Green Finance and Green Jobs

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1st April, 2014, UK Energy System in Transition: Technology, Infrastructure and Investment
Edinburgh Centre for Carbon Innovation

Green Finance

- What is the size of the 'investment gap'?
- Low-cost sources of finance, and prospects for scaling these up
- New sources of finance
- Policy options

Based on:
"Financing the UK Power Sector: Is the Money Available?"
W. Blyth, R. McCarthy, R. Gross
Working Paper, UKERC Uncertainties Project.

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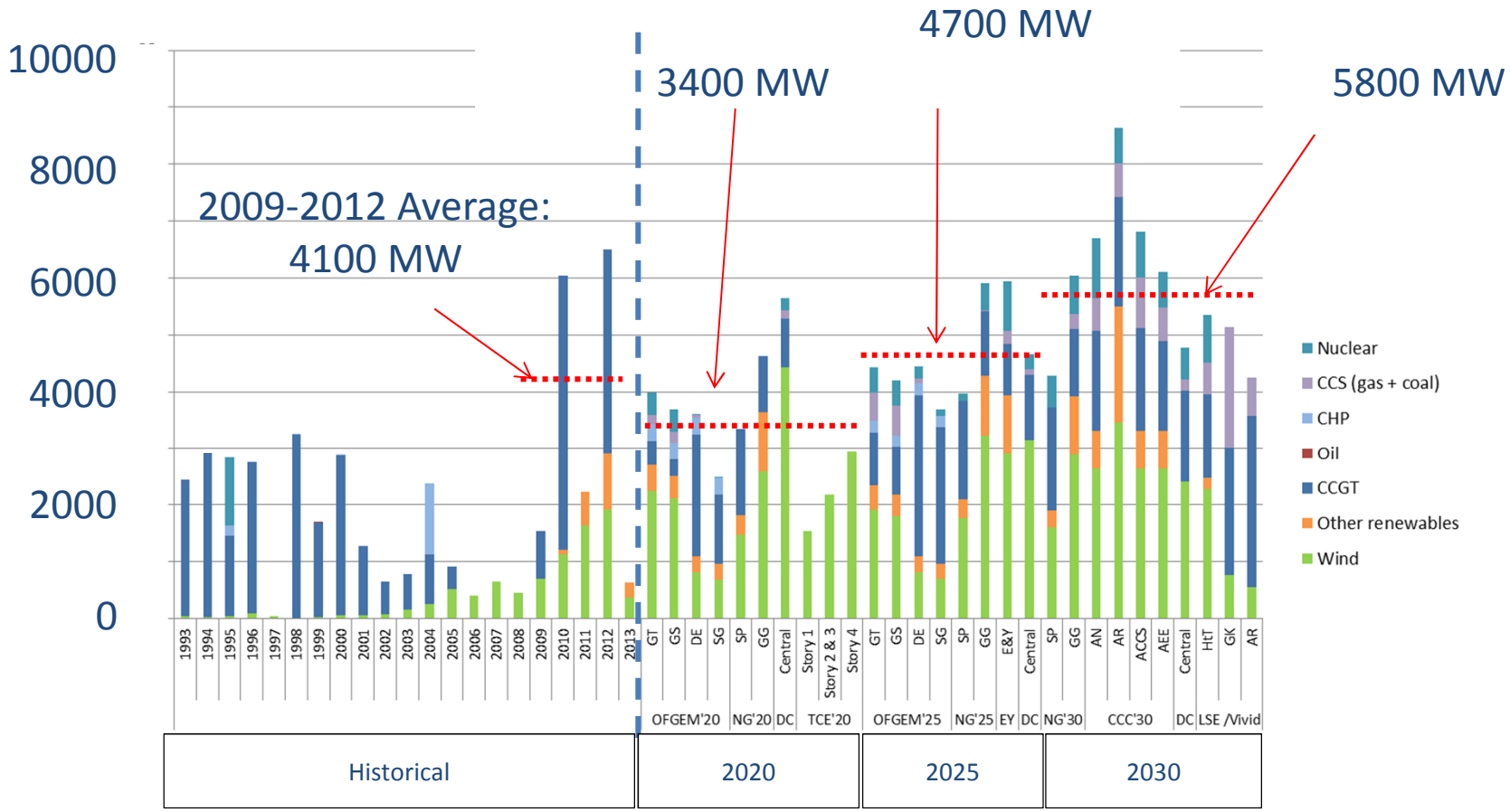
‘Investment Gap’ Annual Build Rate MW



