



# Skills Gaps in the Energy Efficiency and Renewable Energy Sector in London

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# Research Objective

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*To provide a broad understanding of the potential skills issues that may arise in relation to the energy efficiency and renewable energy sector across London.*

*Identify the skills required in the energy efficiency and renewable energy industry, as well as the capacity required in the education and training sector.*

# Methodology

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- Desk research
  - Assessment of key policy and market drivers
  - Review of learning and skills scene
- Qualitative research
  - Interviewed 75 employers and 17 education/training providers
  - Stakeholder event to test initial findings
- Data quantification
  - Ballpark figures
  - existing sources of data
  - Number of existing jobs in each sector
  - Growth expectations for jobs in each sector

# Drivers for change

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- **Energy Performance of Buildings Directive**
  - New build
  - Existing buildings
- **Building Regulations (Part L) 2006**
- **Micro-generation Strategy (2006)**
  - Inclusion in Energy Efficiency Commitment from 2008?
  - Low Carbon Buildings Programme
- **Housing Act (2004)**
  - Home sellers pack - energy performance certificates
- **The London Plan**
- **2012 London Olympics & Thames Gateway etc**
- **Energy Action Areas**

# Impacts on skills

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Building Regulations	'06 Regs	'06 Regs	'06 Regs	'06 Regs	'10 Regs	'10 Regs	'10 Regs	'10 Regs	Next Version?	Next Version?	Next Version?
Low Carbon Buildings Prog											
Microgeneration in EEC											
EPBD New Build											
EPBD Existing (Owner Occ)											
EPBD Rented											
Housing Act											
London Plan & Energy Strategy						London Plan ?	London Plan ?	London Plan ?			
Thames Gateway											
2012 Olympics											
Energy Action Areas											
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016

# Who is involved?

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- Employers
- Education and training providers
- Sector Skills
  - Sector Skills Development Agency
  - 6 key Sector Skills Councils
  - Energy issues run across 14 SSCs
- Education funders
  - E.g. HEFCE, Learning and Skills Councils
- Policy makers



# Identifying the skills needs

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- Energy skills cross traditional trades and professions
- Energy efficiency is not captured in the National Occupational Standards
- Standard Industrial Classification (SIC) and Standard Occupational Classification (SOC) do not capture this area
- Difficult to identify who should lead on these issues
- Requires cross-sectoral approach to engage all stakeholders



# What skills?

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- Design
  - Installation
  - Commissioning
  - Maintenance
  - Inspection
  - Decision making (e.g. planning, procurement etc)
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- At all levels
    - Managerial
    - Professional
    - Trade
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- And cross all disciplines
    - Electrical, mechanical, civil, surveying etc



# New practices required

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- Pre-feasibility studies of developments for Low and Zero Carbon (LZC) options
- Master planning for large developments
  - Issues of ownership, phasing, operations etc
- Developers engaging engineers early
  - Developers need a better understanding of LZC technologies and strategies
  - Many engineering consultancies are at full capacity in this area
- Planners need knowledge of the spatial implications of energy systems and its relationship to other policies
  - Planners also need support from technical energy staff
- Building Control will need to oversee installation to ensure plans become a reality

# New skills required

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- Installation of LZCs and micro-generation
- Maintenance of systems - likely to be a bigger on-going issue than installation
- Reliability of these new technologies is essential at the outset if confidence is to be assured
- How many individuals need to be trained to meet capacity and workforce turnover?



Photo: Solar Century



Photo: Imaginationsolar.com

# Data Quantification

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- Complexity of sector makes skills mapping difficult
- Forecast estimates are often not included in reports / statistics
- Difficult to assess whether the increased numbers will present a problem for each sector
- Uncertain how training / education providers will respond to forecast growth in skills needs

# Skills Data Quantification: Sectors

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- Energy Efficiency Installers
  - Gas & oil fitters
  - Cavity wall, solid wall & loft insulation
  - Glazing
  - Plumbers & HVAC installers
  - CHP
  - Electrical Trades
- Renewable Energy Installers
- Construction (other)
- Architects, Surveyors & Engineers
- Home/Energy Inspectors & Energy Advisors
- Housing (other)
- Planners / Building Control

