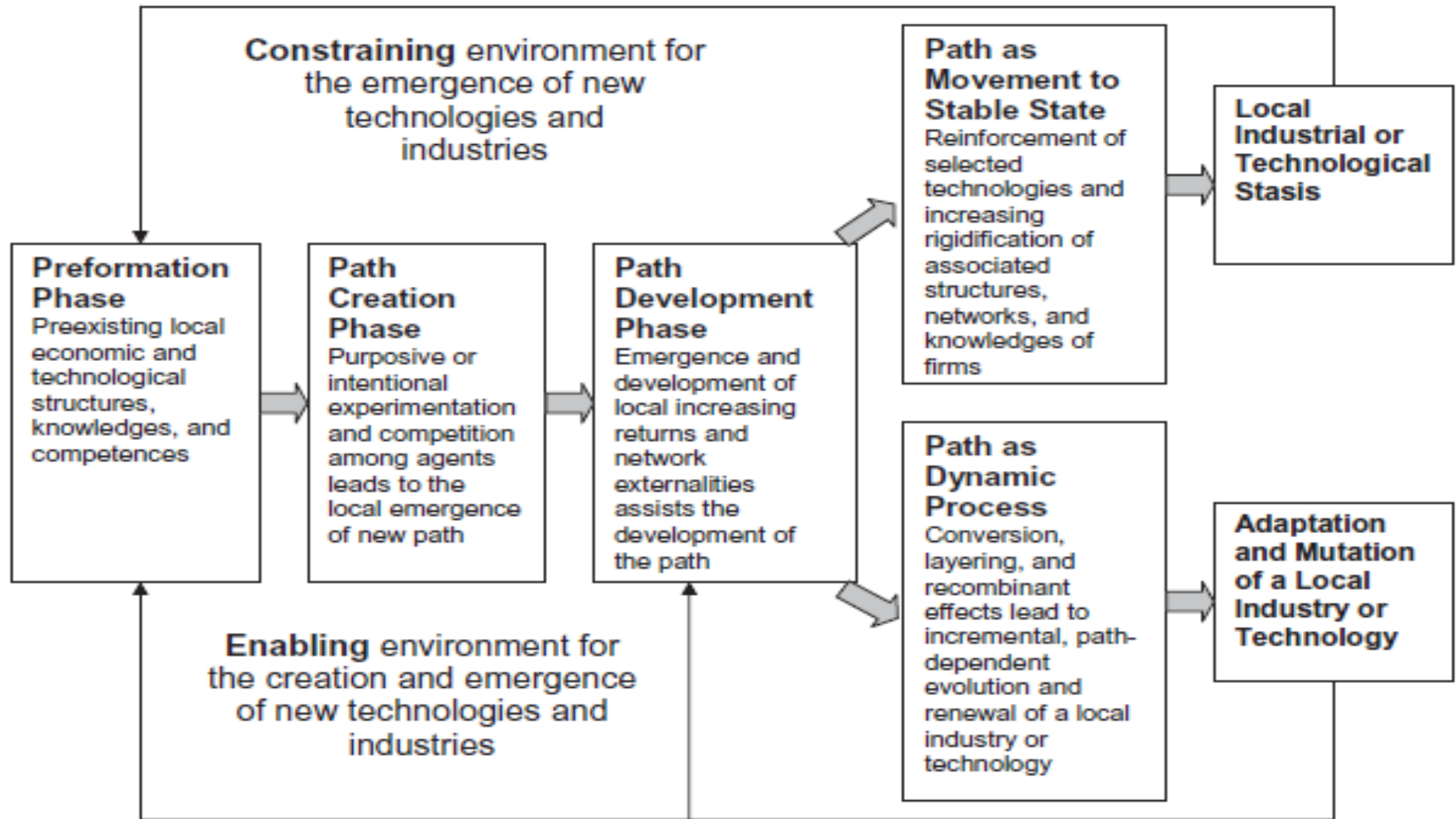




# Energy Transitions and the Creation of New Industries in Lagging Regions

Robert Pollock

# Model of Local Industrial Evolution (Martin, 2010)



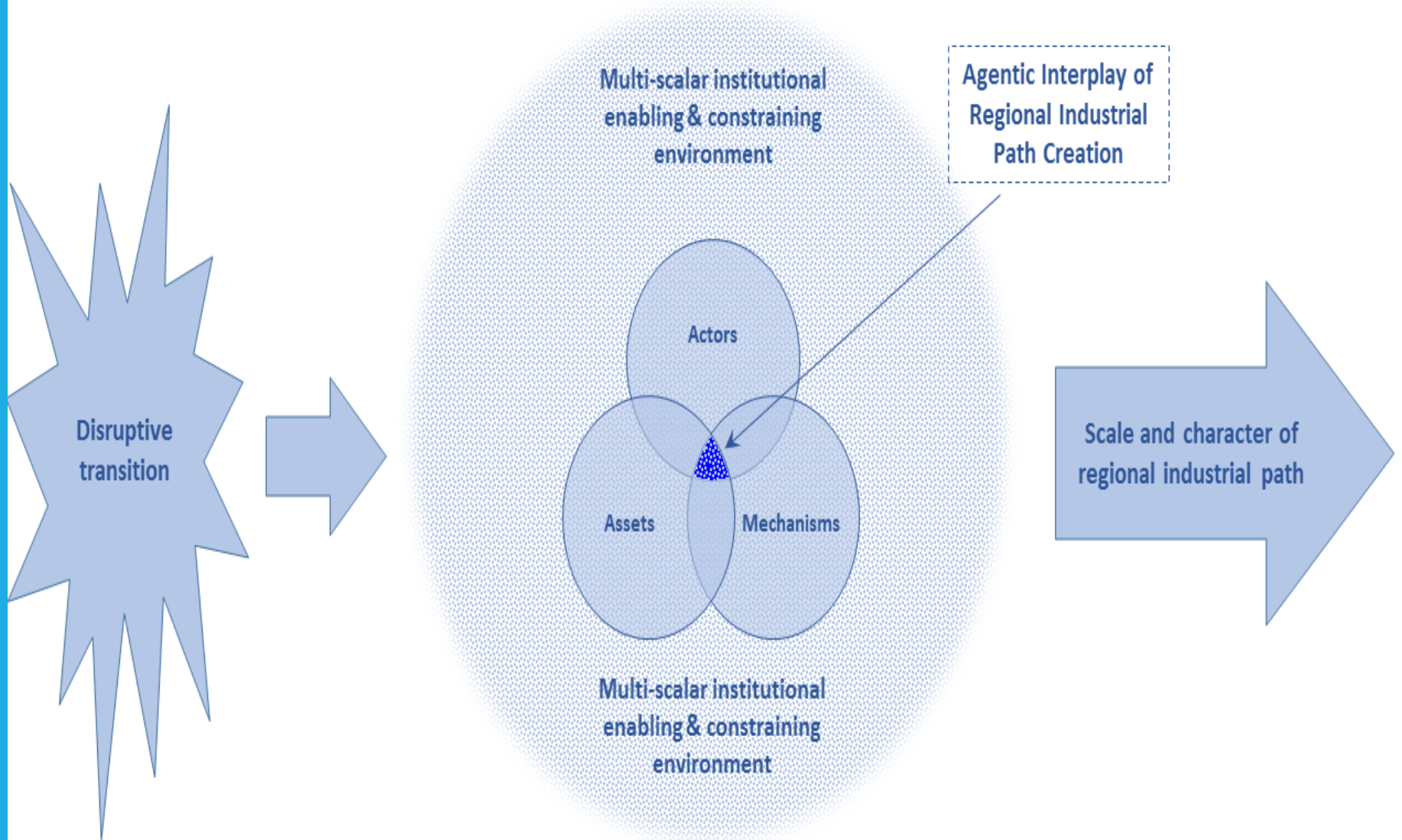
# Research Focus

- Regional industrial path creation in a multi-actor and multi-scalar context
- Institutions in enabling or constraining regional industrial path creation (“the missing link”)
- Technological change and disruptive transition
- Lessons for policy
- Offshore Wind

