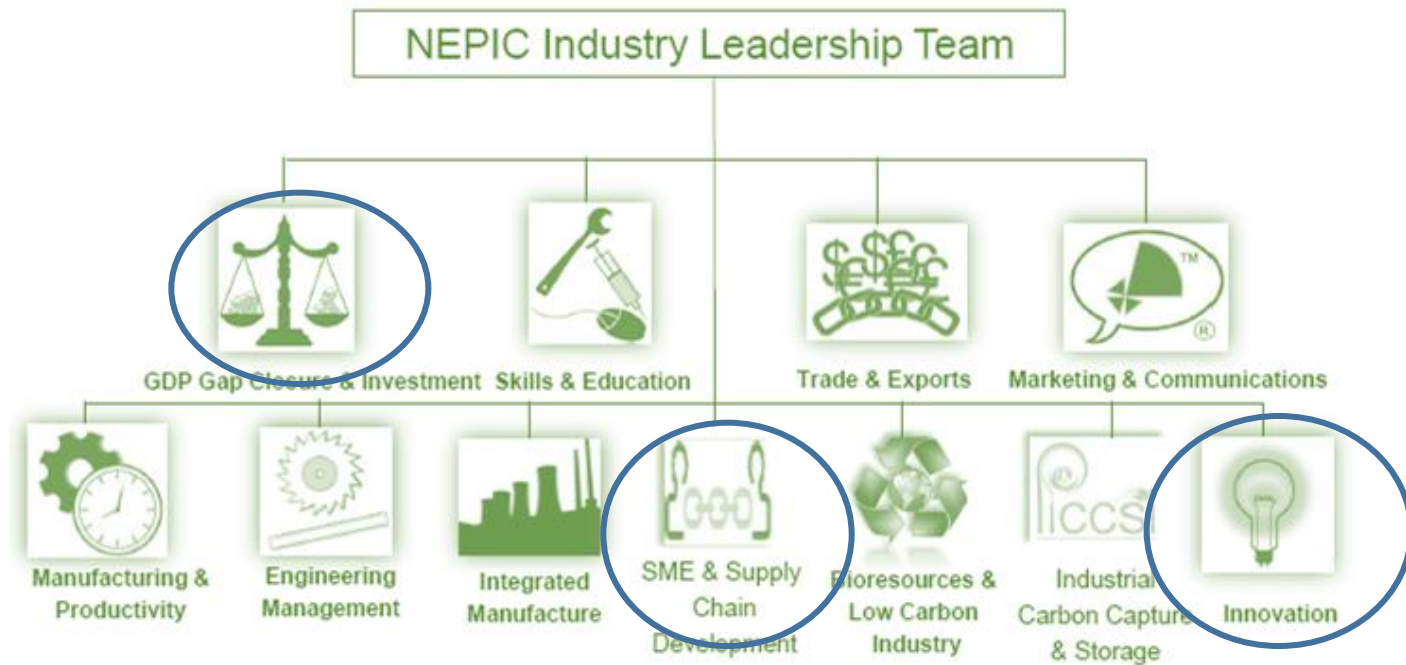


# INTELLIGENCE GATHERED & ISSUES ADDRESSED THROUGH INDUSTRY POPULATED THRUST TEAMS



# GDP GAP CLOSURE/GLOBAL COMPETITIVENESS



## TEES VALLEY PROCESS INDUSTRY (TVPI) OVERVIEW

**Aim: to identify opportunities for improved efficiency and growth**

45 multinational process industry and materials manufacturing companies shared detailed, sensitive and confidential information with project partners.

Data Provided:

- Raw material/feedstock

- Utilities and energy consumption

- Process operations descriptions/flow diagrams

- Production rates and volumes including process intermediates

- Wastes streams and bi-products generated.

Also provided their own unique insights into opportunities that exist for themselves and for the sector



# TEMPLATE



<b>Site</b>	Company X – CONFIDENTIAL
<b>Site contact</b>	
<b>Title</b>	
<b>Study team</b>	
<b>Summary</b>	Company Overview and Site Process Flow Diagrams – where appropriate.
<b>Inputs</b> (as utilities and raw materials)	
<b>Process/Intermediates</b>	
<b>Products and waste streams</b>	
<b>Barriers and Opportunities – pertinent to Company X in the medium term ie within 5 years</b>	
1.	
2.	
3.	
4.	