This is not a discrete sector covered by a single Sector Skills Council or professional body

# Energy Efficiency Installers

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- Gas

- 5,300 CORGI members in London (2006)
- 1,670 achieved Energy Efficiency for Domestic Heating Installers (C&G6084) (Nov 2006)

- Cavity Wall Insulation

- About 100 installers in London - 20% turnover/year
- Additional 50-100 technicians needed to respond to EEC3 (includes loft)

- Solid Wall

- 200-300 technicians operating in London
- Additional 20-30% needed to respond to EEC3, but shouldn't be a problem

# Energy Efficiency Installers (continued)

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- Glazing
  - 3,090 installers in London (2006)
  - Expected to rise to 3,350 by 2010
- Plumbers & HVAC
  - 19,910 plumbers & HVAC installers in London (2006)
  - Expected to rise to 22,360 by 2010
- CHP
  - CHPA very concerned about skills issues
- Electrical Trades
  - 23,070 electricians in London (2006)
  - Expected to rise to 25,710 by 2010

# Renewable Energy Installers

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- No estimate of current employment
- LEP research suggests 350-500 FTE jobs could be sustained by 2010
- Report concludes that:  
*“the renewable energy installation sector can be expected to have the capacity to deliver on the Mayoral targets without generalised or large-scale public intervention on skills”*
- Does not indicate how many will have to be trained to meet 25,000 solar thermal installations by 2010
- No estimates exist for maintenance requirements

# Architects, Surveyors & Engineers

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- Architects:
  - 1,147 architect practices in London, 47 of which listed by RIBA as providing 'energy/environmental expertise' (2003)
  - 7,500 RIBA Chartered Members in London (2006)
  - Numbers expected to increase by 4% to 2010
- Building Services Engineers
  - 65,000 building services engineers operating in London (2005)
  - Expected to drop slightly to 64,600 by 2010
- Chartered Surveyors
  - 6,964 chartered surveyors in London (2003), which rose to 7,188 in 2004

# Energy Inspectors & Energy Advice

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- Energy Advice:
  - 5 EEACs in London with 2-50 staff
  - Other independent organisations
- Local Authority Energy Managers
  - Teams range from 1 to more than 10 staff
  - Tends to be relatively small turnover
- Home/Energy Inspectors
  - In disarray since July announcement that Home Information Packs not mandatory (apart from energy performance certificates)
  - Will need 6,500-7,500 inspectors nationally

# Planning and building control

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- Planning policy and control (2005-06)
  - London - 1,879 FTEs (1,929 budgeted)
  - SE 2,349 FTEs (2,555 budgeted)
- Building control (2005-06)
  - London - 662 FTEs (696 FTEs budgeted)
  - SE 607 FTEs (654 budgeted)
- London as a whole processed 86,860 planning applications in 2004-05
- Planners in London have 25% annual turnover

# Key Findings: London Development

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*There's a skills shortage because the big projects and developments in London suck up a lot of the qualified labour which creates shortages for everyone else.*

*(Electrical Contractor)*

- Concerns that exemplar projects will draw skilled labour away from other parts of London
- Only companies working in the Olympic / Thames Gateway / Energy Area boroughs see them as an opportunity

# Key Findings: Skills Gaps

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*[The number of staff] will have to increase, but where they come from is anybody's guess. They'll have to because there are new statutory duties, but there's a difficulty recruiting now.*

*(Planner)*

- 79% said staff numbers will increase in next 5 years
- 54% cope with skills gaps by restricting business opportunities
- Difficulties in recruiting skilled /experienced staff
- Particular gaps for engineers, surveyors, energy auditors and architects

# Key Findings: Training Needs

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*The main problem I think is in schools and educational services. They don't promote engineering or any craft industries as a career choice.... Lots of college courses have closed down as well so those who do want to pursue an engineering career don't have the local colleges to go to.*

