



# Skills for Green Jobs

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## What did we set out to do?

- To identify how six EU Member States have responded to the challenges and opportunities of the green economy in their skills development strategies
- To highlight examples of good practice in skills needs identification and skill response strategies for green growth across three different 'types' of occupation:
  - 'new green jobs',
  - existing occupations requiring a greening of skills, and
  - those jobs which appear to be in structural decline, whether this be as a result of environmental policy or not

## The 'green' economic stimulus packages provided by MS are similar...

- In 2008-2009, FR, UK, ES and DE all introduced 'green' economic stimulus plans costing the equivalent of 1-2% of GDP
  - DK and EE had no explicit national economic stimulus package
- The core to all recovery plans was the promotion of CO2 savings & energy efficiency, with special focus on:
  - Construction (building insulation), renewable energy, low carbon transport, automotive sector (e.g. scrappage schemes)
- Focus of stimulus plans reflected the major contributions these sectors make to carbon emissions (e.g. **transport** responsible for 39% of Spain's energy consumption; 45% of UK emissions from **buildings**)

## Climate change remains at the heart of environmental concerns across the MS...

- Most national priorities are directly linked to adaptation and mitigation of climate change
- Fears over energy supply dependency on foreign sources and increasing awareness of the need to reduce energy consumption and carbon emissions driving forward development of alternative energy sources
- Some MS environmental challenges are much more context-specific – e.g.
  - water shortages in Spain (AGUA programme introduced in 2006 to increase water resources and improve management),
  - high levels of air pollution/emissions caused by mass dependence on oil shale in Estonia (National Energy Technology Programme 2008-2013 sets out objectives for technological development of oil shale cluster)

## Integrating skills response strategies within wider environmental policy is generally weak...

- DK: no overall skills strategy formulated as part of a policy response to climate change / environmental degradation
  - although strategy to reduce energy consumption in buildings was followed up with a skills response
- FR / DE / EE: have not yet incorporated skills response strategies
- UK: 2009 National Skills Strategy to focus skills provision on sectoral skills needs in low carbon industries and 2009 HE Strategy to review how Government and HE can support low carbon employers in boosting higher level skills needs
- ES: Spanish Climate Change and Clean Energy Strategy (EECCEL) includes certain technical skills training programmes for green tech

## It isn't necessarily about teaching an old dog new tricks...

- The consensus across MS is the same: many of the skills required for the transition to the low carbon economy are **not new** – in FR, the Ministry of Environment takes a prudent approach:

*“very few jobs today are based purely on new competencies”*

- The range of occupations across all three categories (new, existing, declining) require both **a mix** of new and current technical competencies, as well as strong ‘generic’ skills
- Generic skills such as leadership, management, communication, financial and inter-disciplinary knowledge are equally as important in supporting the transition and **must not be under-rated**

## Anticipating skills needs for **green** jobs remains a pretty ad-hoc affair for some...

- FR: every sector required to create an Observatory for employment and training forecasts to help social partners to make decisions on employment and training policies; most tools used to determine training needs are at regional level
- ES: mix of actors is responsible for identifying skills needs; employees make demands to trade associations or unions for certain training, or companies identify training needs; regional government bodies also undertake studies on skills needs, esp in the RE sector
- DK: primarily the responsibility of trade committees, based on labour market information or external studies . Regional bodies also play major role, often undertaking surveys of local employers to understand skills needs
- EE: national ministries (e.g. Ministry of Economic Affairs and Communications) prepare labour demand forecasts and update annually, but degree to which this is related to 'green' skills needs is uncertain

## A mix of generic and technical are crucial, but shortages remain...

- A good example of the need for a 'blend of both' is in the construction sector: not only must a building service technician comply with energy efficiency building regulations; he must also be able to inform building users about climate-friendly consumer behaviour (DK), i.e. facilitating behavioural and cultural change
- Science, technology, engineering and mathematics (STEM in the UK) skills – crucial to design, development and implementation phases and more technical occupations - remain **weak and declining** in certain MS, where they are losing popularity as a subject (UK, DE, DK)
- Commercial expertise, interdisciplinary knowledge on exploitation of 'green' growth opportunities and risk management remain in short supply



