



Identifying a Scottish Intermodal Gateway Network or Overcoming Scotland's double peripherality

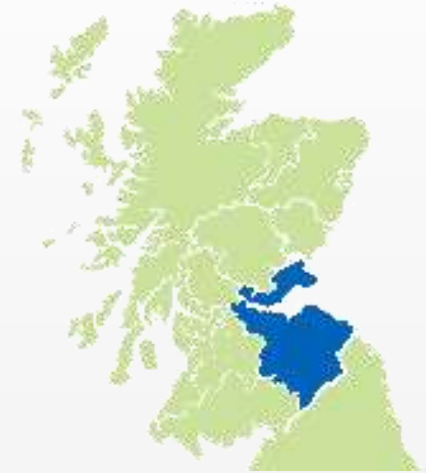
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Overview of SEStran area

- SEStran is one of 7 Regional Transport Partnerships in Scotland. Our partnership area includes 8 local authorities, within an area of 3,180sq miles and is home to 28% of Scotland's population
- There is a huge diversity of transportation issues within the SEStran partnership area, from urban congestion to rural public transport and from ferry ports to airports
- SEStran aims to address these issues and work towards a more sustainable and efficient transport network
- The last decade has seen unprecedented growth in freight traffic within and through the SEStran area which has led to a number of significant impacts and associated pressures on the transport network
- In light of the recent and anticipated future forecast growth, SEStran has set about looking for innovative ways of managing freight traffic and encouraging modal shift to more sustainable means of distribution





A dryport concept?

“A dry port is an inland intermodal terminal directly connected to seaport(s) with high capacity transport mean(s), where customers can leave/pick up their standardised units as if directly to a seaport”

(Leveque and Roso 2002)





Overview of the Dryport – Interreg IVB project

- **Objective:**
 - Examine the critical role that Dryports can play in maximising the capacity and efficiency of sea ports, while also shifting traffic off the roads and on to more sustainable transport modes e.g. rail, secondary ports or inland waterways
 - There is a potential for landward ports providing storage, consolidation, customs clearance and fast efficient land transport links

- **Project period: 2009-2012**
 - 15 European partners
 - Budget: €5.533 million (50% match funding)
 - Support: Interreg IV B North Sea Programme

- **Aims:**
 - Ease congestion within the port and in the surrounding area to solve capacity issues
 - Extend port life cycle
 - Hinterland capture
 - Vertical integration – offer inland transport or logistics services
 - Environmental benefits, jobs, business and regional development



Dryport project partners

- Scotland
 - Transport Research Institute of Edinburgh Napier University
 - SEStran

- England
 - Essex County Council for Haven Gateway
 - Babergh District Council

- Sweden
 - **Region Vastra Gotaland (lead beneficiary)**
 - Falkoping Kommun
 - Port of Gothenburg
 - Banverket Region Vastra Sverige
 - Vagverket Region Vast

- Belgium
 - Port of Zeebrugge
 - Kamer van Koophandel West Vlaanderen

- The Netherlands
 - Gemeente Emmen
 - Provincie Friesland
 - Provincie Drente (sub-partner)
 - Gemeente Coevorden (sub-partner)

- Germany
 - IAW, Bremen University



Dryport project structure

- EU part funded project North Sea Interreg IVB
- 4 work packages:
 1. Finance and land assessment decision making
 2. Modular physical planning of Dryports
 3. Delivery of an IT system and security guidance as a blueprint for Dryports across Europe
 4. Environmental interface including delivery of monitoring data for carbon neutral freight handling

Scottish project vision

- SEStran / TRI involvement in the Dryport Project will enable delivery of RTS objectives
- Assist the development of sustainable and integrated freight movements to and from Scotland
- Influence the development of transport proposals that will enhance Scotland's economic competitiveness
- Establish a Scottish Intermodal Gateway Network (SIGN) – making intermodal options visible





The Scottish Dryport Project – Approach

- Analysing existing infrastructure and services related to hub ports and the potential for improvement
- Identifying potential sites for a Dryport with efficient distribution and consolidation
- Discovering future freight movements to Scottish ports
- Understanding the issues and developing solutions





The Scottish Dryport Project (2)

- Work streams SEStran:
 - Road freight routing strategy
 - Rail freight development and marketing
 - Freight Consolidation Centre Study
 - Sustainable Urban Distribution
 - STAG appraisal of rail links to Rosyth
 - Levenmouth Rail Freight Study
 - STAG appraisal of A801 at Avon Gorge to improve road freight access to Grangemouth

The Scottish Dryport Project (3)

- Work streams TRI:
 - Analysis of Scottish freight flows
 - Identification of “leakage” through English ports
 - Case studies, site visits & interviews: Sweden, Spain, Netherlands, Belgium, Germany, USA
 - Selection of potential development strategies for Scotland. Dryport/port centric logistics/offshore hub/etc.



