


PSCC
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A blurred background image showing electrical components, including a white three-pin UK power plug and a circuit board with various electronic components.

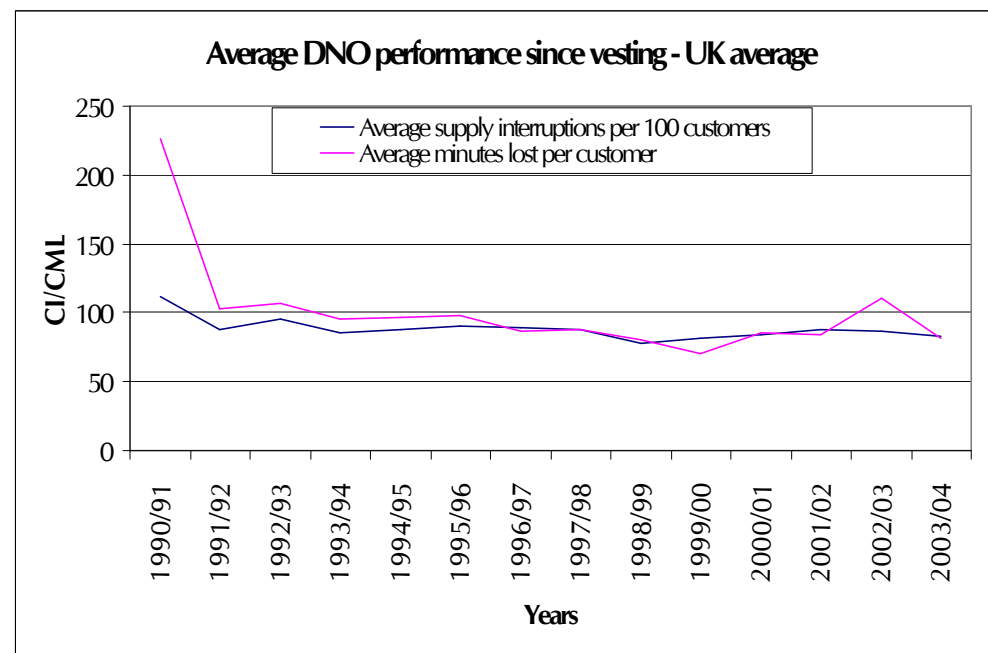
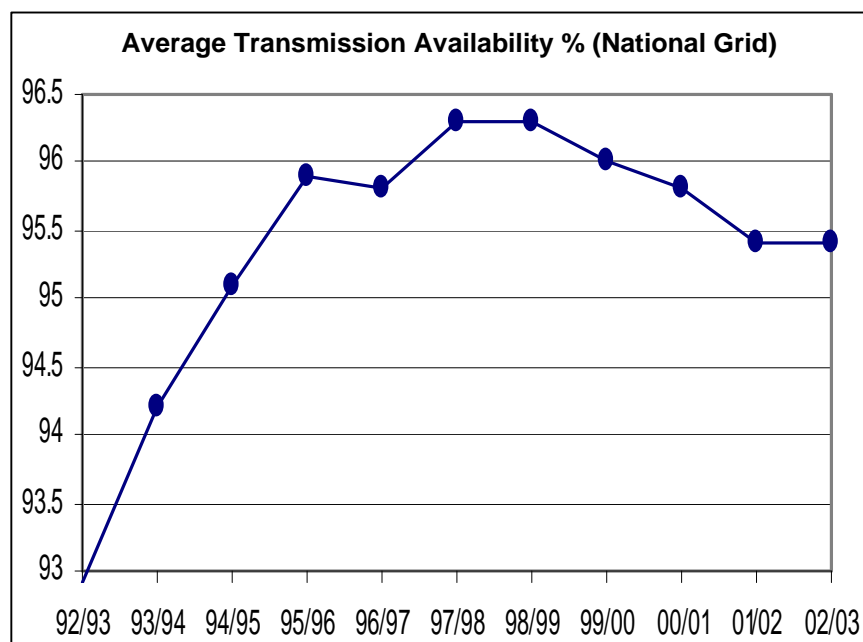
Power Quality and the need for Grid Codes ***an Ofgem perspective***

