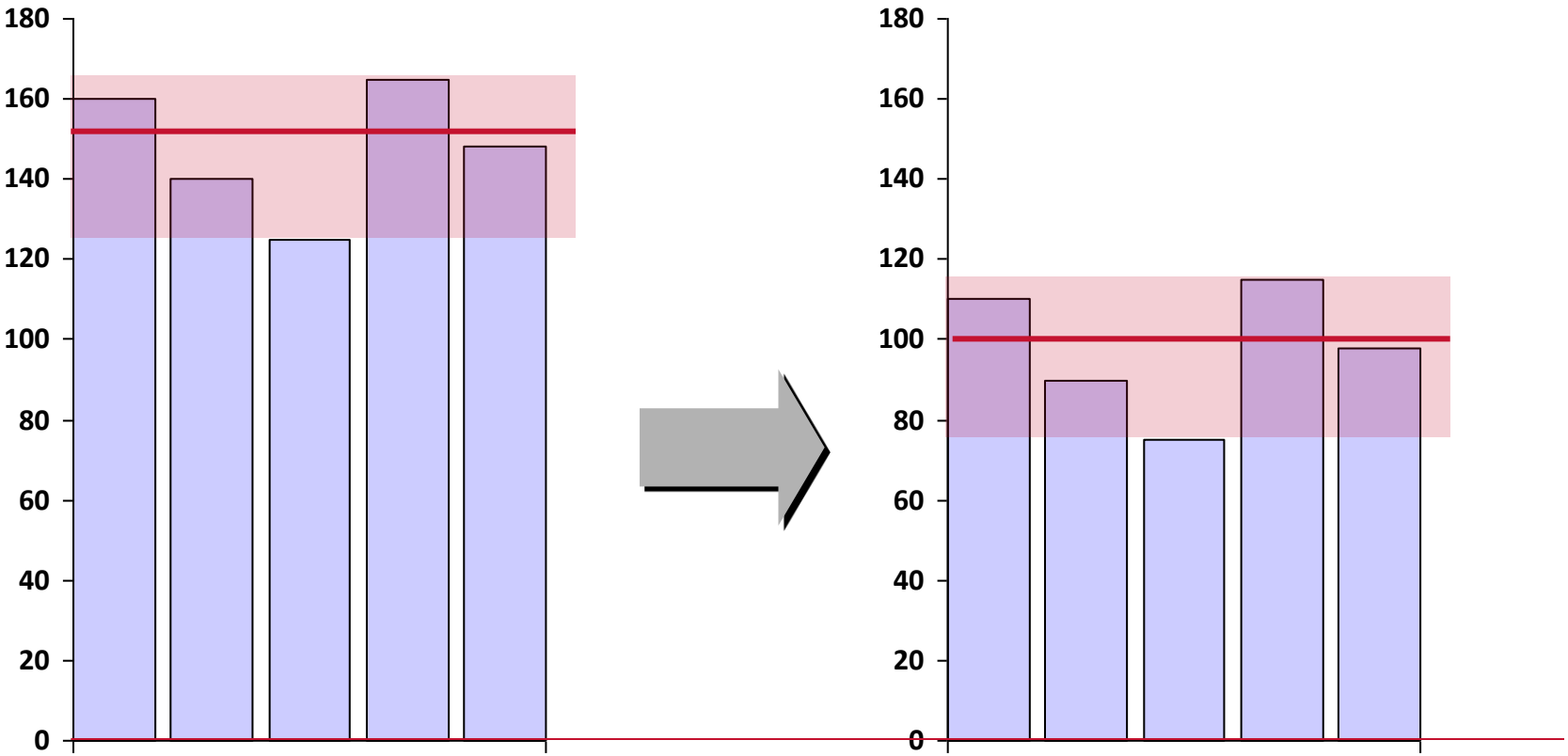
What is the Benefit?