# What are institutions?

Institutional Regime Type	Nature of the Systems	Institutional Expressions
Institutional Environment	Formal Conventions	Structure of rules and regulations, mostly enforced
	Informal Conventions	Customs, norms, cognitive paradigms and social routines
Institutional Arrangements	Organisational Forms	Firms, government bodies, higher education, research bodies, etc

# Regional Industrial Path Creation: Analytical Framework



# Case Studies: OW Paths - Glasgow & Humberside 1996 to 2015

The  
Economist

February, 2011

**“GREEN RUSH: The renewable-energy industry is heading for Glasgow**

Rundown ports on the east coast are wooing foreign firms in the hope of becoming suppliers to the burgeoning offshore renewable industry. Unlikely as it might seem, the biggest long-term winner from this green rush might be Glasgow (due to its research).

Siemens, a German conglomerate, announced plans (for) a wind-turbine factory in Hull, a dingy city in Yorkshire.”

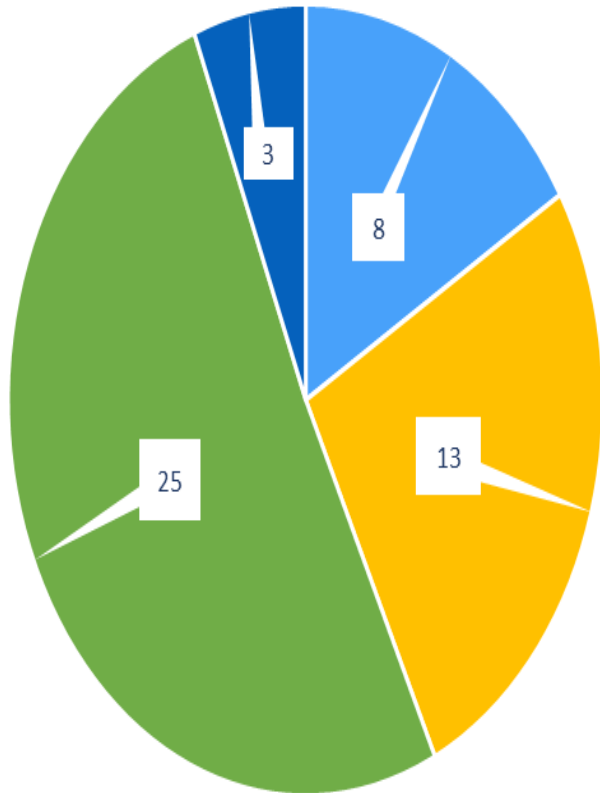


## International & UK OW Sector Context

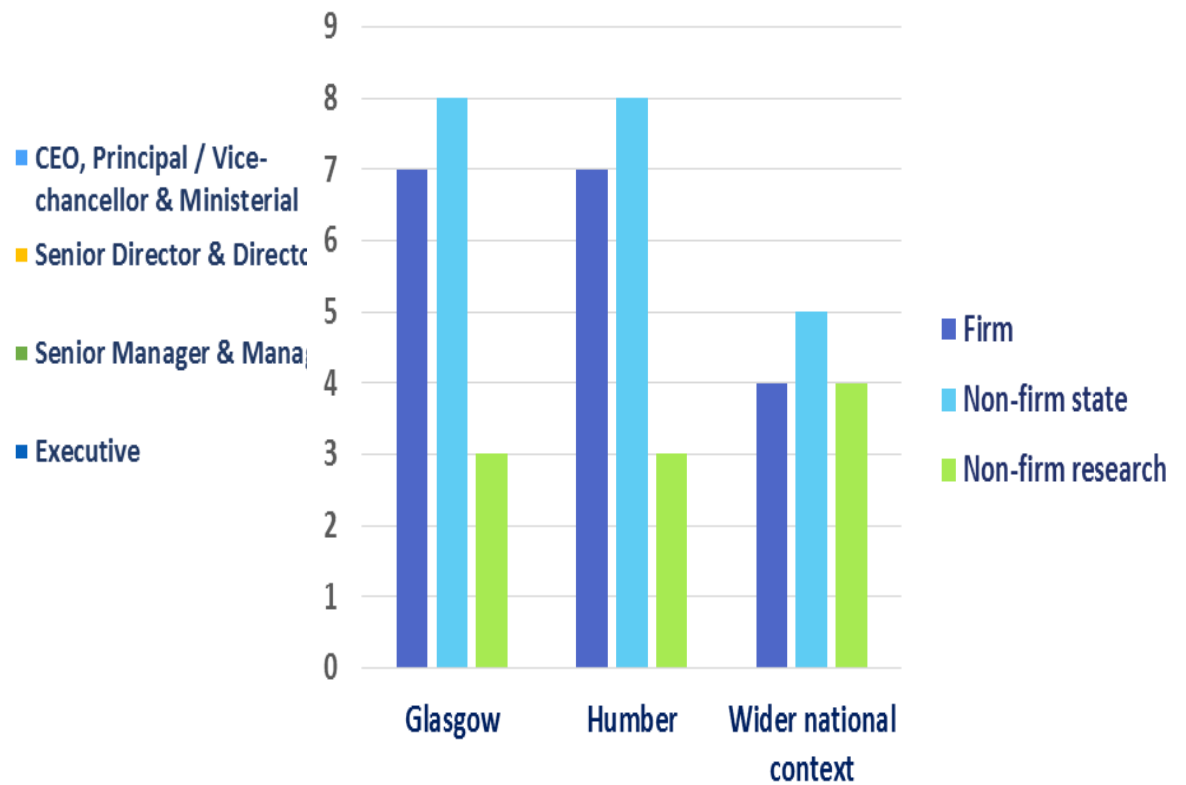
Glasgow OW Case  
Regional Context

Humber OW Case  
Regional Context

# Primary Research

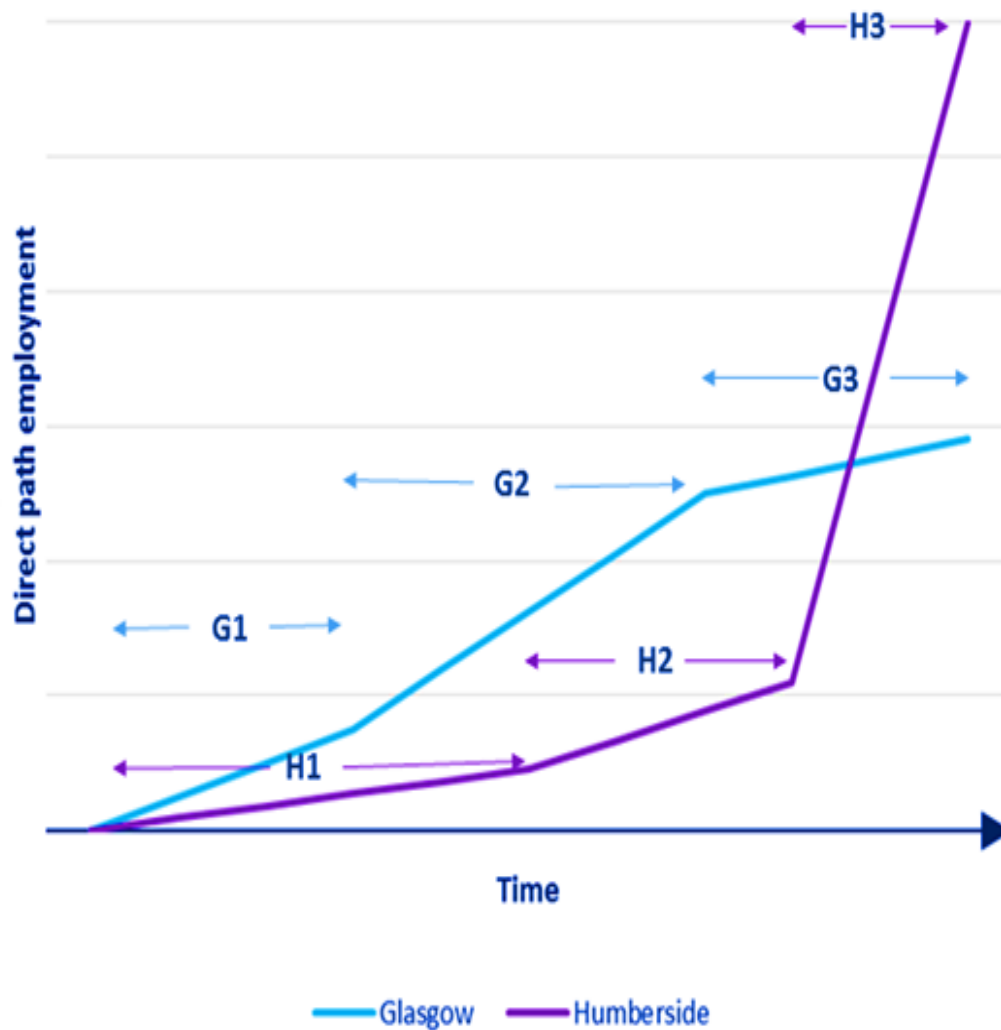


Interviewees by seniority



Interviewees by geography and actor type

# Differing Episodes of Path Creation



KEY		
G1	Glasgow Path Emergence	2006-2009
H1	Humberside Path Emergence	2006-2011
G2	Glasgow Path Development	2009-2013
H2	Humberside Path Development	2011-2014
G3	Glasgow Path Realisation	2013-end 2015
H3	Humberside Path Realisation	2014-end 2015