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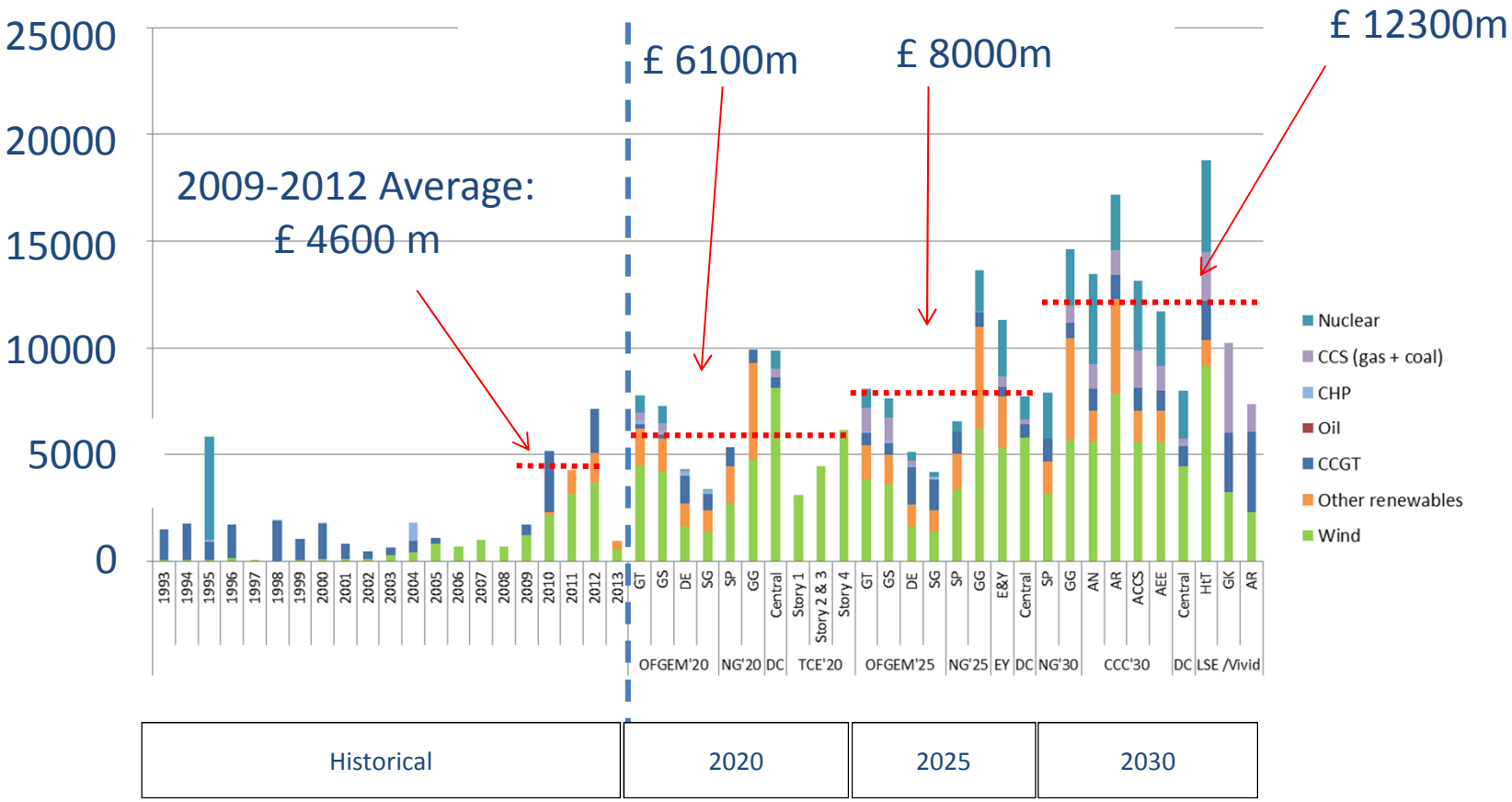
Annual UK CAPEX £m



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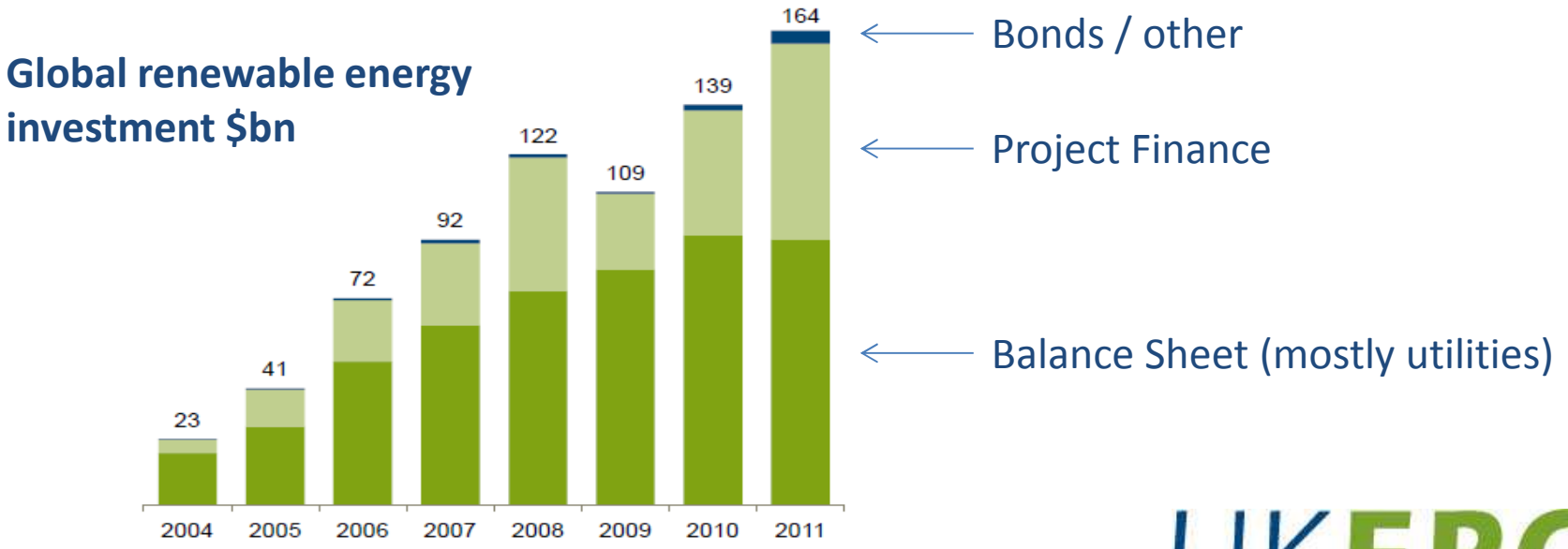
Low-cost finance: Two Major Investment Routes