Scotland's double peripherality

“It is when a thing is beginning to disappear that the concept appears. Take globalisation: if there is so much talk of it, as obvious fact, as indisputable reality, that is perhaps because it is already no longer at its height and we are already contending with something else.”

Baudrillard, 2007



Peripherality

- Peripheral regions and nations within the EU generally enjoy a balanced mix of transport alternatives for access to the Continent's economic centre.
- Peripherality invites additional technical, financial and market discontinuities which further challenge accessibility.
- Peripherality is not simply a status – it is a process of becoming peripheral (Knowles, 2006).



Defining the double peripherality of Scotland

- Scotland relies heavily on maritime services via “remote” southern English seaports
 - high relative dependence on land transport, particularly road
- Direct maritime services for unitised freight to Scotland are scarce in comparison to countries of similar population size and geography
- Scotland’s physical geography affords major opportunities for maritime solutions to help reduce peripheralities in respect of both internal and external linkages
 - double periphery impacts

**Peripherality with regard to Europe and
peripherality within the UK**



Why does Scotland suffer poor direct maritime accessibility?

- Absence of equality between transport modes
 - 'free' highways in the UK
 - technological obsolescence
 - cost of existing seaport infrastructure (in Scotland),
 - lack of sufficient government initiative to help promote direct links
- Political-institutional factors
 - Southern pull of British centralised government
 - lack of appropriate maritime transport policy and provision
 - failure to exploit the potential benefits of Scotland's natural maritime highways (Baird et al., 2010).





Understanding reasons for current logistics strategies

- Governments often have a role to play in shaping supply chains
- Supply chains forced into sub-optimal paths due to reasons other than supply and demand
- Resulting sub-optimal paths are then exacerbated by issues of path dependency, decreasing the visibility of alternative options.
- Similarly, the notion of transport solely as a derived demand has been challenged and reformulated as an integrated demand (Hesse & Rodrigue, 2004; Rodrigue, 2006; Panayides, 2006)

Freight flows and spatial development impeded by networks of nodes and hubs that may not perform their key functions adequately.

The (current and proposed) functions of these hubs need to be understood properly in order to incorporate their effects into an economic geography of freight transport for Scotland.