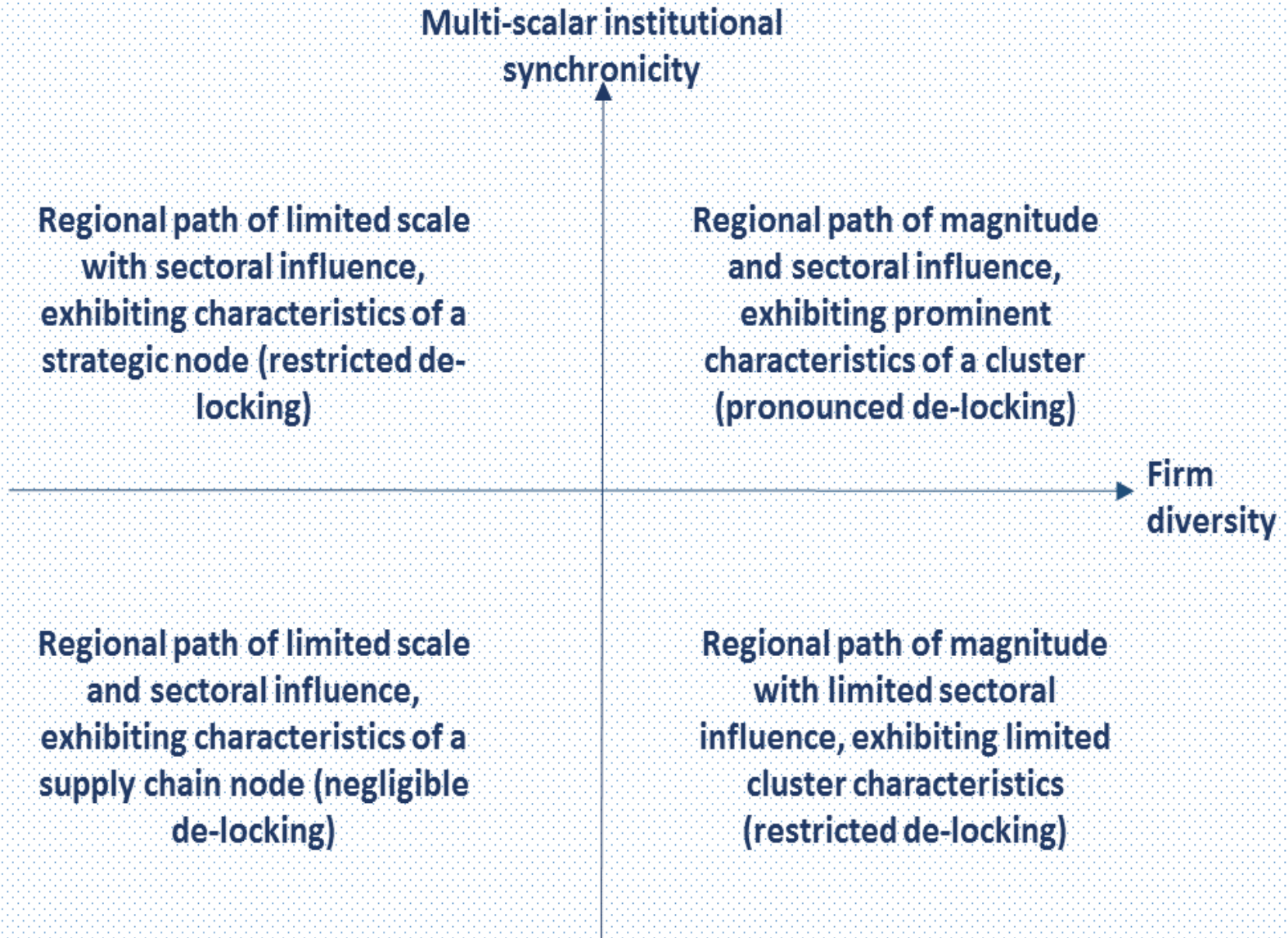
# INSTITUTIONS AS TRIGGERS AND BRAKES ON PATH CREATING ACTOR AGENCY

Multi-scalar Institutional Environment						
	ENERGY		INDUSTRIAL		SPATIAL	
Scale	TRIGGERS	BRAKES	TRIGGERS	BRAKES	TRIGGERS	BRAKES
<b>Inter / EU</b>	UNFCCC 1992 to '15  EC White Paper, Strategy and Action Plan '97  EU Energy Directive '09 with binding targets	Ongoing absence of overarching EU Energy Policy  Energy White Paper '14 – no binding targets	EC White Paper '97  SET Plan '08  Blue Growth '12	Consolidation of EU supply chain due to changing EU and state regulatory frameworks	Cohesion Report '07 onwards  ESIF  INTERREG	Consolidation of EU supply chain due to changing regulatory frameworks
<b>UK</b>	NFFO subsidy 1990  Climate Change Act '08  ROCs subsidy '02 & '09  Renewable Energy Roadmap '11	Energy Act '13  CfD subsidy '14/'15  DECC "reset" '15	Building Britain's Future '09  Offshore Wind Ind. Strategy '13	Implementation of Offshore Wind Cost Reduction Task Force recommendation s'12 onwards	Crown Estate UK Leasing Rounds '01, '03 and '09  RDAS '98 to '10  COREs and EZs, '12	Abolition of RDAs '10
<b>Devolved (Scotland)</b>	ROCs (Scotland) '02  Climate Change Act '09  Route Map '09	ROCs (Scotland) closure '15	Eco. Strategy '07  OW Ind Group '09  OW Route Map & NRIP '10		Crown Estate Scottish Leasing Round '09  Marine Scotland '11	Wind farm planning delays
<b>Regional</b>	Various local government energy transition and efficiency policies		Scot Gov OW Team est. in Glasgow '09  OREC established in Glasgow '13  Hull OAIC, '15		Planning approvals for regional asset valorisation  Site preparation grants & support	Intraregional competition on Humberside