John Scott
Technical Director, Ofgem
john.scott@ofgem.gov.uk

Three Short Topics for Today

1. **GB Quality of Supply update**
2. **New Incentives for innovation**
3. **Pitfalls and catalysts for success**

T & D Reliability



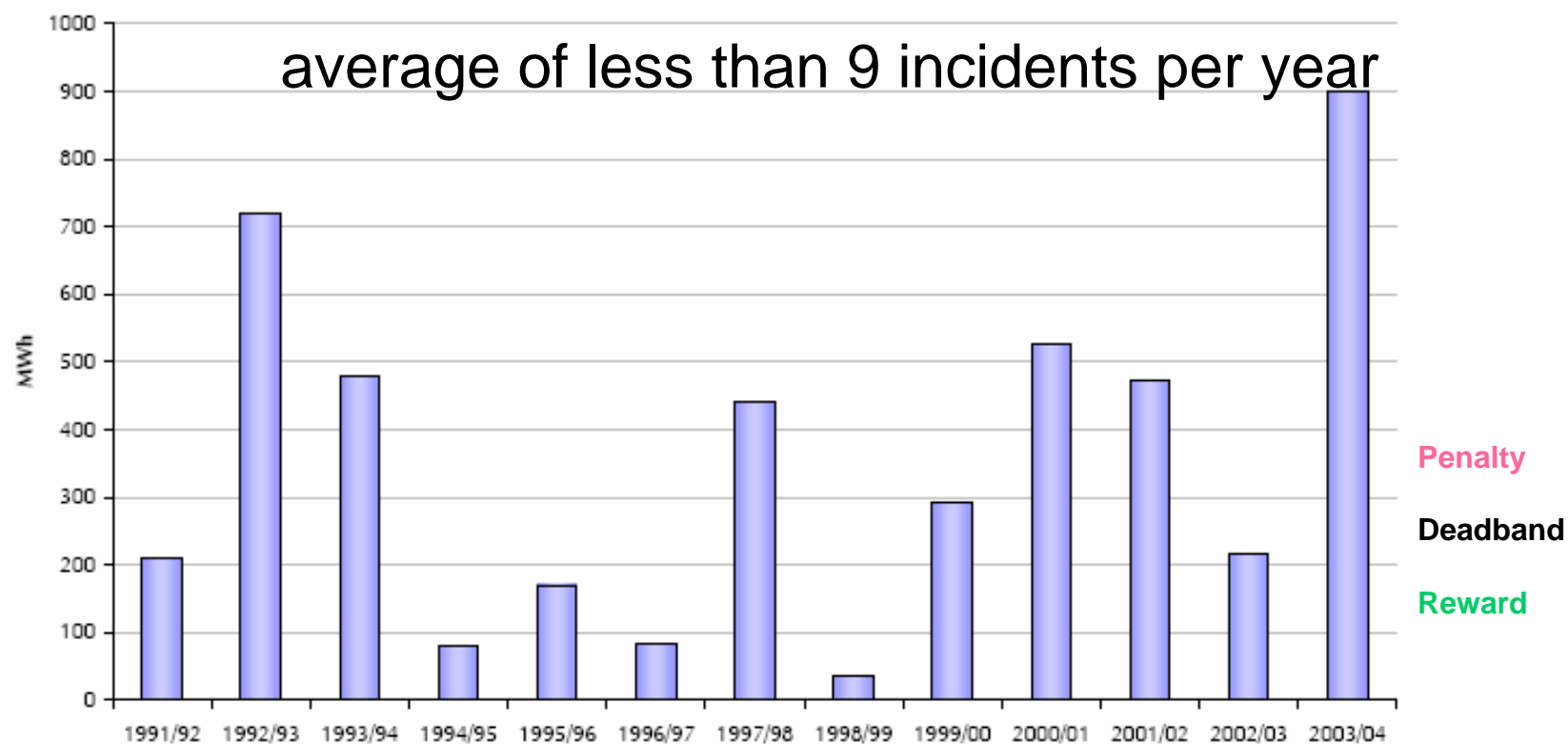
Distribution Quality of Supply - 2005 Update Information & Incentives Programme (IIP)