Scotland's international freight flows

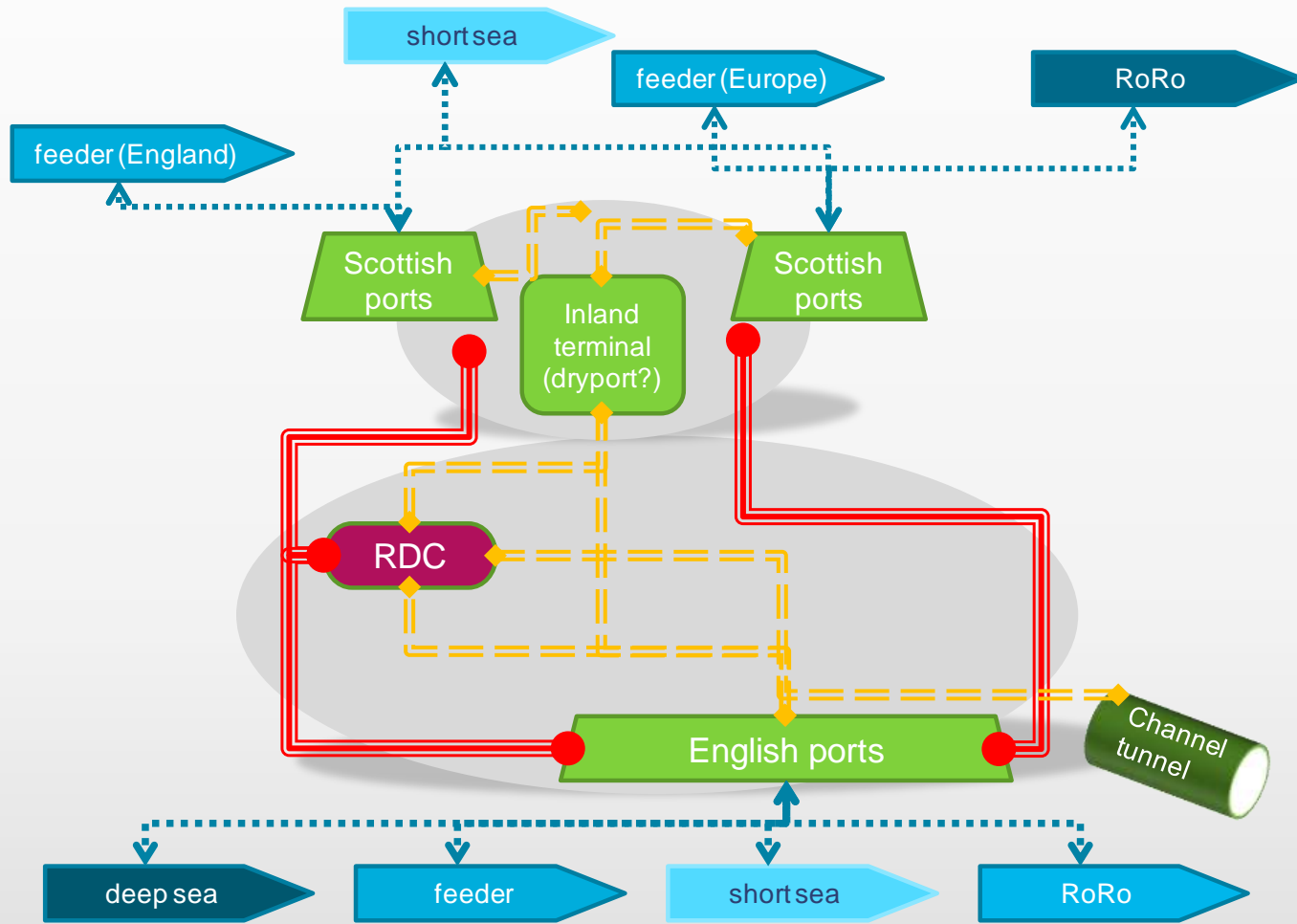
Understanding spatial pattern and identifying leakage



- Scotland's limited accessibility reflected in the limited share of total Scottish unitised freight traffic coming through Scottish ports today.
- What are the routes of international transport and freight?
- What is the trade leakage?