- Utilities:

  85% of the 16.5 GW of new capacity 2006-2012 in UK, has been built by the major utility companies (BNEF, 2012)

- Financing of renewables:



Source: (UNEP, 2012) with data from BNEF

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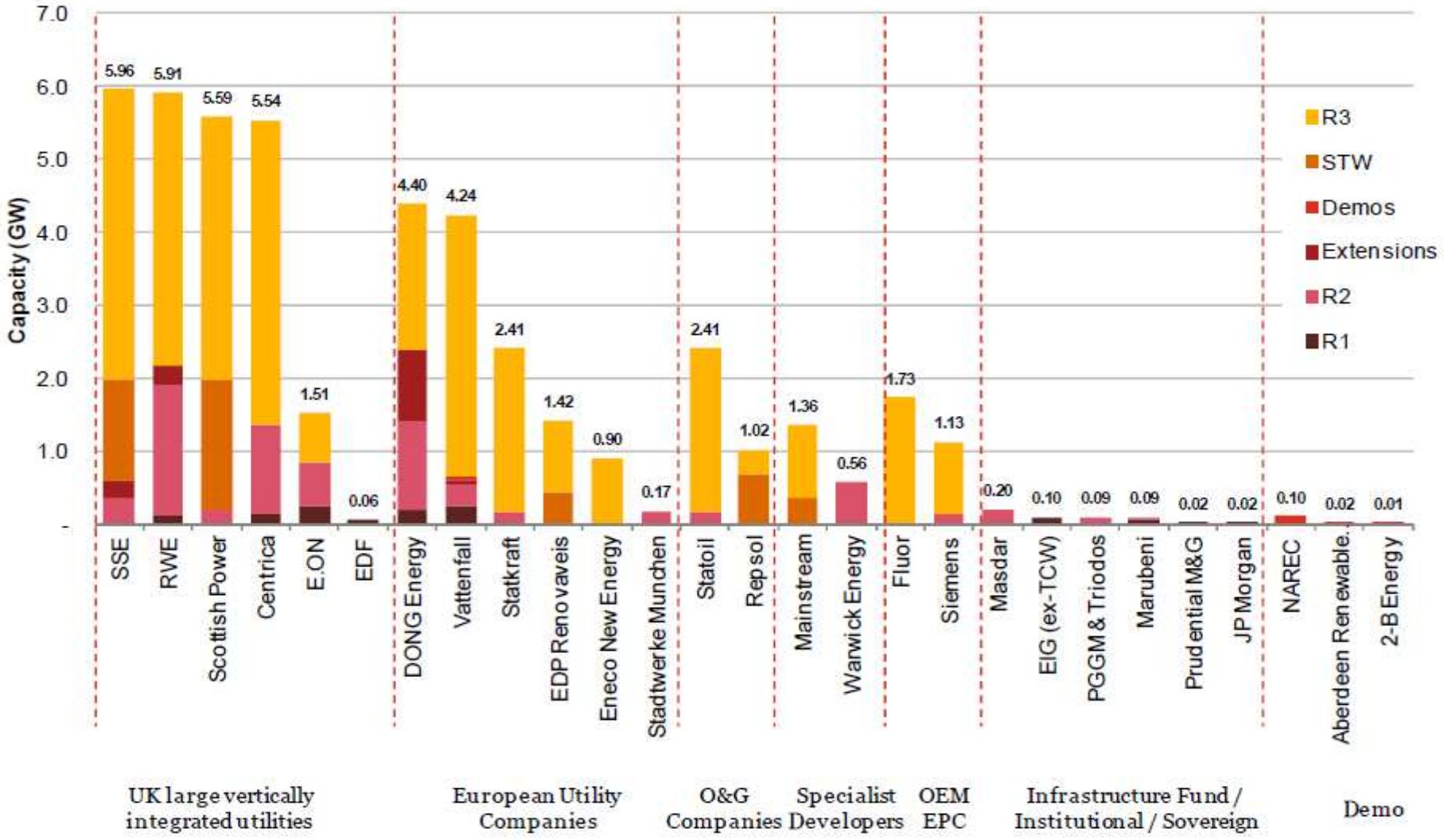
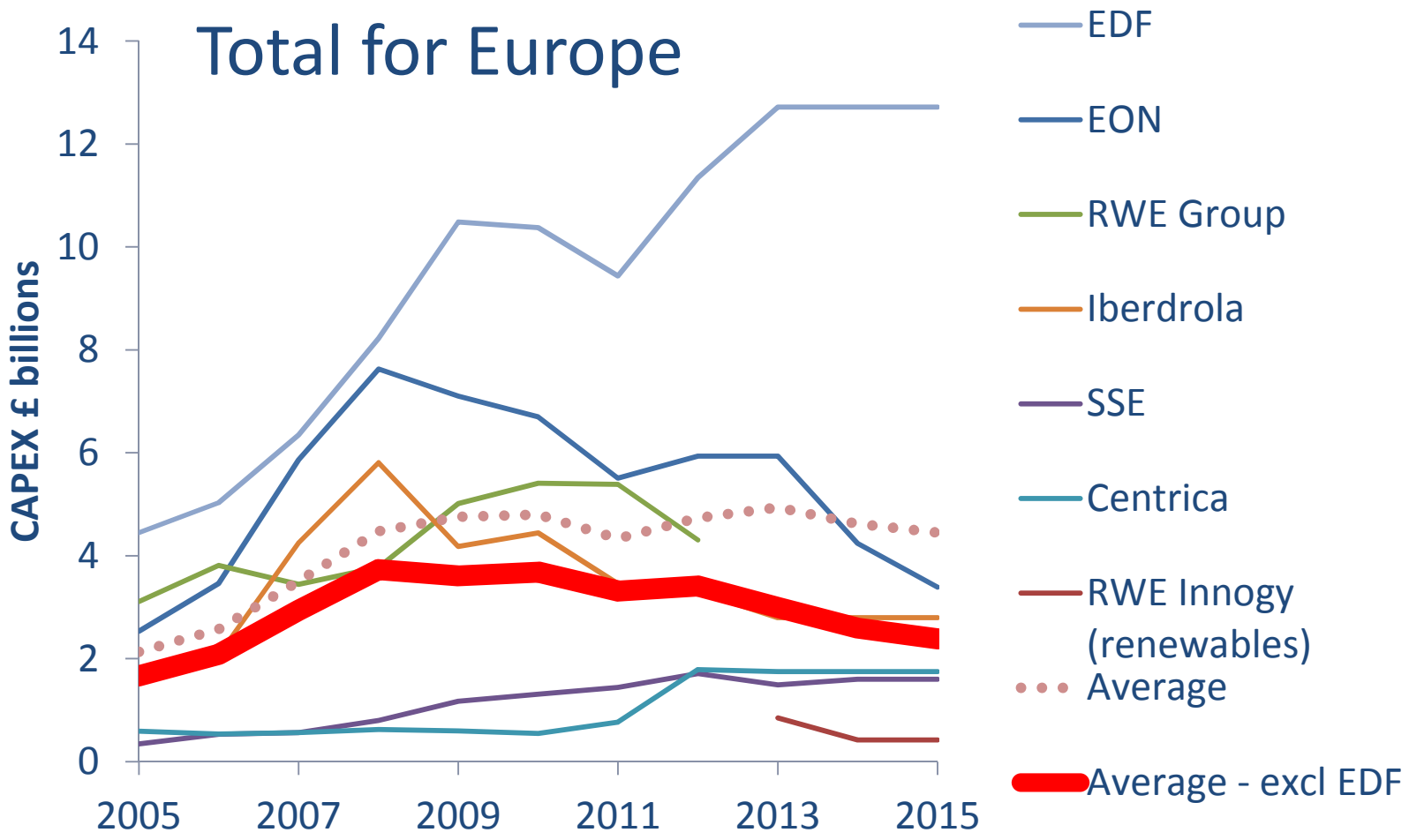
UK Offshore Wind – Equity Ownership



