nw texnet

advanced flexible materials

STRATEGY 2008-2011

NWtexnet Strategy 2008-2011

Section 1. Sector background:

As part of the Advanced Engineering and Materials RES priority sector, Advanced Flexible Materials (AFM) has been recognised by NWDA as an internationally competitive sector.

This strategy is intended to maintain the region's AFM sector as an internationally competitive sector in a global sense.

A review of the AFM sector was conducted by David Rigby Associates (DRA) in summer 2007, this study concluded that the sector has the potential to drastically improve GVA/head over the next five years; however, this improvement will only occur if a number of key actions are implemented.

This strategy will act as the medium-term template for these actions to begin.

The AFM sector currently employs @ 24,000, spread over 450 businesses, contributes £2.56 billion to the regional economy and is highly export focussed with 70% of turnover being exported.

The footprint of the region's AFM companies is one which demonstrates the maturity of the sector, and highlights some of the future challenges.
Many of the smaller companies were originally established as manufacturers, and still retain an element of in-house manufacturing, the percentage of in-house manufacture versus sourced product will need to change over the next three years for the sector to grow and prosper.

The DRA study shows an average AFM company in the region:

Employs 68 people
Has been established 32 years
Has a high degree of family ownership/management
Have sales of £ 7.0 million per year of which 60% is exported
Is growing at 3% per year
Has an average GVA per employee of £30,700 pa

This strategy will recognise the nuances of the sector and take these into account when producing an implementation template.

Section 2. Key strands:

1. Cluster development
2. Equipping business for global market changes
3. Development of emerging technologies
4. Act as the representative sector "voice"

STRAND ONE: Cluster development

Aim: "For NWtexnet to be the "glue" which both binds the cluster together and grows the inter-cluster linkages"

Background: The AFM sector displays many of the classic features of cluster development; high geographical density of firms, a degree of interdependence of supply, good research links, and a high level of business support and shared goals. However, DRA found that many NW companies do not "feel" part of a cluster.

Key Areas: Improving and increasing the cluster linkages, PR of the sector for the sector and highlighting areas/actions which can positively affect groups of companies.

Actions:

Publication of weekly e-THREAD
Publication of quarterly TECHNICAL THREAD magazine
Quarterly Industrial Advisory Panel meetings
NWtexnet web-site

Regular updates on relevant legislation changes, funding streams and support initiatives on a regional, national and international basis
Linking of companies together
Highlighting capability of sector both internally and externally
Specialist support

STRAND TWO: Equipping business for global market changes

Aim: "To implement actions which will contribute to a raising of GVA/head of the sector from £31k pa (Jan 2007) to £59k pa by end 2011"

Background: DRA highlighted the opportunities which exist for the sector to increase GVA per head. These actions concerned two areas; increased sourcing and improved NPD skills. Many of the larger companies in the region already source a high percentage of products and have well proven NPD routes and processes. However, there are large numbers of smaller companies who aspire to both source more products and improve their NPD skills but require a "kick-start" to begin the process.

Key Areas: Introducing highly specific training programmes to improve the sector skill levels in the two areas above. This project will embed these skills a large number of businesses and establish a train the trainer network across the region.

Actions:

(Subject to funding approval)

Implement "Advanced Skills for advanced textiles skills" development programme commencing July 2008 this three year pilot project will train 112 people in sourcing and NPD skills and write specific training modules in sourcing and NPD which can then be incorporated in NOS for NVQ level 3.

STRAND THREE: Development of emerging technologies

Aim: "To place NW AFM at the global forefront of three key technical textile developments: plasma, 3D weaving and electro-spinning".

In addition, keep the sector up to date with global technology developments through a "technology watch" programme delivered through the NWtexnet web-site on a monthly basis.

Background: Much of the current NPD within the sector is based on incremental change, this type of change can be effective and the implementation of strand 2 within this strategy will improve this aspect for firms where it is the best option.
However, the entire sector can not grow and develop on incremental change at a sufficiently high rate to continue to be classed as internationally competitive. Many firms require a fundamental step-change in technology to grow and prosper.

Key areas: NWtexnet have identified three key technologies which if adopted by the sector will increase GVA, offer high levels of PR to the sector, reduce costs of consumables and give the sector a technological "edge" in a global sense.

Technology area 1: Plasma technology.

Background: Plasma treatments for textile products are on the edge of large scale commercialisation, an independent study conducted spring 2008 by Connaugtech, concluded plasma treatments offer many benefits to NW companies both in cost savings and carbon footprint reduction.

Actions: Implement a series of trials of the different plasma technologies available, to establish the most appropriate method/s in terms of technical requirements and cost savings.
To construct a facility (possibly portable) to allow sector companies the opportunity to test their products on a commercial scale.
To establish a centre of textile plasma treatment in the region
(Subject to funding)

Technology area 2: 3D weaving.

Background: Woven 3D structures will be a key building block of the aerospace sector over the next 15 years, within the region we have a large number of companies weaving in 2 dimensions who have the technical capability to make the transition into a 3D weaver supplying the aerospace sector, using their unique skills in the development of structures and their key understanding of textile structure performance.

Actions: To take 15-20 NW weaving companies through a transformational programme from "traditional" technical textiles into an aerospace supplier working collaboratively.

This transformation will involve linking the companies with tier 1 and prime suppliers, relevant HEI's and support organisations. Through these linkages the companies will begin to engage with design, specification and procurement teams within Boeing/Airbus to become recognised as a key and unique provider to the sector.

Technology area 3: Electro-spinning.

Background: Electro-spinning is starting to move from lab toward commercilisation, the NW has the opportunity to be at the cutting-edge of this technology with its huge potential in filtration, coatings and significantly in medical textiles ;these include , engineered replacement cartilage, skin like materials for the treatment of severe burns, fibrous wound care products for treatment of chronic ulcers and skin cancers, fibrous templates which aid repair of the central nervous system and repair of retinal detachment, and engineered in-vitro cell cultures on fibrous scaffolds for drug toxicity testing.

Actions: In conjunction with STFC Daresbury establish an electro-spinning development centre to begin commercilisation of this technique, and feeding the product developments/IP into the medical textile sector. This centre will have the capability to translate early stage proof of concept healthcare demonstrators based on fibrous materials, to the point of statistically significant GMP samples for full clinical trials. Successful trials will prompt bidding from major healthcare companies for access volume manufacturing rights and deployment. Target sectors will be woundcare and tissue engineered orthopaedics, where the UK is recognised as world leading in research and manufacturing. The Institute will install the world's leading GMP process lines to generate 2D and 3D patterned fibrous structures and integrate these novel technologies with established and emerging high volume GMP manufacturing processes where appropriate.

The Institute will be 'open access' to all innovators who want to progress early stage proof of concept therapies based on fibrous structures through to the point of clinical trials. The innovators will range from clinicians, university researchers, and researchers from SMEs and healthcare product manufacturers. The institute will host a GMP manufacturing facility for fibrous materials, have on-site expertise and operators to develop translational processes and interact on a global basis to address global needs.
(Subject to funding approval)

STRAND FOUR: Act as the sector representative body

Aim: "NWtexnet will act as the strategic lead body for AFM".

Actions:

NWtexnet will engage with support organisations, HEI's, other private sector bodies and act as the key bridge between NWDA and the industry. Through existing communication routes NWtexnet will inform NWDA of sector requirements and formulate appropriate action plans.
Lobby regional and national government on behalf of the sector.
Continued membership of EURATEX (EU textile trade association) will allow NWtexnet access to relevant EU programmes.