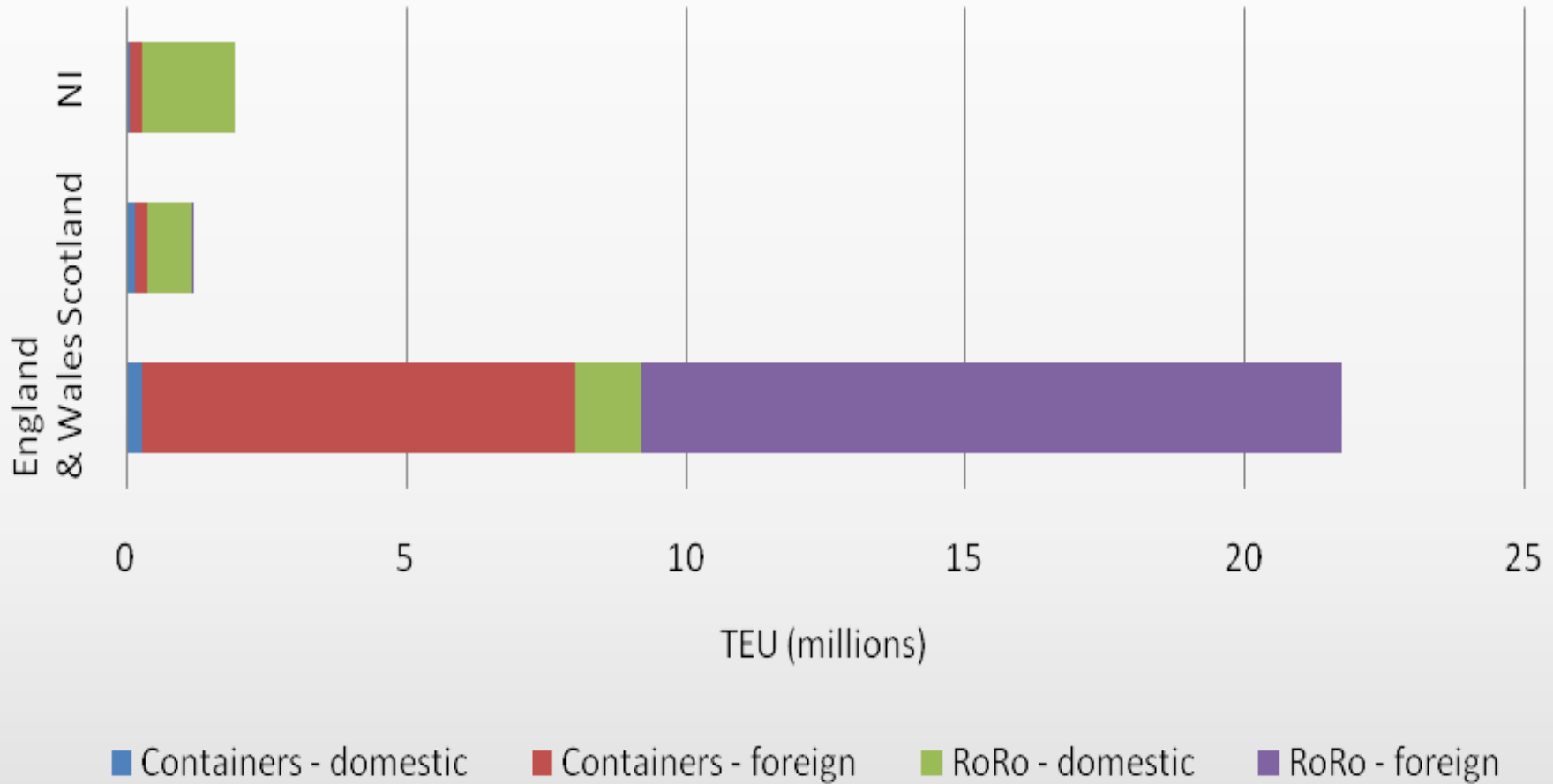


Scotland's external trade flows are diverted





Traffic types – importance of RoRo





Quantifying the leakage

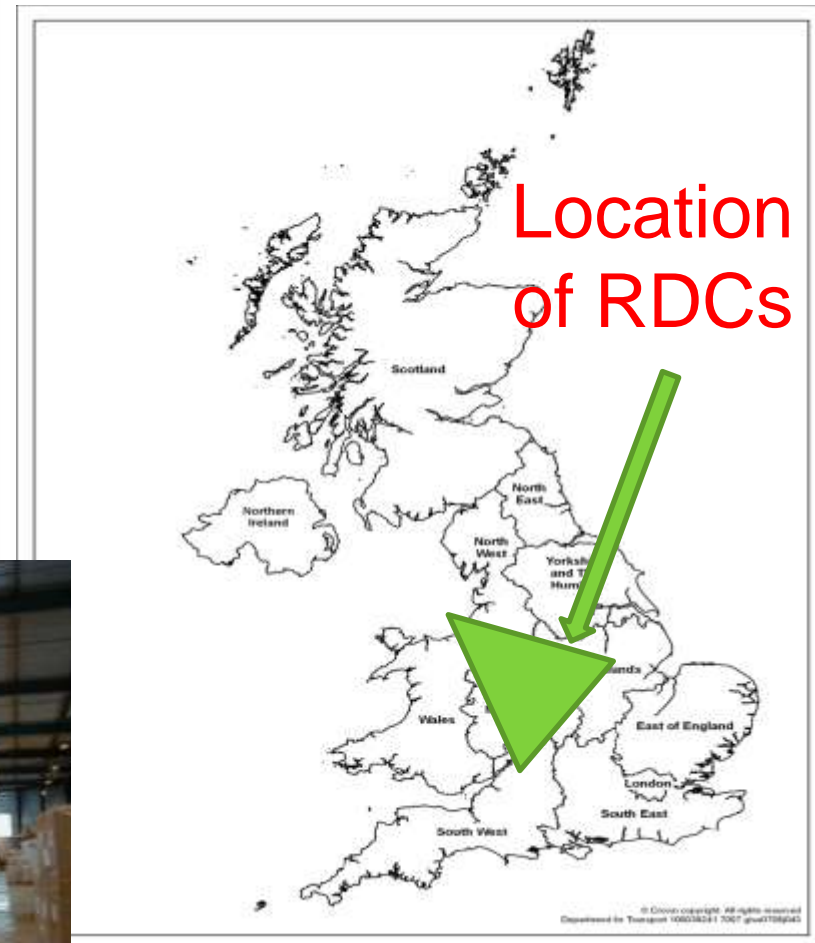
- Est. external trade of up to about 1.7m TEU.
- From European ports: 240,000 TEU
- Feeder from English ports: 116,000 TEU
- Rail from English ports: 73,000 TEU
- Rail from England: 115,000 TEU
- European road traffic (via English ports): 120,000 TEU

Where is the rest?



