

Facts and Figures, Clusters in Schleswig-Holstein (SH) and Hamburg (HH)

Wind energy, Renewable energies

Subject	Comments	Facts and Figures
Cluster focus		SH: Wind energy, renewable energy (bio-energy) HH: renewable energy
Type of network	Network, cluster, competence centre	network
Cluster type (I)	Technological, innovative, tertiary	Technologically, innovative
Cluster type (II)	Industry, product, technology value added chain	Technology Value added chain
Cluster type (III)	Established, growing, emerging, as vision	Networks partly established Cluster in start-up phase
Common Ground		Wind energy, renewable energy (sun, biomass)
Industries involved		Production within many industries, not explicitly identified in official statistics Mechanical engineering, electrical engineering, electrical equipment, measuring and control instruments, ...
Technologies		Energy technology, offshore technology, generator and transformer technology, sensor technology, hydrogen technology, fuel cell technology
Field of application		Production chain: conception – R&D - construction - manufacturing – assembly - installation - maintenance - energy storage and power supply (route to the consumer) Wind Energy: Onshore and Offshore
Qualifications		Wind power engineer
Adjoining clusters	Clusters or networks with overlaps	Maritime Cluster: Offshore wind power, wind power for ships
Specialization in SH and HH		SH: rather production, installation, maintenance, suppliers (wind power) HH: Planning, consulting, R&D, maintenance, supplier (renewable energy) SH is "wind energy pioneer" in Germany, but currently only ranked 4th place among the states in wind power usage (first: Lower Saxony). Currently nearly 2,600 wind turbines in SH. By comparison, about 1200 wind turbines in MVP
Specialization (research)	Fields of research	Hydrogen technology, biomass energy, offshore wind energy
Cluster-Management	Network support, cluster development transparency care	HH: Hamburg's Senate, Office for urban development and environment SH: network agency „Windkomm“ (Husum) Not yet strong linkages between SH and HH managements
	Further network supporting or cluster promoting facilities, events	Federal Wind Energy Association (regional department Hamburg) German Solar Energy Society (HH und SH) Exposition "Wind Energy", the world's largest wind en-

		ergy exposition (Husum) H2Expo (HH), exposition for hydrogen technology
Main cluster agents for a complete cluster	Key enterprises	Vestas , World leader in wind power plants (located in Randers, DK). Husum: Vestas Central Europe, Vestas Technology, additional locations in HH and Lübeck. In SH 1400 employees RePower Systems : Production, service (Husum), management (Hamburg), about 850 employees Nordex Energy (located in Kolding, DK), production in Norderstedt (Segeberg), ca. 500 employees
	Qualification and research at university	University of Kiel, University of Flensburg, Polytechnics Kiel, West Coast, Flensburg: Master's degree wind energy Polytechnic Flensburg: Renewable Energy Degree Polytechnic Lübeck: Competence centre hydrogen and fuel cell technology (KWB) Competence centre wind energy CEwind (Flensburg), connected to all universities and research institutes in SH, which are active in the field of wind energy research. Competence centre "biomass usage" (University and Polytechnic Kiel) FINO3-NEPTUN: Competence centre "Offshore wind power North Sea" (leadership: Polytechnic Kiel)
	R&D (Institutions, firms)	RePower Systems: development centre in Rendsburg Skysails (HH), towing kite system for ships
	Business and financial services	Financial institutions in Hamburg, specialization in "green projects"
	Complementary industries	Prokon Energiesysteme (wind power, biogenic fuels), Itzehoe Skysails (HH), see above. Several small and medium-sized enterprises in SH, especially on the west coast ("secondary industry", suppliers)
Cluster size (Employees and firms)		Estimated figures HH: 9000 employees (300 firms) HH: 2000 employees (100 firms)
Regional focus		SH: West Coast, particularly district Nordfriesland with location in Husum; Brunsbüttel; Femern
Regional significance		Significant for Husum and Nordfriesland, in other parts of SH with minor importance
Regional identification		most important innovative-industrial field for Husum
Competitive situation, perspectives		Fast growing segment of the economy, even globally, that means increasing export opportunities. Partially immobile production (separation of R&D and production is difficult), so still opportunities for European locations. But: strong competition from other regions (Denmark, the Netherlands, Lower Saxony, MVP). Strong dependence on leading companies based outside the region (e.g. in Denmark)
External relations		Strong connection to Syddanmark because of leading companies (Vestas, RePower).

Relationships to other parts of the Femern region		<p>German-Danish project "FURGY": Future Renewable Energy - International technology region of renewable resources</p> <p>Partners: University of Flensburg, Sønderjylland Development Corporation, Flensburg Chamber of Commerce, Syddansk Universitet.</p> <p>Building an international knowledge network in the field of renewable energy (across the Danish-German land border) - a model for cooperation along the Femern Belt axis?</p>
Further comments		<p>Complementary structures in SH and HH favour strengthening of future cooperation. Mecklenburg-Vorpommern: Hydrogen Technology (WST) - Competence centre in Schwerin, WST-Initiative Rostock: development of a network.</p>
Sources	Reports, Expertises, Internet-Information	Sources (see list): 1, 2, 3, 14.