# UNITED KINGDOM

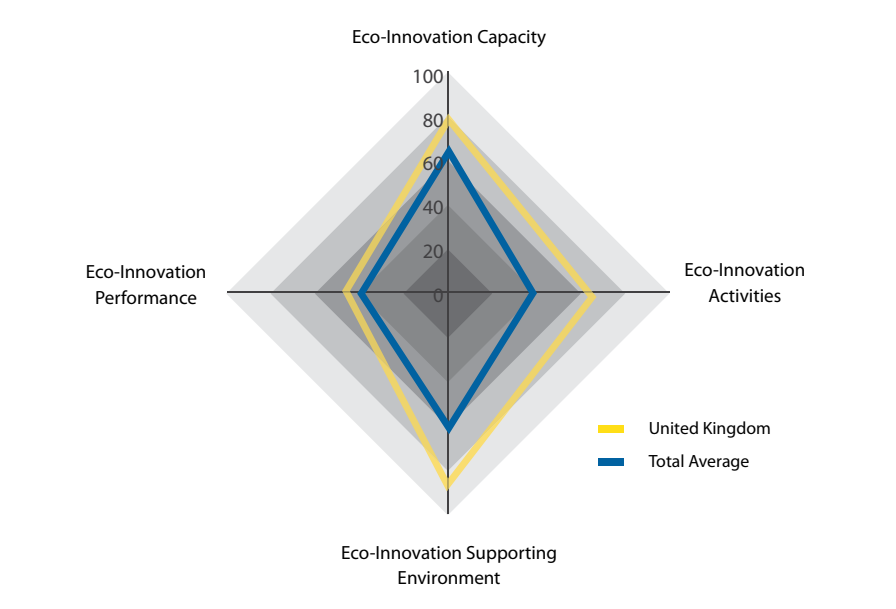


Fig. 20 Result analysis of United Kingdom

## *Country Result & Analysis*

Based on 20 indicators, which are aggregated into four criteria, the result shows overall high score (71/100) in ASEI. The UK's relatively high "eco-innovation capacity" is supported by the country's strong "economic competitiveness", high "level of general innovation capacity" and large "amount of investment capital flow in green technology industry". The UK's "eco-innovation activities" are measured with six indicators; "renewable energy utilization level", "number of green patents", "level of commercialized green technology SMEs", "green technology SMEs at early stage", "level of environmental management" and "turnover of environmentally friendly companies". The country shows high "level of commercialization of green technology SMEs" backed with large number of green technology related companies. According to the Department of Business, Innovation and Skills, there are currently around 51,600 companies in the field of green technology with respectively large number of number of employees involved, and both figures have increased in the last three years. The enterprises also take part in the country's eco-innovation activities by maintaining environmental management system. The UK scores the highest in its "eco-innovation supporting environment" which is based on "investment maturity of green technology industry", "government's R&D expenditure in green industry", "level of environmental laws" and "country's commitment to international environmental agreements". The level of UK's "eco-innovation performance" is higher than ASEM member countries assessed. The country shows relatively high scores in "green industry market size", "water consumption intensity" and "CO2 emission intensity". Overall, UK ranks well above the average on the ASEI index.

## *UK's Key Eco-Innovation Environment*

With the formation of coalition government in 2010, the UK government claimed "the Greenest Government Ever" in hopes to make transition to a green economy. Under the promotion of this campaign, the UK coalition government published the Roadmap to a Green Economy in 2011 supported by Department of Environment, Food and Rural Affairs (DEFRA), Department for Business, Innovation, and Skills (BIS) and Department for Energy and Climate change (DECCS). This roadmap set various policy tools to support the transition to a

greener economy and provides guidelines of how business should react to such implications. DEFRA, BIS and DECC are working together to ensure that there are consistent policy framework to encourage eco-innovation under this set roadmap at national level. Although there have been some setbacks due to the economic downturn, it is expected that the government will consistently promote eco-innovation through green business.

## *National Low-Carbon Strategy Promotes Eco-innovation Activities*

In November 2008, the UK has adopted a new Climate Change Act which put the government in position to set objectives and changes as needed. The government's low carbon strategy aims to reduce the carbon emission rate by 80 percent in relative to the 1990 level by 2050. Under the Climate Change Act, the UK created the Carbon Reduction Commitment Energy Efficiency Scheme which regulates companies with more than 6,000MW of electricity use to meet mandatory emission reduction rate. Another noteworthy policy seeking improvements in energy efficiency is the Green Deal, proposed in hopes to revolutionize the energy efficiency of British buildings. Green Deal is an innovative financial mechanism which allows the companies to provide consumers improvements in energy efficiency without upfront costs and let the consumers pay back through their energy bills. As for renewable energy, the UK is committed to supplying 15 percent of its energy consumption from renewable sources by 2020 with interim biannual targets.[82] To reach such target, the government has implemented a regulatory policy to support renewable electricity projects in the UK. With numerous carbon reduction scheme and policies, the country promotes low carbon technology development and the renewable energy field. This leads to increasing room for eco-innovation activities to emerge focused on energy efficiency.