Source: (PWC, 2012)

‘Big 6’ CAPEX plans to 2015



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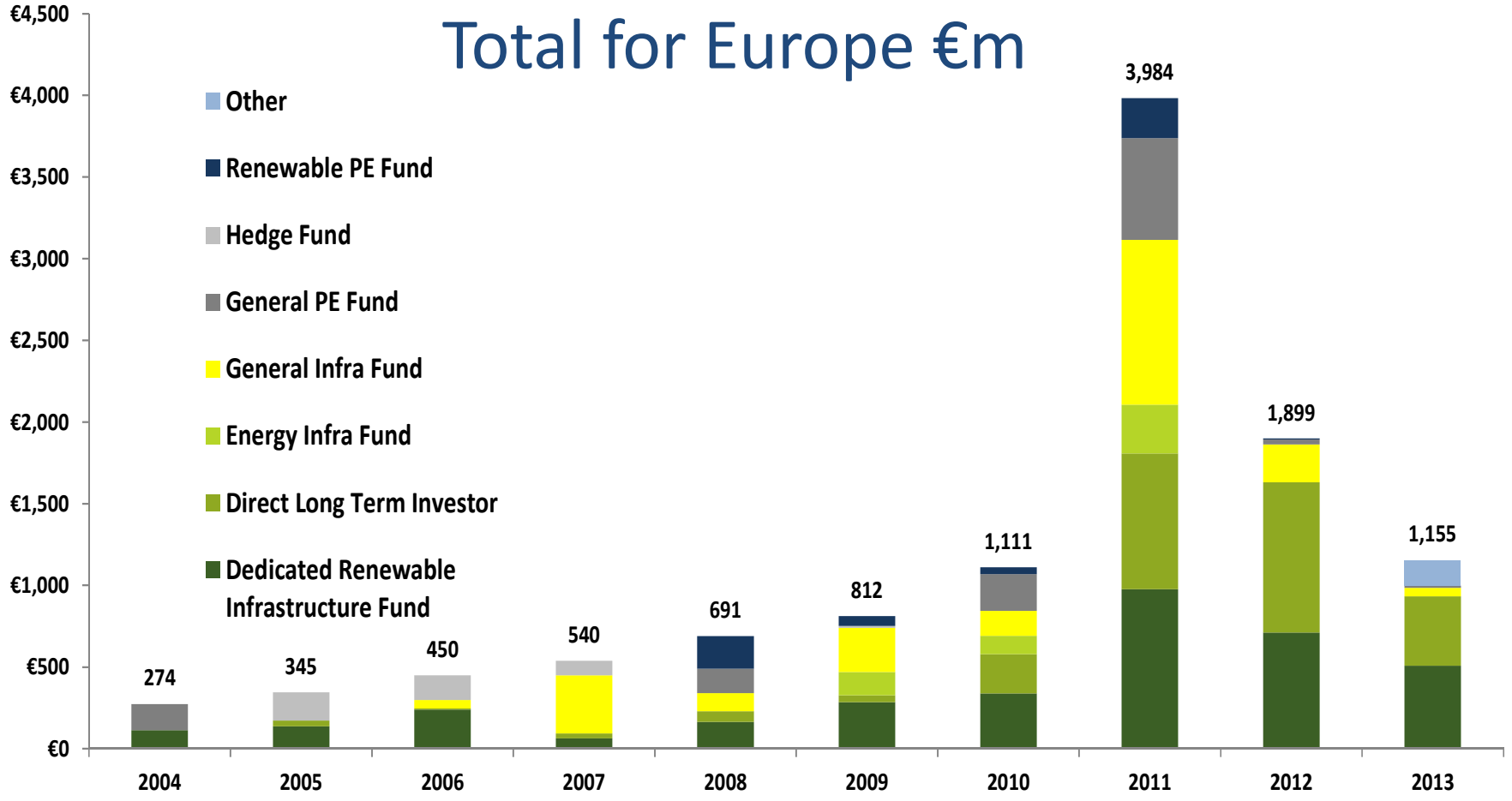
Direct Institutional Investment in low-carbon infrastructure



Source: (Hg Capital)

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Green Finance Conclusions

- History shows that finance can flow if investment conditions are right – puts the emphasis back on policy
- But large volumes of money (institutional investors) only available for relatively low-risk investments
- Current health of the utilities and business case for investment is therefore a worry
- Alternative routes for institutional finance to go directly into projects are being developed
- Back-of-the-envelope calculations suggest up to £1bn for UK renewables via this route??

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Potential Solutions

- Overhaul the utility model
  - Allow them to make a profit
  - Dedicated wind utility
  - Re-regulate generation sector
- Ramp up project financing by accelerating the re-refinancing of projects
- Increased role of public finance institutions:
  - Guarantees
  - Public finance initiatives
  - GIB / EIB co-investment
  - Green bonds

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Green Jobs

- What are green jobs, and how can we measure them?
- Macroeconomic perspectives and concepts
- Comparative analysis of job estimates from the literature
- Conclusions

Based on systematic review of literature:

"Low carbon jobs: the evidence for net job creation from policy support for energy efficiency and renewable energy" Draft TPA report

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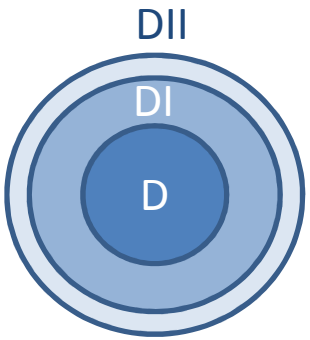
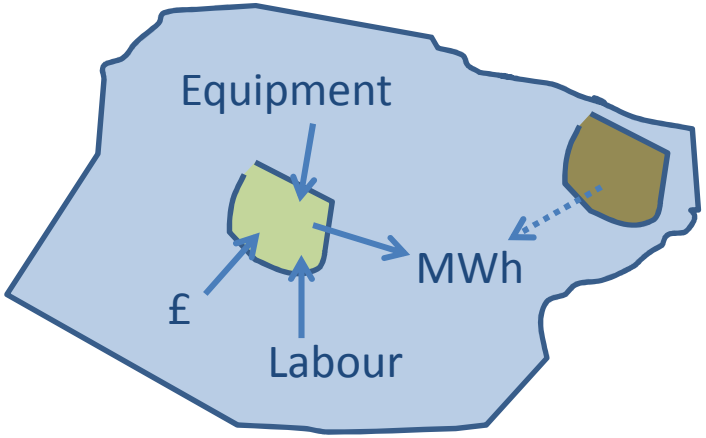
What are green jobs?