Historic path dependency

- Much of Scotland's freight is consolidated/routed by road via RDCs in England
- Scottish ports have not developed a gateway function





Scotland – rest of UK by road (2008)

Origin/destination	Entering Scotland (000t)	Leaving Scotland (000t)	Total (000t)	% Share	Trailers#	TEU*
North East	3,589	2,619	6,208	20	458,945	975,259
Yorkshire & the Humber	2,318	2,137	4,455	14	331,473	704,380
North West	7,098	3,685	10,782	34	789,958	1,678,661
East Midlands	1,136	565	1,701	5	124,483	264,527
West Midlands	1,555	996	2,551	8	187,905	399,299
East	833	671	1,504	5	111,525	236,990
London	161	231	391	1	29,483	62,651
South East	489	708	1,197	4	90,207	191,690
South West	584	245	829	3	60,399	128,348
Wales	363	629	992	3	75,066	159,516
Northern Ireland	329	360	689	2	51,530	109,502
Total	18,454	12,845	31,299		2,310,975	4,910,822
	59%	41%	100%			

Average payload given by DfT as 12.7t (outbound) and 14.2t (inbound)

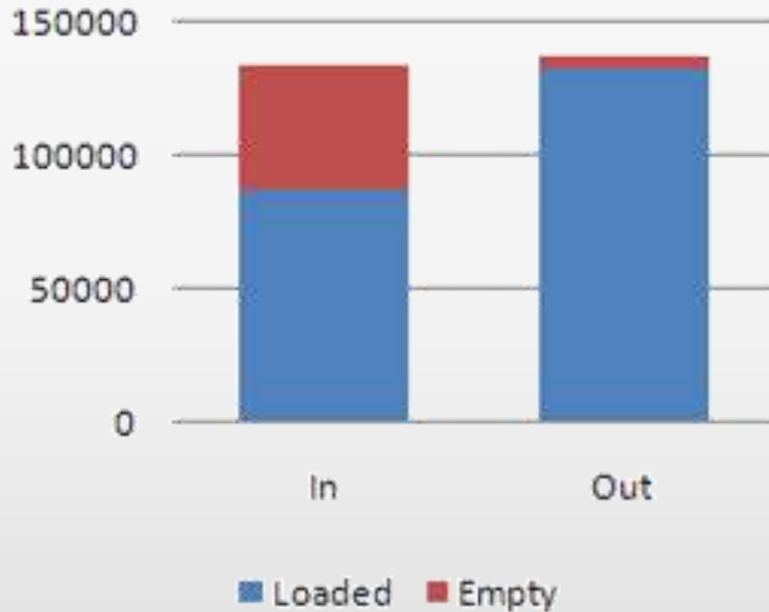
* 1 trailer = 2.125 TEU

Source: STS, 2009



Container imbalance – Scotland is a net exporter

Grangemouth (East Coast)



Clyde (West Coast)





Issues for Scottish shippers

- Feeder cargo is lower priority at hub ports.
- Carriers are now charging for box repositioning.
- Wrong equipment available sometimes (e.g. hi-cubes)
- Provider choice is restricted (not all lines want to serve Scotland)