## The most effective skills development responses have been those with a **joined-up** approach

- Approaches at different levels have different characteristics:
  - **Country level** - high level strategies which recognise the need to reduce CO<sub>2</sub> emissions and take-up of other green initiatives (inc. raising awareness and education)
  - **Sector level** – specific initiatives for training/upskilling, especially in those industries which have a substantial carbon footprint
  - **Company level** - anticipating increased demand for high level skills, particularly to support technology research, development and deployment
- Good practice is often characterised by **partnership**: e.g. design of course for solar energy installations project designers was result of collaboration of public regional enterprise (Fonama) and sectoral companies sitting on expert panel (ES)

## Regional level appears to provide an effective response to needs

- **Bottom-up** processes have been identified as the principle mechanism of defining needs – with employers and local/regional authorities working to formalise emerging skill requirements
- Municipalities and regions pro-active and effective in identifying skills needs and setting up the right skills responses:
  - **Extremadura** Employment Regional Service (Sexpe) took responsibility for identifying skills needs for solar energy designers and led the skills training for solar energy installations (ES)
  - Region of **Northern Jutland** provided assistance to municipality of Frederikshavn in identifying maritime sector skills profiles and needs, through interviews with representatives, conferences and business surveys identifying future skills needs for the sector (DK)
  - **Ile de France** region recently launched inter-regional initiative to exchange good practices and experiences in providing green jobs training and anticipating needed competencies, with support of sectoral branches and key employment stakeholders, Pôle emploi (FR)

## Are the responses fit for purpose?

- Broad mix of initiatives are taking place, with industry playing a more prominent role in some MS compared to others
- In some MS, the **'machine' is already well set-up** to respond to demands, having embedded skills development responses for green jobs within the wider education and training framework for decades (e.g. DK / DE). In these cases, however, effectiveness becomes more a function of how well national systems react to needs
- **Interesting industry-regional collaborations** appear to be particularly effective in meeting skills needs, and are both relevant and well-organised in most cases (e.g. FR – Heuliez and Poitou Charentes, UK – Nissan and the North East)
- Some responses have **yet to fully implemented** and are just starting off – is therefore too early to say (e.g. DK, EE, ES)
- Assessment of the effectiveness remains **one of the trickiest aspects** of the study; much is based on feedback from those who have received the training

# A selection of best practices from the case studies



## New green jobs – Energy Auditor, Estonia

- 2009 national requirement that all buildings and apartments sold or bought required energy certificate
- 2008 – task force established at EQA to develop professional standards for this ‘new group of occupations’; list of competences drawn up for Chartered Energy Auditor occupation
- Response is provided by Faculty of Civil Engineering at TUT (Tallinn University of Technology) and modules delivered by specialists in construction, electricity, gas and water supply who have helped develop professional standards
- Most participants come from construction and energy sectors involved in heating and ventilation systems and renovating buildings
- 11 participants so far paid for by Estonian Unemployment Insurance Fund

## New green jobs – Solar energy installations project designer, Spain

- Considered 'new' occupation because solar panels are new RE source in Spain
- Construction sector formed greater links with solar energy sector largely as result of introduction of new Technical Building Code, and regional estimates are 3,000 RE specialists will be required in Extremadura by 2012
- 28 courses in the region – 125 hours in duration, training 15 workers, provided by private training centres and priority given to those with plumbing and electric installation experience (and unemployed)
- Aims to enable workers to upgrade skills to install solar panels and provide crucial administrative and entrepreneurial skills