- Job types
  - Direct, indirect, induced
  - Short vs. long-term
  - Manufacturing, construction & installation, O&M
  - Supply chain / wider economy
- Net vs. gross jobs (accounting boundary)
  - Equipment manf inside boundary?
  - Displaced jobs in product markets
  - Impacts on labour market
  - Impacts on household expenditure





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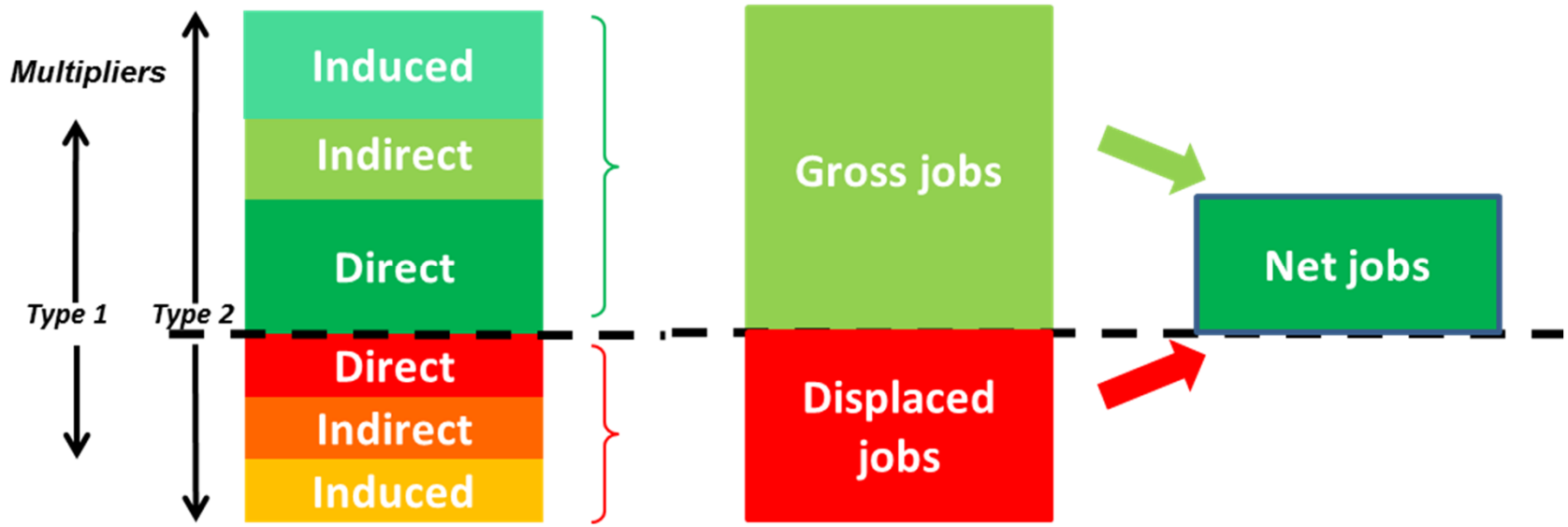
Calculating net jobs



Mostly Input-Output analysis, some direct job surveys, some CGE / other approaches

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Macro-economic perspectives

- Is the economy in equilibrium?
- Is there an output (aggregate demand) gap?
- Role of fiscal and monetary stimulus
- Multipliers, interest rates and crowding out
- Business cycles, long-term growth and technology development

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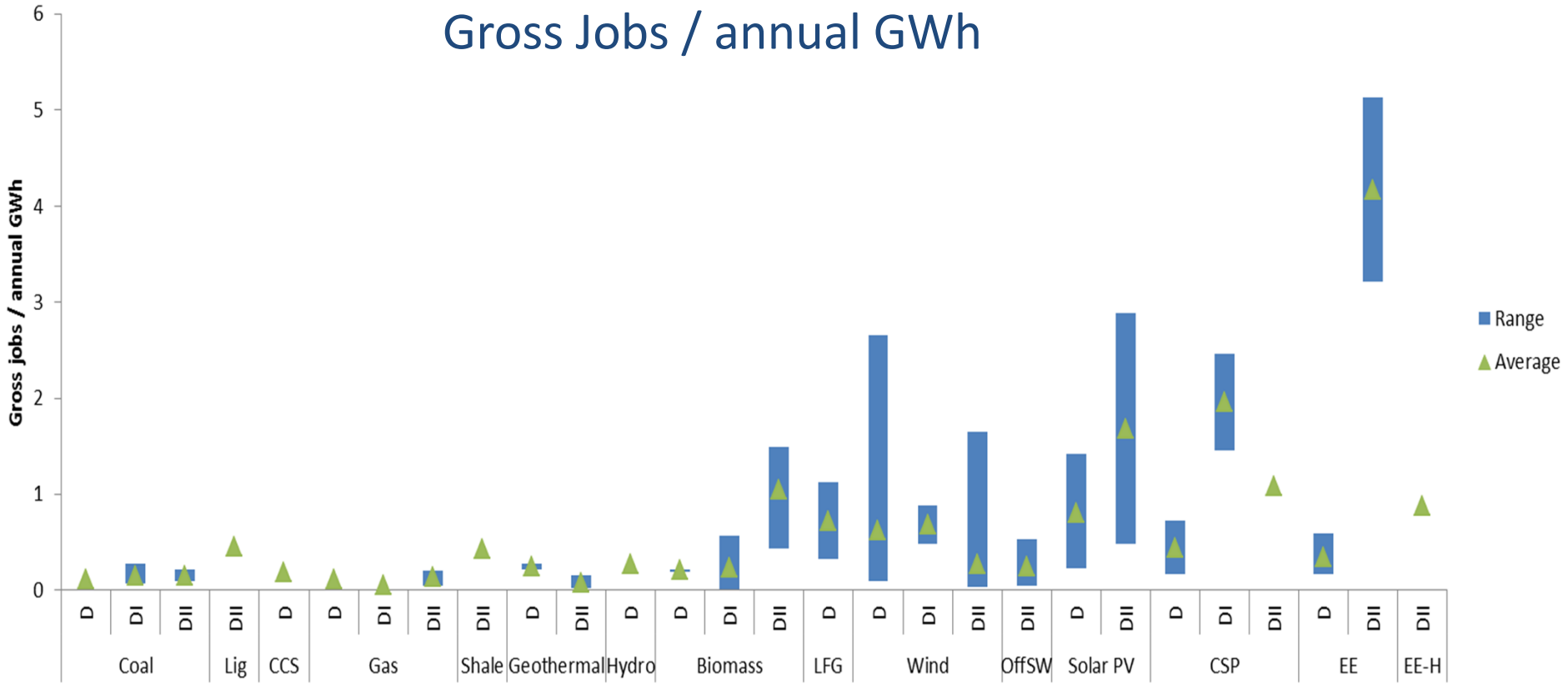
Evidence on Gross Jobs