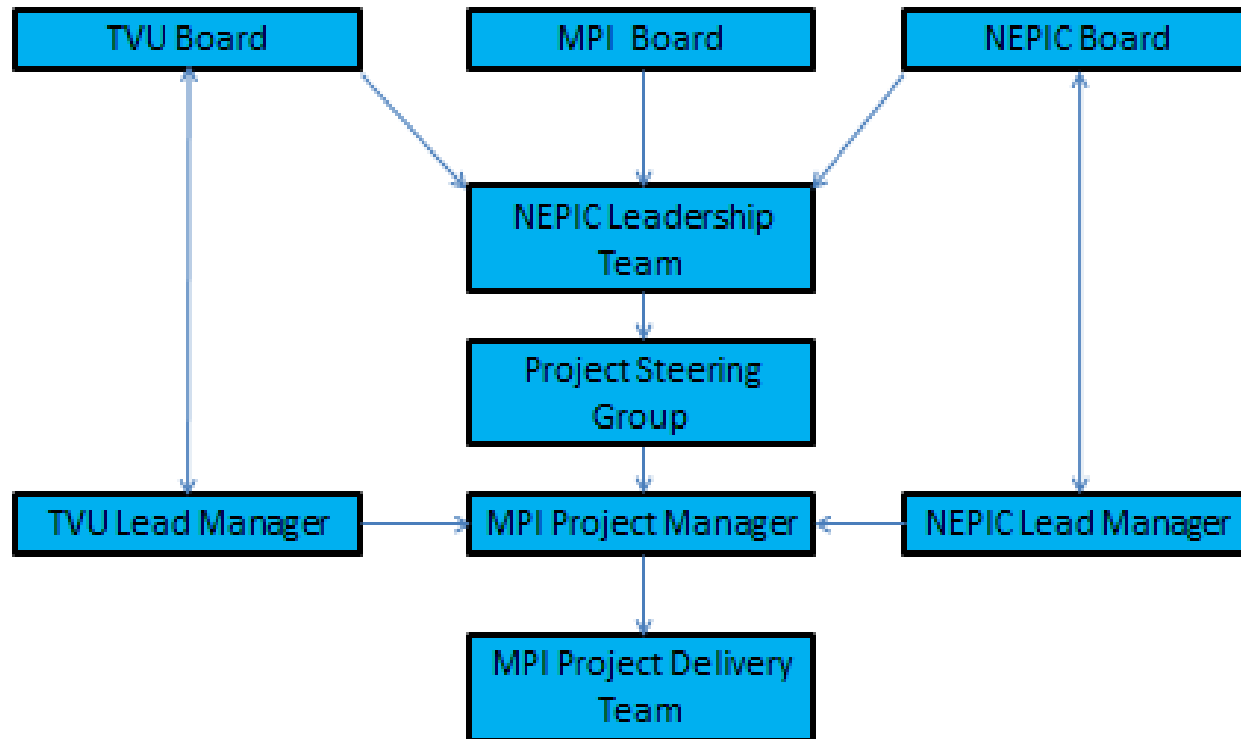


# CONTRIBUTORS:





## PROJECT GOVERNANCE AND STRATEGIC BUY-IN



## WHY TVPI IS IMPORTANT TO UK plc



- Tees Valley comprises 58% of the UK Chemical Industry (CBI, TVU)
- £11.4Bn GVA of which 14% is manufacturing (10% UK average) (TVU)
- The region accounts for a trade surplus >£4Bn pa (TVU)
- Supports a huge diversity of downstream value chain:
  - Advanced manufacturing
  - Automotive
  - Aerospace
  - Petrochemicals and Polymers
  - Pharmaceuticals and healthcare
- High productivity workforce (TVU)
- Centre of excellence for Innovation and Technical Support

Major potential for growth in Advanced Manufacturing and Allied Process Industries

CBI – Facts and figures about the chemical industry (2015)

TVU – Tees valley economic briefing (2015)



## EXTERNAL (GLOBAL) FACTORS, CHANGING PERSPECTIVE

Global chemicals and materials industry has witnessed quantum shift since 2009.....



### **USA**

- Once more competitive on export of commodities
- Shale gas at (\$2-3/MMBTU)
- Improved supply stability & cost base for fuel and power

### **Middle East**

- New petrochemical projects no longer competitive on export of commodities
- Gas prices up significantly to equalise the Persian and US Gulf costs

### **China**

- Labour competitive advantage has eroded to within 5% of total USA “cost to serve a market”
- Local investment has slumped/growth rates need to be recalculated

### **South America**

- Oil & commodities prices hits expansion projects hard. Shale is ‘key’

### **Europe**

- EU-28's GDP growth sluggish. Naphtha price competitive with Asia but not with US gas cracking; renewables not matching shale on cost, convenience nor on CO2 targets.