## Greening of existing jobs – Construction worker, France

- Construction forms 4 million jobs in France and the sector is responsible for 25% of national emissions
- Most urgent priorities concern existing stock of buildings and retrofiting; launch of zero-rate loan for private owners to undertake restoration work likely to create greater demand for qualified workers
- FEE-BAT set up in 2008 to respond to Grenelle objectives (180,000 jobs related to energy efficiency and retrofiting in next 12 years)
- Gathers professionals from different occupations such as insulation and equipment to encourage exchange of experiences
- 90 centres deliver 3 short modules (2 days each) on: advising and presenting clients on techniques and processes; software to calculate energy waste; command of all techniques for installation and maintenance
- Beneficiaries required to fund only 5% of costs

## Greening of existing jobs – Carbon trader, UK

- UK Low Carbon Industrial Strategy sees financial services and carbon markets as area of growth opportunity; UK seen as having comparative advantage in carbon finance although US could pose threat if it enters cap and trade policy, creating mass market
- UK shortages in quantitative skills, business management techniques and back office compliance
- European Climate Exchange responded to demand for “top up” sector-specific knowledge through suite of education and training activities, aimed at those interested in entering carbon market or already involved
- Trading of carbon emissions not seen as new because they are bought, sold and exchanged in similar way to ‘older commodities’ e.g. oil



## Jobs in green structural decline – Automotive mechanic, Germany

- Low carbon hybrid propulsion is a growing trend in car industry
- Requires Motor Vehicle Mechatronics Technicians (MVMTs) to have good overall technical knowledge of hybrid technologies and develop new skills in this area
- BMW responded by implementing a new training module in 2009, and as good practice, integrated this directly into its dual apprenticeship as an extra module
- Module was comprehensive, covering safety concepts to hybrid and high voltage techniques and resulted in all MVMTs who complete training at BMW being qualified to work with all hybrid cars
- To be rolled out from 2010 to all BMW production plants across Germany; 100 apprentices a year to receive the training (lasts 2 weeks)
- Training ends with theoretical final exam and successful participants receive certificate
- BMW received innovation prize from Federal Institute for Vocational Education and Training (BIBB) for exemplary module and labour market relevance

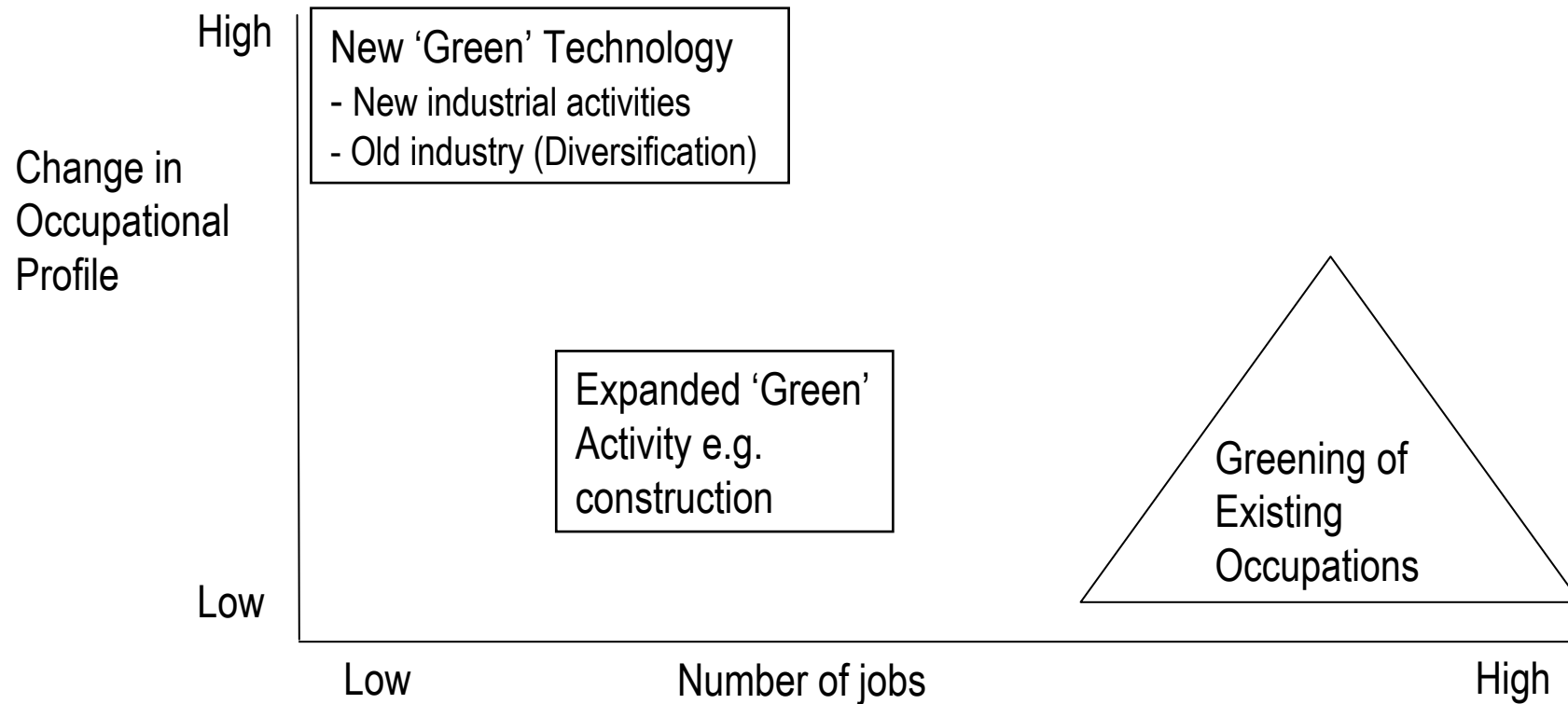
## Jobs in green structural decline – Shipbuilder, Denmark