*(HVAC Installer)*

- Need clear career paths to encourage newcomers
- Key areas of training need are technical knowledge, legislation and general energy efficiency awareness
- Different training strategies depending on company size

# Key Findings: Obstacles to Training

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*It's finding the time to send the guys. I have to pay their wages to learn and they're not earning me money in return while they're on these courses. In the long term though, it's a good investment.*

*(Domestic Heating Engineer)*

- Time (including travelling)
- Cost (including opportunity cost)
- Quality of training
- Information

# Key Findings: Training Growth

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*The short courses have been a big growth area, driven by legal requirements - and are continuing to grow (for example Part F ventilation and Part L energy efficiency)*

*(College of Further Education)*

- 66% have expanded their range of courses in last 5 years
- Respond to clear demand identified and expressed by students
- Funding mechanisms depend on current demand, not future growth
- Difficult to plan new courses without secure resources for high quality delivery

# Key Findings: Training Limitations

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*There needs to be a way of getting all the colleges together to share the work out across London, to stop unnecessary competition and to rationalise provision.*

*(University)*

- Majority of training providers are operating at full capacity - some report significant waiting lists
- Lack of qualified staff is seen as key inhibiting factor - 50% have difficulties recruiting staff
- Reduction in technical and engineering courses in London and SE especially at Further Education level
- Expansion in provision mainly at Masters level
- Linkages across the supply chain are uncertain, and engagement with Sector Skills Councils is patchy

# Recommendations: Skills 1

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- Feed into the work of the London Skills and Employment Board
  - Key area of cross-working with the GLA
  - Help ensure that the energy efficiency and renewable energy sector are fully included in the Board's work
  - Engage with myriad of Sector Skills Councils with energy efficiency / renewable energy responsibilities

# Recommendations: Skills 2

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- Establish an Energy Trainers' Forum for London
  - Bring together Sector Skills Councils, training/education providers, professional bodies and funding bodies
  - Regional lead; co-ordinated approach
    - Support the work of the Skills Board
    - Promote the skills needs of the new Energy Strategy
  - Opportunity to work closely with LDA on green skills

# Recommendations: Skills 3

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- Contribute to development of training and qualifications for Domestic Energy Assessors
- Roll out and extend energy efficiency / renewable energy training for planners

# Recommendations: Support 1

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- Actively contribute to the Mayor's new statutory Climate Change and Energy Strategy
  - Another key area of cross-working with the GLA
  - LEP represents wealth of expertise and knowledge
  - Needs to be well-promoted
- Communicate with London's energy efficiency and renewable energy employers about regional strategies and initiatives

# Recommendations: Support 2

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- Encourage partners to respond to consultations on the development of the Building Regulations
- Establish close links with the London environmental business support network
- Encourage London employers to go beyond minimum standards
- *Work to 'mainstream' energy efficiency into every day working practices*

# Issues

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- Analysis is not yet available for the number of jobs arising from specific policy measures
- Education and training providers cannot plan for new courses or changes in capacity
- Market led approach to capacity building cannot deliver future needs
- When current planning applications move to execution will there be enough people to deliver?

# Some key recommendations

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- Set up an Energy Trainers Forum
  - Planning capacity
  - Sharing resources
  - Developing expertise
  - Signposting/marketing courses
  - Needs a host organisation/secretariat/funding
- Engage with the London Skills and Employment Board
- Extend energy training for planners
- Input to the Mayor's new Climate Change and Energy Strategy
- Employers need to know more about regional strategies
- New and renewable technologies and energy efficiency should be mainstreamed

# Conclusions

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- Comprehensive data is needed to assess growth in jobs and course provision to meet this
- Training and education capacity will need to grow
- Decline in engineering courses in London and SE especially at further Education level
- Planned approach is required if the potential is to be reached
- Someone needs to take the lead
  - London Energy Partnership?
  - Skills and Employment Board?
  - RDAs
  - Professional bodies?

# Skills for a Low Carbon London: Summary Report and Recommendations on the Skills Gaps in the Energy Efficiency and Renewable Energy Sector in London