- **Continuing focus on quality of supply**
 - strengthened IIP targets
 - rewards for best performers
- **Tighten IIP targets for 2010**
 - 4% improvement in CI; 13% in CML
 - Stronger incentives to beat targets
- **Revised storm compensation arrangements**
 - provide incentive to improve performance
- **Revenue exposure**
 - +/- 3% on IIP
 - Up to 2% on storms compensation
 - Overall downside cap of 4%

Quality of Supply – new mechanism **Transmission network reliability incentive**

- Introduced following 2003 blackouts in London and Birmingham
- Rewards/penalties +1.0/-1.5 % of NGC transmission revenue based on annual performance (against a target level of energy unsupplied)
- Exceptions – extreme weather events and 3 customers or less
- Dead-band (230MWh-255MWh) - reward if below or penalty if above
- Penalty for future events like London/Birmingham approx £10M

Energy unsupplied - NGC

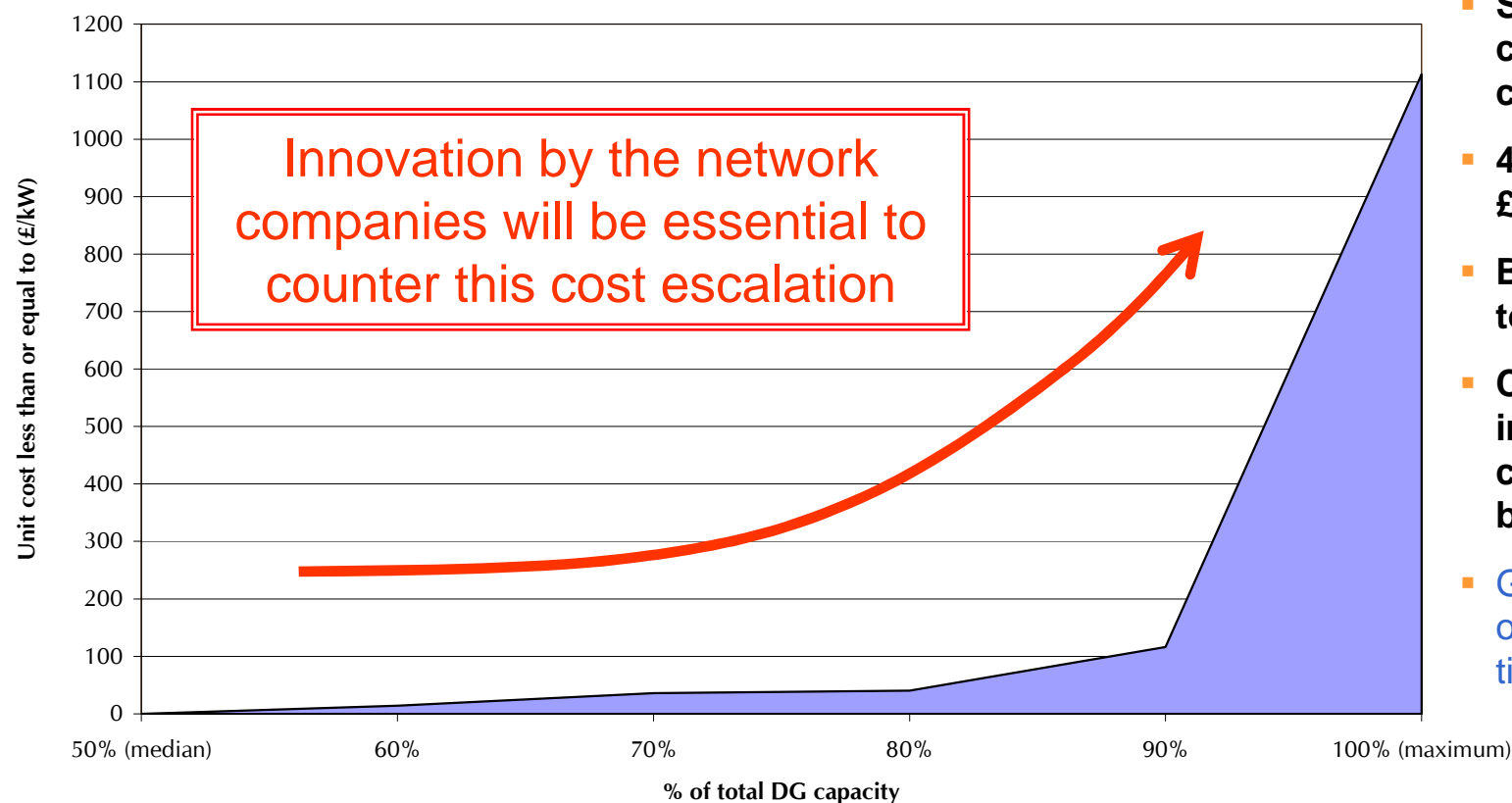


Brief Topics for Today

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3. Pitfalls and catalysts for success

Distributed Generation connection costs

DNO unit cost estimates for DG connections to 2010



NOTE

- Some 50% can be connected at nil cost
- 40% at less than £100/kW
- But 10% will cost up to £1000/kW
- Costs will further increase as spare capacity is used up beyond 2010
- Graph is ranked by order of cost, not timing of project.