## *Maturing Eco-Industry Market*

The UK's eco-innovative solutions and products are well commercialized in the UK. Due to flexible business environment and support from the government, eco-innovative solutions and products enter the market more easily than other countries. The UK government's supportive approach to promote eco-innovation within the industry includes programs and financial incentives focused on low carbon technology, electric vehicles and alternative fuel. In 2012, the UK government disclosed new funding program to support and promote development of low-carbon technologies among SMEs, including 35 million GBP for Energy Entrepreneurs Fund, 3 million GBP for heat storage innovation, and the launch of online funding navigator. In the same year, the government announced the launch of UKH2Mobility project to facilitate commercialization of hydrogen fueled cell electric vehicles. The main content of the project concerns evaluation of the potential of hydrogen fuel to be introduced in 2014-2015 including financial support of 400 million GBP. As the UK government understands the role of companies to stimulate eco-innovation activities, eco-innovation is expected to be further promoted at company, industrial and national level in the UK.

## *Plan to Foster Green Investment Bank*

As a result of the government's legal commitment following Climate Change Act, the government projected the size of necessary investments available for the next two decades ranging from 200 billion GBP to 1 trillion GBP. The UK government announced a plan to launch the first green investment bank to attract private funds

[82] *UK Department of Energy and Climate Change (2011), UK Renewable Energy Roadmap*

for the financing of the private sector's investments related to environmental preservation and improvement in 2010. The world's first green investment bank is to capitalize GBP 3 billion. Prior to expected approval of GIB in the late 2012, known as the 'incubation' phase, the government has made direct green investment through UK Green Investment team under the Department of Business, Innovation and Skills. The UK government disclosed its commitment to invest GBP 180 million on fully commercial term in waste and non domestic energy efficiency infrastructure projects. Now the government expects to obtain the European Commission's approval for state aid to the Bank by early 2013. If this Green Investment Bank successfully launches as an official body, more companies would benefit from getting involved in eco-innovation projects and more money or funding would go to companies that have the ability to produce eco-innovation products and technology solutions in the UK.

## *Eco-Innovation Case Studies*

### CASE STUDY 1

**Unilever**

**Unilever** has more than 400 brands, and its products include foods, beverages, cleaning agents and personal care products. In 2004, Unilever introduced laundry detergent, Surf Excel, targeting regions with water scarcity problems such as southern states of India, Andhra Pradesh and Tamil Nadu. By adding a number of anti-foam ingredients and yet preventing significant suppression of lather during the main wash, the company was able to create the rebalanced formulation that reduced the number of rinsing using less water. With the product's launch in India, Surf Excel has allowed to save approximately 14 billion liters of water each year. From its successful experience of creating more environmentally friendly product in developing markets, Unilever plans to use its know-how skill to expand its market in Europe and other emerging markets.

*Source: http://www.unilever.co.uk/innovation/productinnovations/default/index.aspx*

### CASE STUDY 2

**Green Biologics**

**Green Biologics Ltd (GBL)** is an industrial biotechnology SME which develops microbial, fermentation and process technology to turn readily available and low-cost waste and agricultural by-products into high-quality chemicals and fuels. GBL was listed in the 2011 Global Cleantech 100 making in the top ten cleantech companies. GBL produces butanol using the company's own fermentation process and distillation technology with industrial proven microbial strains. Through such process, the company was able to provide cost-competitive biofuels further reducing the cost. GBL does not only target the biofuels and biochemicals market in the UK but also plans to target opportunities in China, India, Brazil and US. The company has already established a strong base in China by joining partnerships with several Chinese clean technology companies in energy and biochemicals such as China New Energy, Guangxi Jinyuan Biochemical Company and Lianyungang Union of Chemicals Company. With the establishment of partnerships in China, GBL seeks support of its commercial operation in the emerging market.

*Source: http://research.cleantech.com/company/green-biologics*

## CASE STUDY 3

### Carbon Trust

**Carbon Trust** is a not-for-dividend private company, founded in 2011 in hopes to make a sustainable and low-carbon economy by helping and providing services to organizations. Carbon Trust provides advisory services to promote sustainable challenges and environmental management of companies. In addition, its Carbon Trust Standard measures the environmental footprint of organizations, products and services. With this measurement, carbon certifications and carbon labeling are issued to best practiced companies. Carbon Trust supports organizations by providing funding and loans to aid development and deployment of low carbon technology. With help of Carbon Trust's services, Dyson, a British manufacturer of vacuum cleaners, hand dryers, bladeless fans and heaters, was able to develop one of the most energy-efficient hand dryers in the world. There are around 37 organizations of which Carbon Trust is carrying out case studies.

CARBON TRUST

Making business sense of climate change

*Source: http://www.carbontrust.com*