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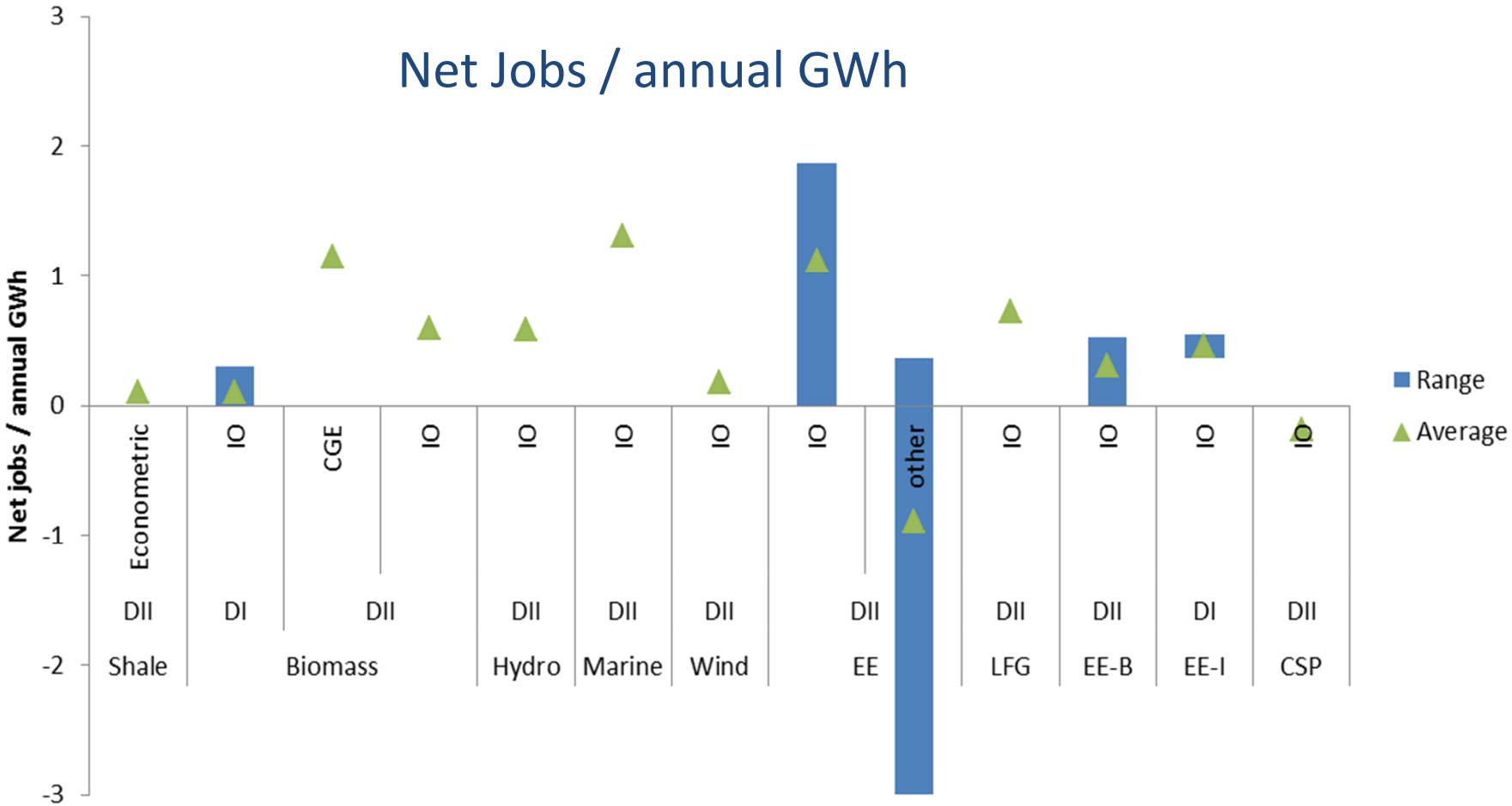
Evidence on Net Jobs