**Published
& Agreed**

Distribution Price Control Review – DG Incentives

- **A general financial incentive for connecting Distributed Generation** - Cost pass-through (80%) plus annual revenue (£2.50/kW typically)
(The £2.50 comprises £1.00 for DG related Opex + £1.50 for DG related Capex, or in the case of Scottish Hydro Electric £2.00)

and

- **Two new Innovation incentives:**

Innovation Funding Incentive (IFI) – an annual funding for network R&D of
0.5% turnover (£1-2m per Co.) and

Registered Power Zones (RPZ) – an enhanced DG financial incentive of
typically 3x the DG Capex incentive where new technology is used on networks to
connect and integrate DG (ie an additional £3/kW to the main DG incentive).

IFI & RPZ – some details

- Companies fund a proportion of each IFI project (av. 20%)
- IFI is allowed on a ‘use it or lose it’ basis
- Open reporting of IFI & RPZ projects is required
- Ofgem registers but does not approve RPZ projects

Is there a business case ?

IFI costs

= £62m NPV over 5 years

“For all the innovations identified, **the sum of the Present Values is £443m**”

(Mott MacDonald/BPI Consultant's Report)

RPZ costs

= £29m NPV over 5 years

“For all the innovations identified, **the sum of the Present Values is £121m**”

@ 6.5% discount rate

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Enablers for innovation and business growth