- Danish share of global shipbuilding market declining every year as a result of competition and lower labour costs from Far East and rest of Europe
- Closure of Lindoe shipyard scheduled for 2012, estimated to lead to 8,000 jobs lost (according to Confederation of Danish Industry), affecting supply chain more widely as well
- Lindoe Forum (partnership of region and two municipalities) working on growth plan that concludes Lindoe employees can get new jobs with minimum of retraining required
- Competencies in welding, surface treatment and outfitting all seen as highly relevant to offshore RE
- Retraining programmes at both public training centres and Lindoe Offshore Renewable Centre (LORC) – established in 2010 through partnership of industry and local, regional and national actors and based in old shipyard with focus on research, innovation and development of offshore renewable energy (wave and wind)

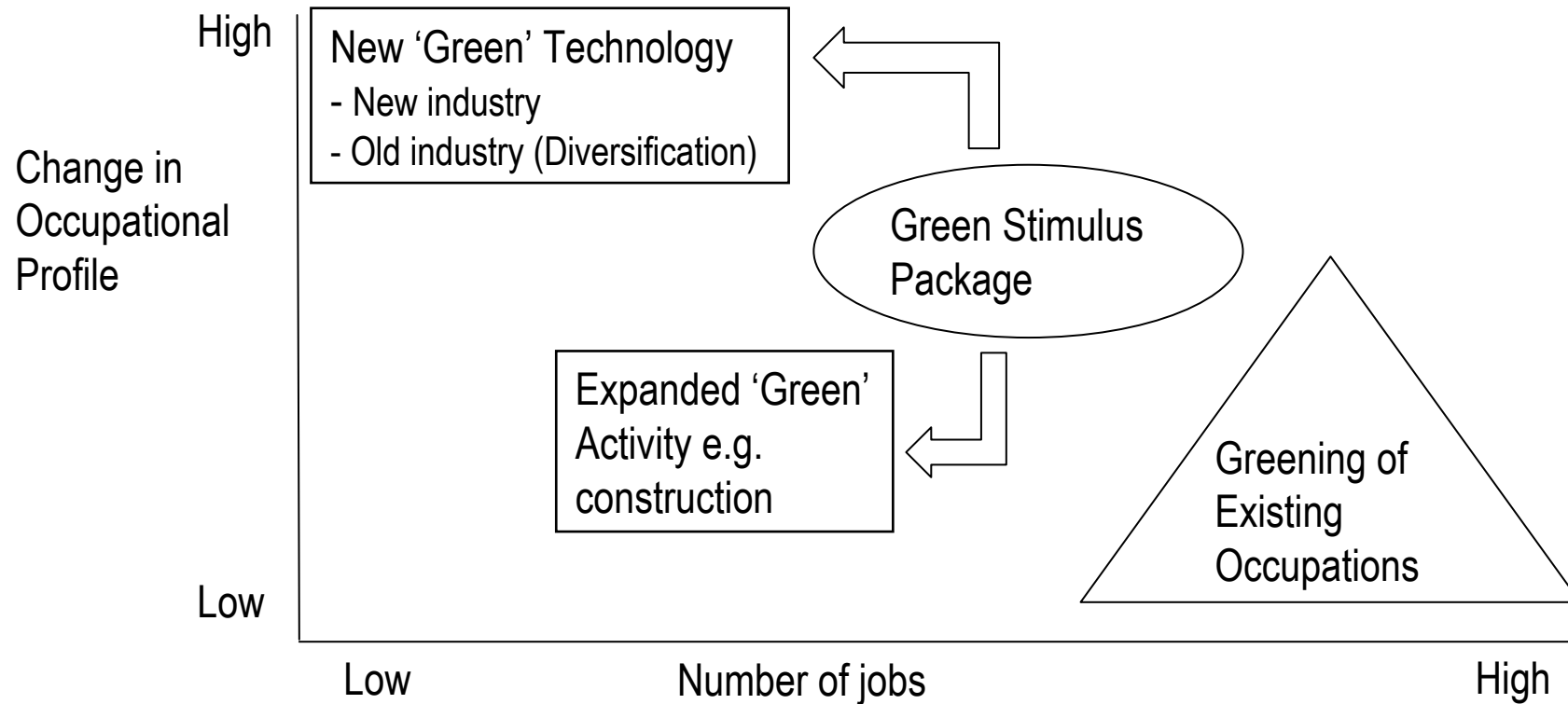
## Case studies suggest key dimensions of future policy...

- The significant growth of the RE and energy management sub-sectors may appear to give rise to ‘new occupations’, **but effective revision and upgrade of skills of existing workers** is more important and likely to be adequate to fill skills gaps in this area
- **Generic skills needs are as equally important**, insufficient technical skills are reducing capacity of employees in many MS to participate in ‘Green’ jobs
- All MS have some form of forecasting future skills needs through a mix of qualitative and quantitative methods, but **the degree to which they anticipate labour-market demand for green collar workers is varied**
- Industry-specific responses tend to be the **most dynamic and most effective**, whether this be an upskilling issue for existing jobs or for ‘green’ restructuring – responding where demand exceeds the capacity of the existing system
- Linking up industry with the education and training system, **facilitated at regional / local level is likely to make a positive difference**