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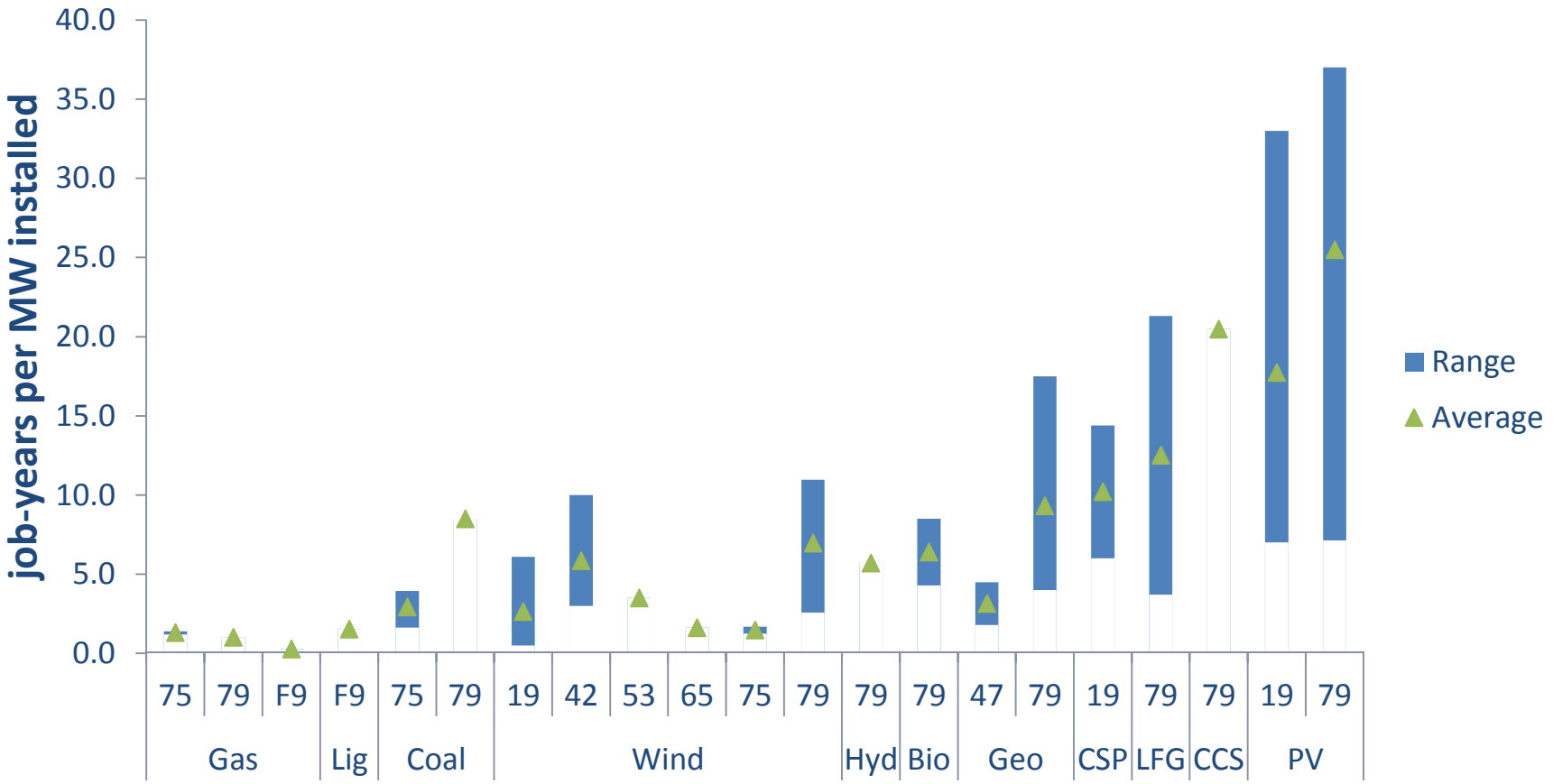
Short-Term Jobs (M,C&I)
Comparing Fossil vs. Renewables



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Green Jobs Conclusions

- On a simple 'per MWh' or 'per £invested' basis, renewables appear more labour intensive than fossil fuels. BUT:
  - The energy sector is not a major direct employer, so the effects we see are relatively small
  - The ability to create jobs (in any sector) depends on having spare capacity in the economy (i.e. recession). Timescales are important in determining the effects of policy.
  - Taking account of price effects will reduce employment benefits if higher costs lead to reduced household spending. The source of the money is important – is stimulus money really additional?

- Do jobs lead or follow the economy?
  - In the long-term (beyond the current business cycle), labour-intensity may not in itself be a good thing. Dynamic efficiency should drive decisions – i.e. will more RE/EE in the system make the economy more efficient in the long-run?

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