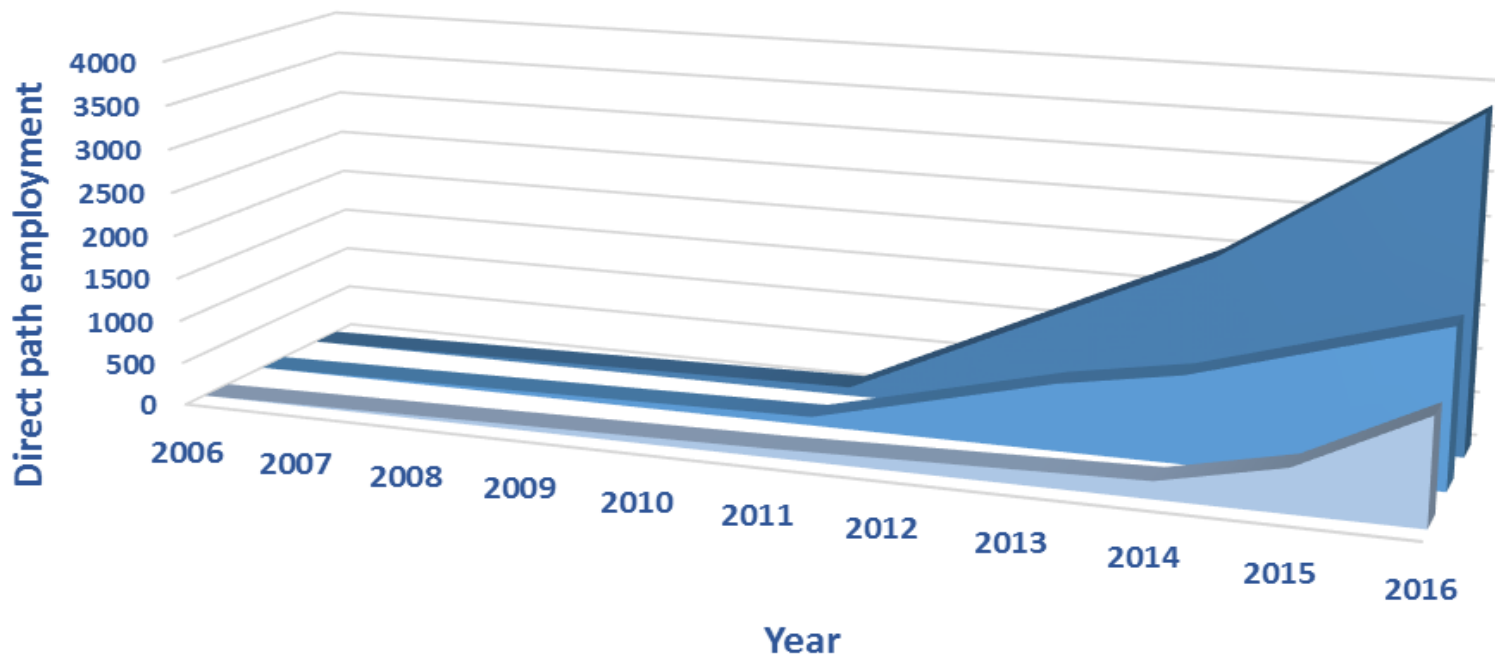
# The Limits of Endogenous Models: Regional Innovation Systems

- Glasgow had pronounced RIS, Humberside did not – yet both had muted effect on regional path creation
- Causal power of respective RIS circumscribed by broader sectoral / technological evolution
- Extra-regional institutions mediated timing, scale & nature of this broader evolution (disruptive transition)
- Regional path creation exposed as a contingent, reflexive by-product of this broader process
- RIS theory requires further accommodation of extra-regional institutions and wider technological dynamics
- Implications for other endogenous models e.g. smart specialisation, regional institutional thickness / capacity