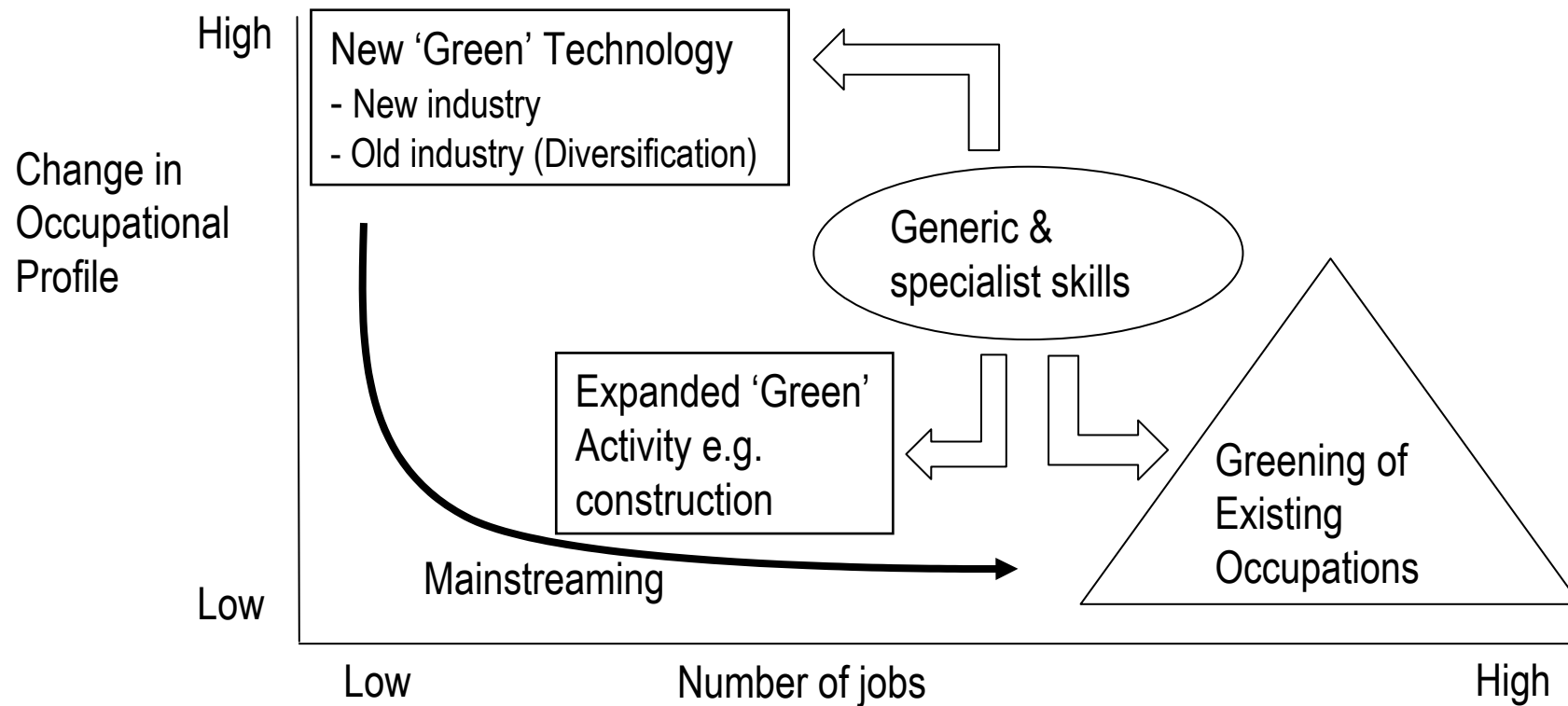
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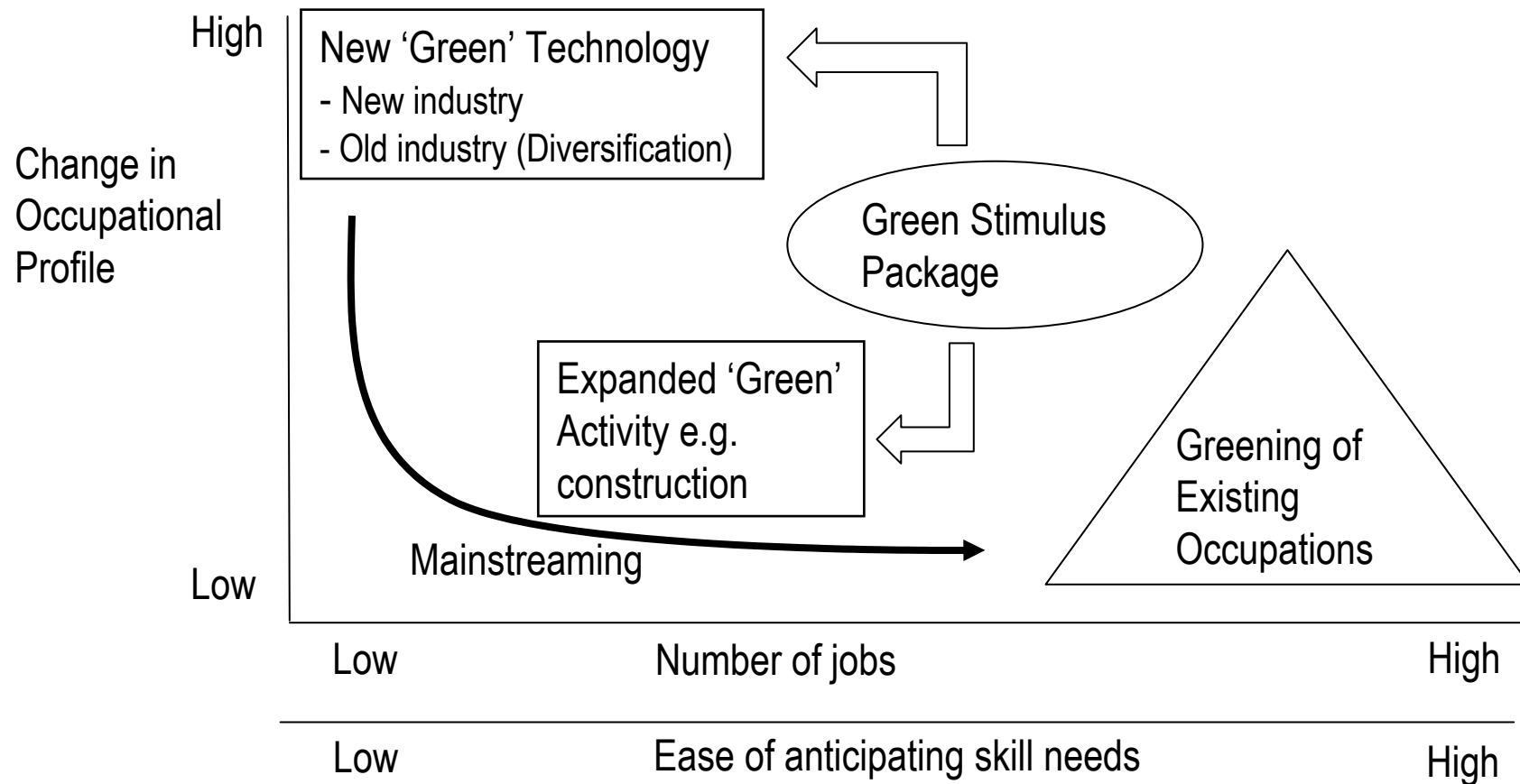
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**Thank you for your attention**



# Overview of the case studies

	MS					
	DE	DK	EE	ES	FR	UK
<b>NEW</b>						
Green Business management	✓					
Renewable energy		✓	✓✓			
Renewable energy – solar	✓			✓	✓	
Renewable energy – wind		✓		✓✓		✓
Services	✓					
Energy auditing / smart energy			✓		✓	✓
Waste recycling					✓	
<b>GREENING</b>						
Construction	✓	✓		✓	✓	
Agriculture				✓	✓	
Design					✓	
Energy auditing	✓					
Forestry / environmental management			✓			✓
Carbon trading						✓
Desalination plant maintenance				✓		
Waste	✓					
Marine technology		✓				
Power technology			✓			
Nuclear						✓
<b>RETRAINING</b>						
Automotive – low carbon vehicles	✓	✓			✓	✓
Entrepreneurs				✓		
Shipbuilding to wind turbine manufacture (diversification)		✓				✓
Chemical technician	✓					
Oil shale mining			✓			
Power technology			✓			