## CAN UK plc CAPITALISE ?



- UK GDP is growing
- Chemicals and advanced materials global growth faster than UK
- Continued growth will only be achieved if sector remains competitive

### **Additional benefits**

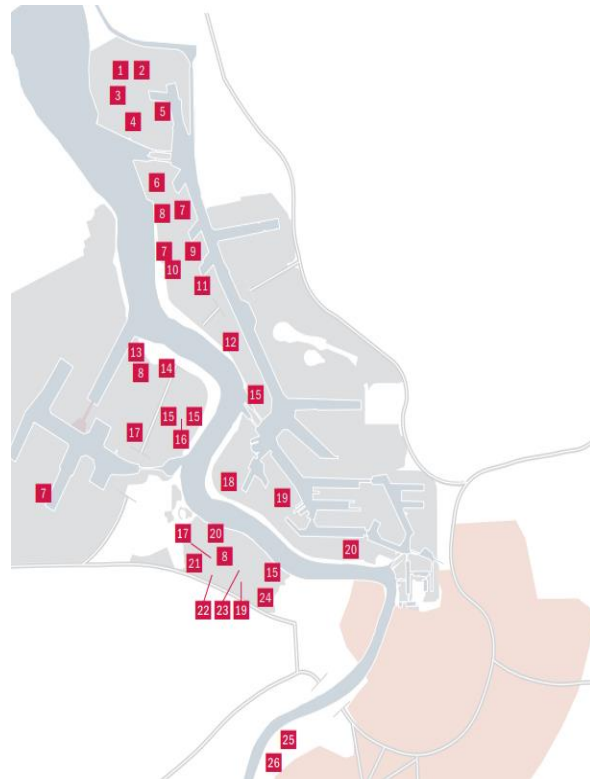
- Enabler for growth throughout manufacturing value chain
  - Advanced manufacturing
  - Automotive
  - Aerospace
  - Petrochemicals and Polymers
  - Pharmaceutical
- Opportunity to bridge the UK skills gap
- Potential to be the furnace that fuels Northern Powerhouse

Model and approach has been proven in Antwerp and Rotterdam, etc.

## COMPETITION - ANTWERP



- 1 DOW Chemical
- 2 BASF
- 3 Styrolution
- 4 Air Liquide
- 5 Eurochem
- 6 IBR (Refinery)
- 7 Solvay
- 8 Ineos
- 9 Monsanto
- 10 Eastman
- 11 Evonik Degussa
- 12 Bayer
- 13 Ashland
- 14 Monument Chemical
- 15 Lanxess
- 16 Lubrizol
- 17 Borealis
- 18 Total (Refinery)
- 19 ExxonMobil (Refinery + Petrochemicals)
- 20 Total (Olefins + Polymers)
- 21 Nippon Shokubai
- 22 Kuraray
- 23 Praxair
- 24 3M
- 25 Kuwait Petroleum (Q8)
- 26 BP



### Rotterdam

An impressive site/hub for containers, refinery and fuel, bio feedstocks, food, grains and minerals.

### Antwerp

Manufacturing hub for downstream development such a car parts moulders and consumer goods.

### TVPI

Has the potential to mirror Antwerp in terms of size/activity.

Has advantages of oil and gas pipeline, coal bed methane, mineral resources and matching infrastructure.

Needs to attract more large players to expand value chain.



## FROM GOVERNMENT, TO REMAIN GLOBALLY COMPETITIVE, TVPI NEEDS...



- Understand the real potential for unconventional gas streams to underpin current and future raw material supply to the sector and the opportunity to create huge value to the UK and Tees Valley economy.
- Use the unconventional gas opportunity, including industrial carbon capture and storage (ICCS), port infrastructure and local supply chain as the main attractants to grow the economy.
- Enumerate the opportunity presented by exploitation of significant local raw material and mineral resources.
- Establish resources to target and support inward investment like our competitors in Antwerp and Rotterdam.
- Provide TVPI with resource to address the symbiotic issues that they have identified as significant opportunities to increase global competitiveness.

# TVPI COMPETITIVENESS THROUGH SELF HELP... ....SYNERGY



## **Symbiosis Facilitator**

- 25 of the companies who took part expressed desire to collaborate/exchange information with a view to maximising value from waste streams/bi-products.
- **Waste Value Enhancement**
- Logistics firms capable of supporting initiative that can reduce costs and improve sustainability and waste companies with speciality in accepting/dealing with problematic streams.

## **Asset maximisation**

- Closure of certain plants should be seen as asset availability; individual opportunities to share assets identified (5-10); land availability

## **Waste Heat**

- Numerous companies suggested an interest in supply of various grades of steam/heat

## **Purchasing Power**

- Service provision opportunities; leverage opportunities for bulk purchasing.

**Overall so many opportunities identified that there needs to be a follow-up to maximise the potential.**

# TEES VALLEY – CURRENT AND FUTURE ?