# Multi-scalar Institutional Synchronisation

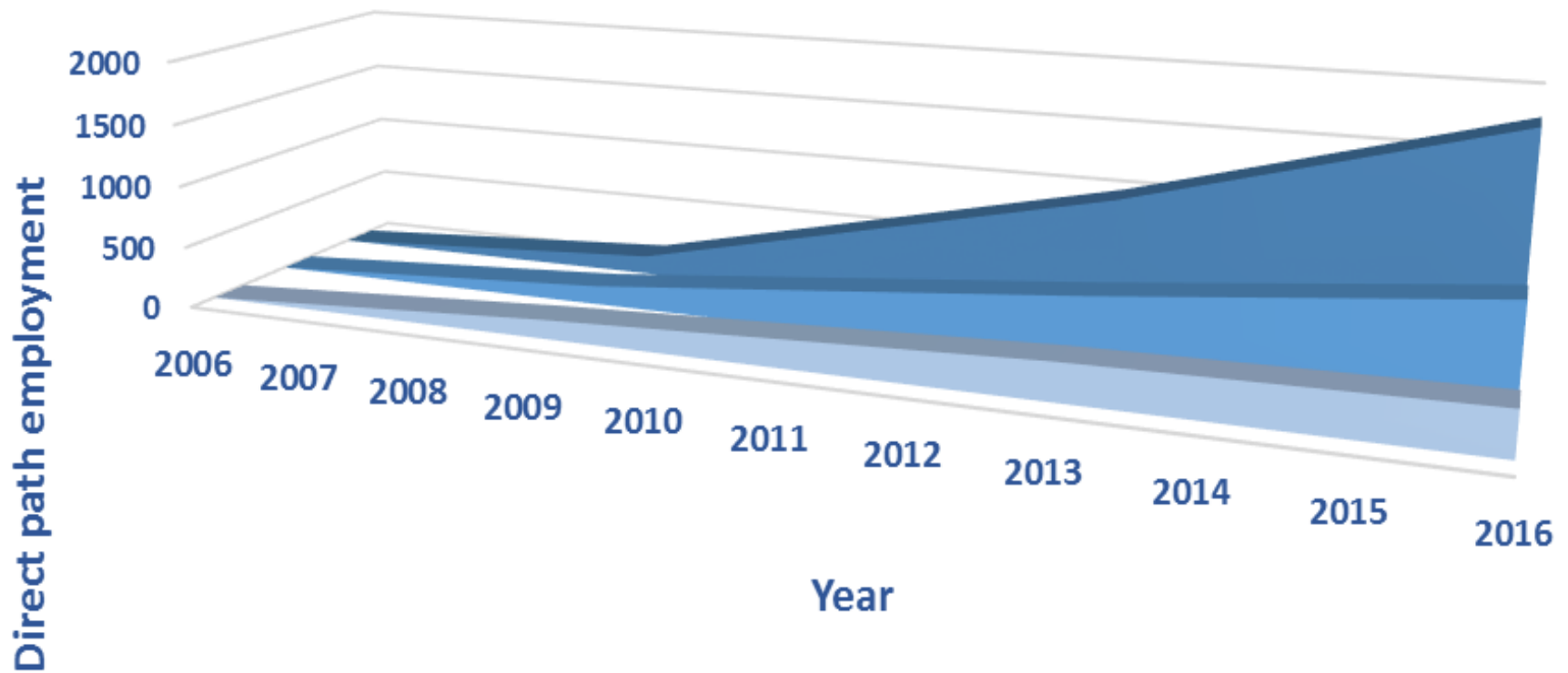


# Potential Alternate Outcomes of Enhanced Institutional Synchronisation - Humberside

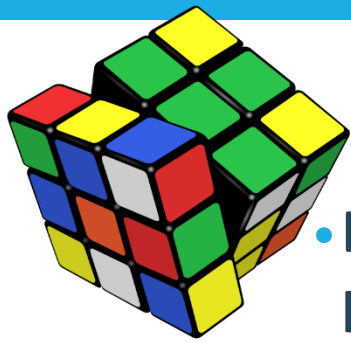


- Actual path trajectory (exhibiting historic characteristics of regional economy)
- Counterfactual trajectory 1 - notable supply chain co-location
- Counterfactual trajectory 2 - "Super Cluster"

# Potential Alternate Outcomes of Enhanced Institutional Synchronisation - Glasgow



- Actual path trajectory (exhibiting historic characteristics of regional economy)
- Counterfactual trajectory 1 - "Global R&D Hub" (a niche)
- Counterfactual trajectory 2 - "Global R&D Hub" with manufacturing



# Lessons for Policy

- Disruptive transition offers substantial opportunities for path creation in lagging regions
- Path creation is a fluid and open process with many potential outcomes (there are constant choices)
- Scale of regional asset valorisation (incl. latent assets) conditioned by scale of fusion with novelty/innovation
- Limits to endogenous growth models for lagging regions need integrated with policies which transplant power, novelty/innovation & investment
- Institutional synchronisation is vital; state institutions must be ceaselessly coordinated & focused (role for a new state actor: the system builder)
- N.B. policies can engender new regional industrial paths which replicate deficiencies of established regional industrial base

# Thanks

**To the team at CURDS, especially Professor  
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**And also everyone else who contributed to my  
research, particularly my interviewees**