- **"As more firms in related industries cluster together, costs of production may decline significantly"**
- **<u>Thinking as an industry</u>**

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Example: Bremerhaven

- AREVA Wind GmbH
- REpower Systems SE
- PowerBlades GmbH
- WeserWind GmbH
- PowerWind GmbH
- Deutsche WindGuard Engineering GmbH
- Nordseetaucher GmbH
- Deutsche WindGuard Knowledge GmbH
- Logistik-Service-Agentur
- EnergieKontor AG
- BLG LOGISTICS Solutions GmbH
- EOPS - Evers Offshore Project Service GmbH
- Falck Nutec A/S
- DOC Deutsche Offshore Consult

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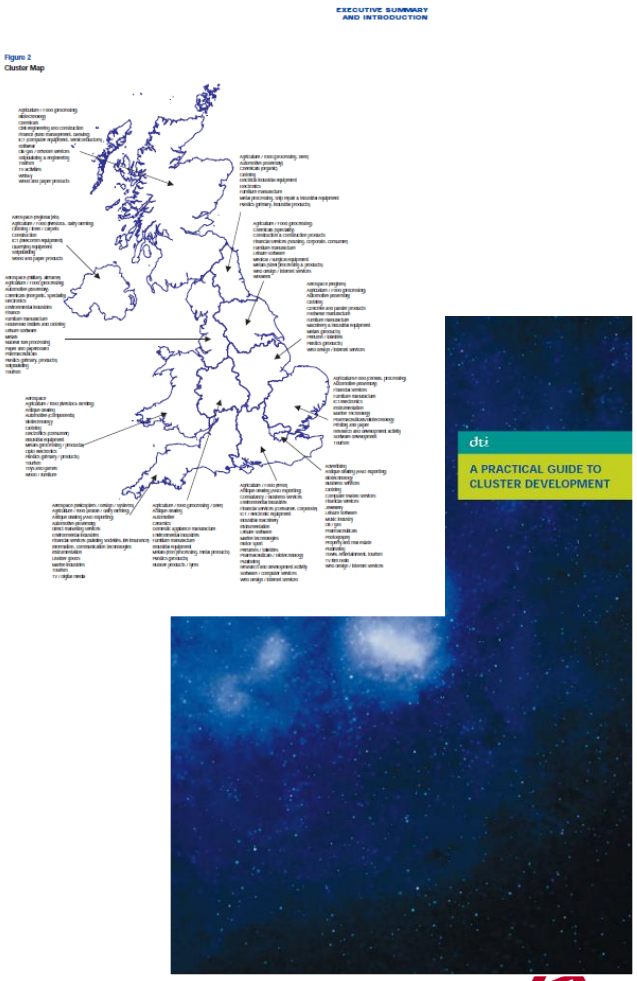
What Triggers a Cluster?

- **A stable market with clear motivation for industrial investment and employment**

- **The "Domino" Effect**
  - Requires a "trigger" to start
  - Typically slow to develop
  - Imprecise and opportunistic

- **Proactive initiatives…**
  - Government "Clusters Policy Steering Group" under Lord Sainsbury (10 years old)
  - Clear indication for RDA's to focus on delivery on clusters (1999)
  - DTI report "Practical guide to cluster development" produced in 2001



The UK Scope for Industrial Clusters

- **Positives**
  - Almost a “blank canvas”
  - A wealth of experience from other industries and markets (O+G, Aero, Auto)
  - Huge market potential
  - Potential to achieve massive cost reductions for UK projects
  - Potential to lead the way in Europe

- **Negatives**
  - Customer/Project spread
  - Land/Port pricing
  - Land availability
  - High level of “new” market entrants retains “individual competition” element
  - Difficulty fitting in with other markets due to pricing differences

Conclusions

- The UK has proven capability to manage clusters
- Benefits are clear and proven by other industries
- The Offshore Industry has a need to reduce costs
- Port and land facilities could cripple cluster potential
- Clear guidance/support is needed to develop clusters to achieve manufacturing cost reduction

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