Impacts on Scottish trade

- Shortage of export boxes in Scotland
- Added costs & reduced service



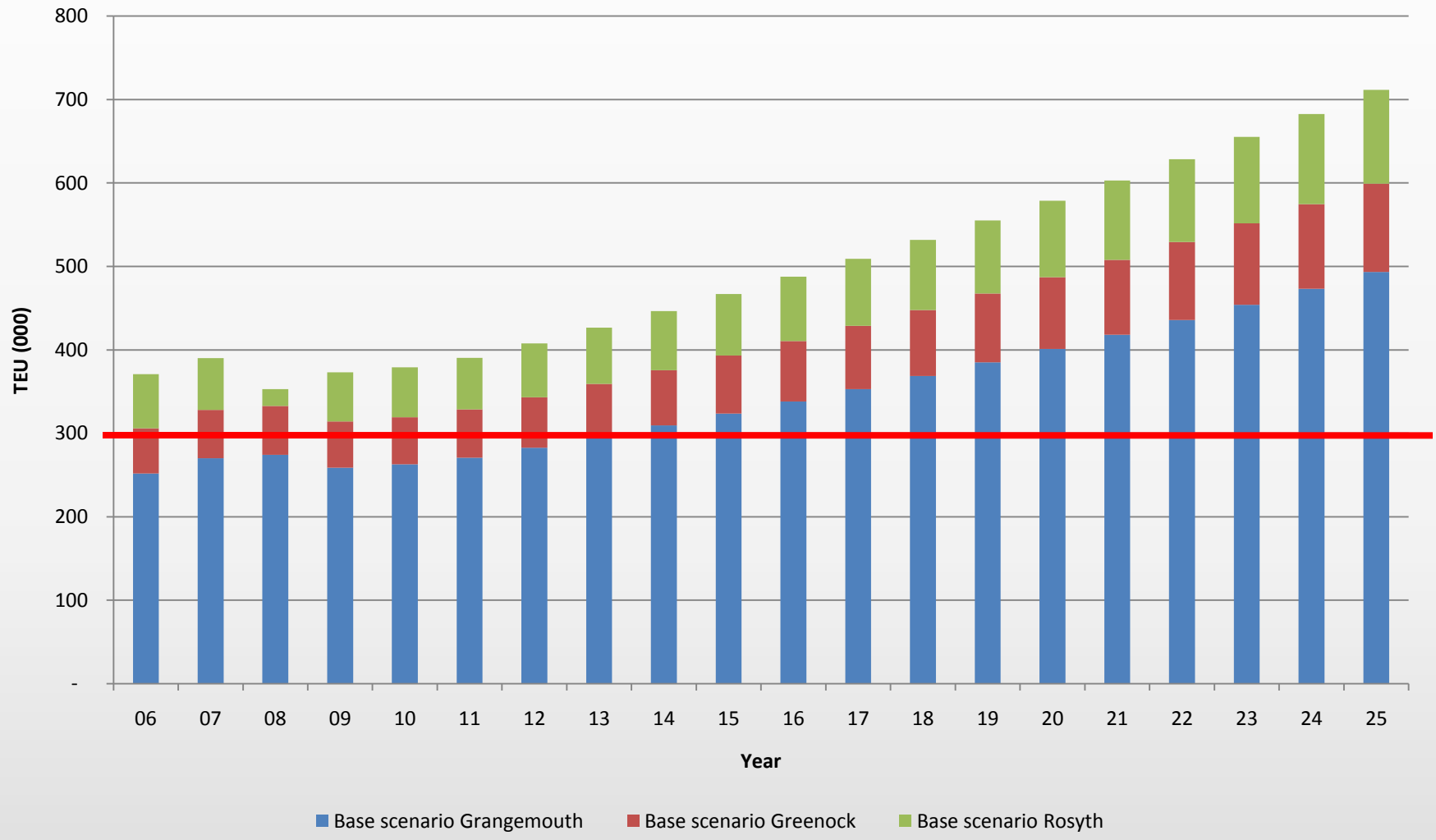
Penalty of
peripherality



- Large retailers using English RDCs, which exacerbates imbalance



Port capacity in Scotland (base scenario)





The penalty of peripherality

- Trade flows in Scottish ports and terminals do not represent Scottish trade
- Strong dependence on long distance road transport and a low participation of Scotland's ports as gateways to Scotland's external trade
 - Reasons: historical developments, political reasons, a lack of congruency and integration of policies and funding schemes
- Implications on trade:
 - long distance road transport contributes to highway congestion and high emission levels for Scotland's external trade.
 - added cost of repositioning.
 - shortage of boxes and types of equipment caused by lines holding minimal stock.
 - Choice of transport provider is restricted
 - Feeder cargo is of less priority to lines at hub ports



What is the solution?

- Overcome current path dependency
- Research is needed to increase visibility of flows through England.
- Intermodal inland terminals and Scottish ports have not received the political attention necessary to drive competitive infrastructure development
- The private sector in ports has not focused on port development from the perspective of creating wider economic returns for the national economy.

- Current logistics solutions are potentially unsustainable
- What arguments can be brought forward to convince major retailers to change their logistics chains and strategies?
- Marketing of existing intermodal options in Scotland's Dryports
- Need for port development

- Increase direct imports to Scottish ports and use of existing "Dryports".
 - Capturing 10% of diverted flows would ease imbalance
 - Capturing 15% requires substantial development in port infrastructure in Scotland



THANK YOU

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