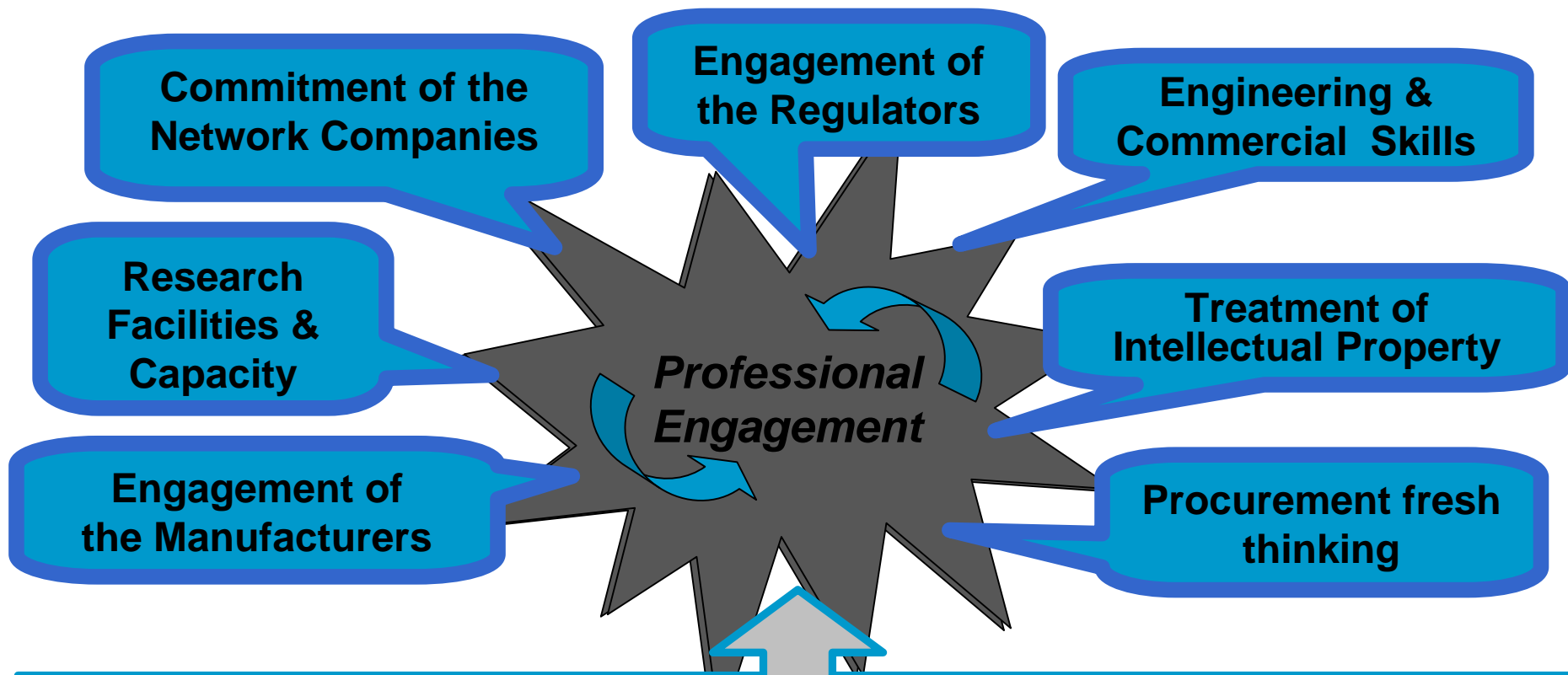
- Business Efficiency innovation can be delivered ‘in house’
- Engineering innovation differs and must invariably mobilise a supply chain involving external parties
- The IEE/Technical Architecture project examined this:

Two key enablers for engineering innovation

1. Effective cross-organisation working between the parties in the supply chain

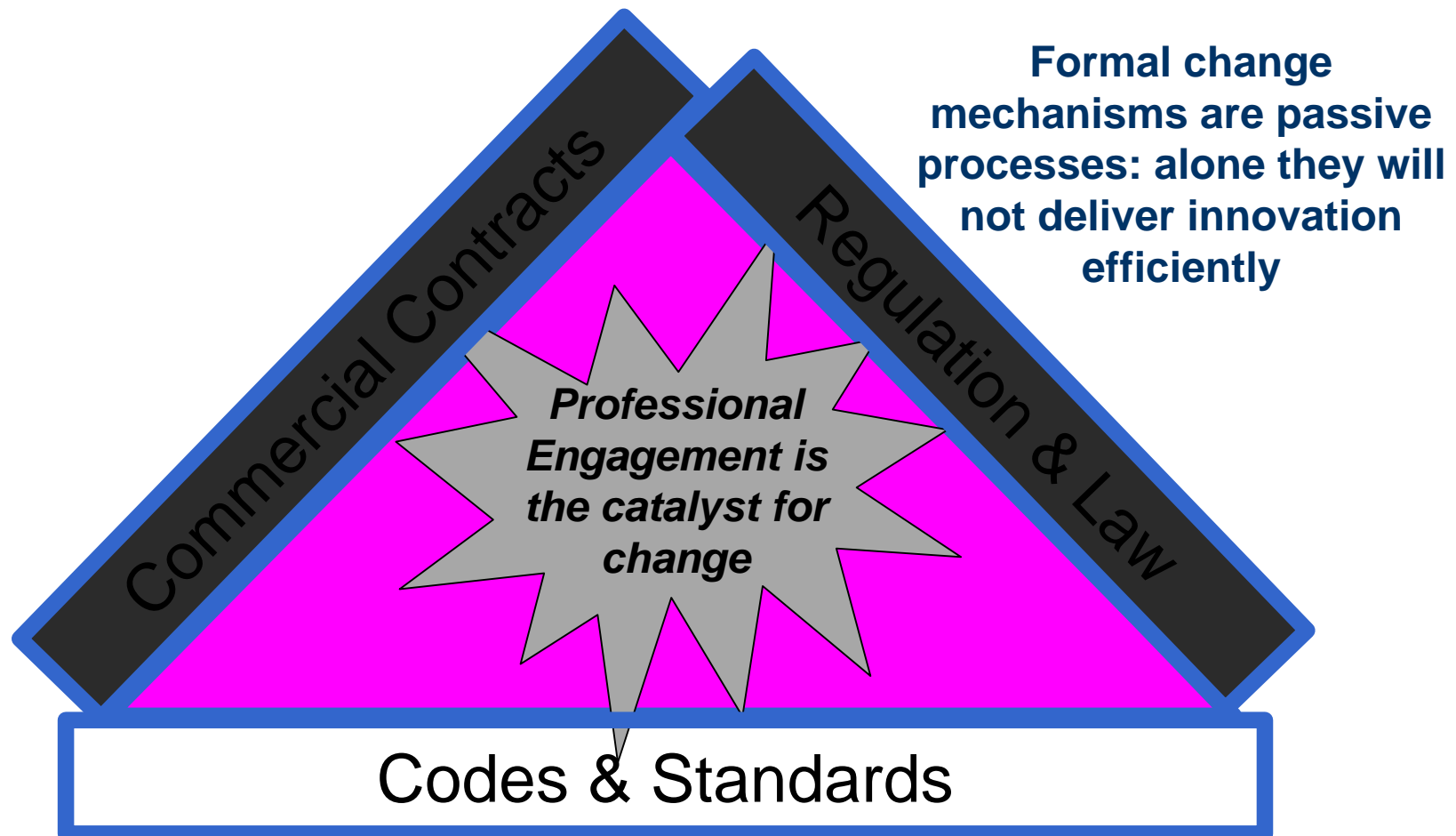
2. The ability to adapt the sector’s technical, regulatory and commercial frameworks

1. Effective cross-organisation working between the parties that comprise the supply chain



In the absence of central planning the impetus for change is mutual benefit and the catalyst is the 'Professional Engagement' of all the parties

2. The ability to adapt the sector's technical, regulatory and commercial frameworks when needed



Professional Engagement – *today's status*

Professional
Engagement

Engagement is currently at a low point

- While companies have become more efficient their internal processes have become more mechanistic with a dominant short term focus.

What's being missed ?

- ✓ It is the catalyst in a multi-party supply chain; it underpins successful engineering innovation and capital investment
- ✓ It brings a breadth of skills and sector intelligence to the organisation; avoiding known pitfalls; access to historical or specialist knowledge
- ✓ A quality self-check and external reference point for individuals
- ✓ It stretches people; refreshed skills and enthusiasm are taken back to the company; it revitalises commitment to professional standards; is a source of job satisfaction and career growth.

Three Points to Conclude

- 1. QoS Incentive schemes have been effective**
- 2. Innovation may require special regulatory treatment**
- 3. Professional Engagement is a catalyst for innovation - and an engineering competence**

