UNIVERSITY OF CAMBRIDGE | Electricity Policy Research Group

NERA ECONOMIC CONSULTING

EPRG Winter Seminar

European Gas and Electricity Policies

The EU Gas Target Model: Towards a Market in Gas Transportation?

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Overview

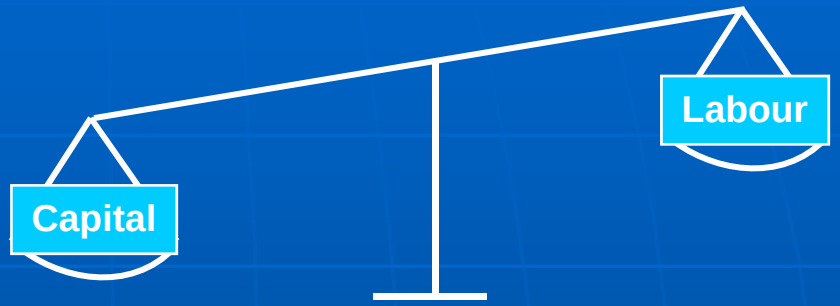
- The context for EU energy market liberalisation
- The EU's Governance Trilemma
- The state of play in EU electricity and gas
- The energy infrastructure investment challenge
- The EU approach to gas transmission
- Modifying Entry-Exit

The Context for Energy Market 'Liberalisation'

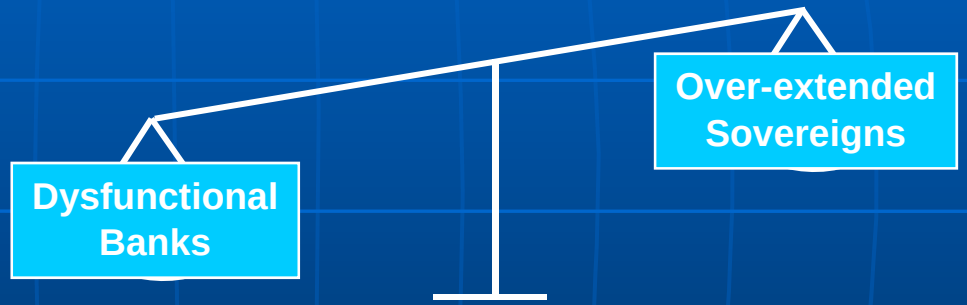
- Democracies are governed by laws
  - Enacted by popular consent
- Laws establish institutions and the 'rules of the game'
- Institutions and the 'rules of the game' govern:
  - The role of, and boundaries between, the state and markets
  - The functioning of markets and
  - Interactions between the state and markets

An Era of Imbalances – and Crises

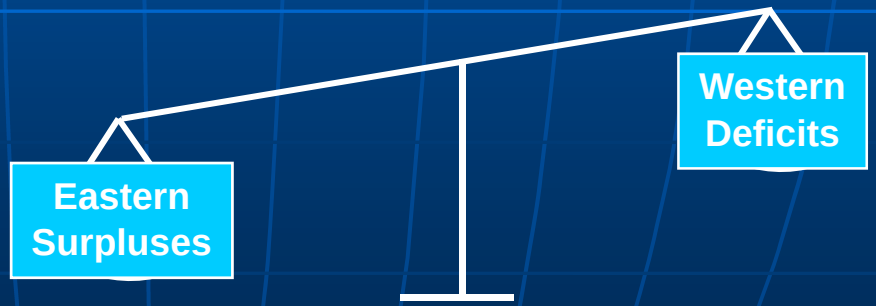
Rewards



Funding

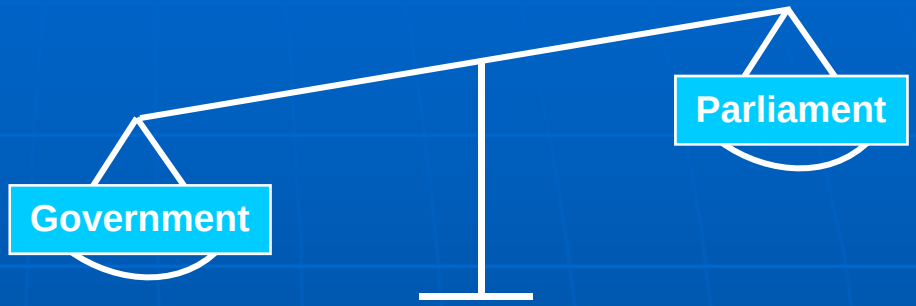


Current Accounts

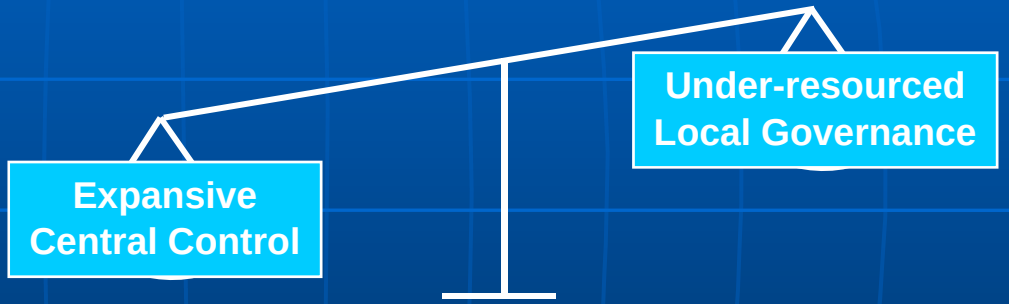


Contributing Underlying Imbalances

National Policy Decisions



Implementation



Market Power

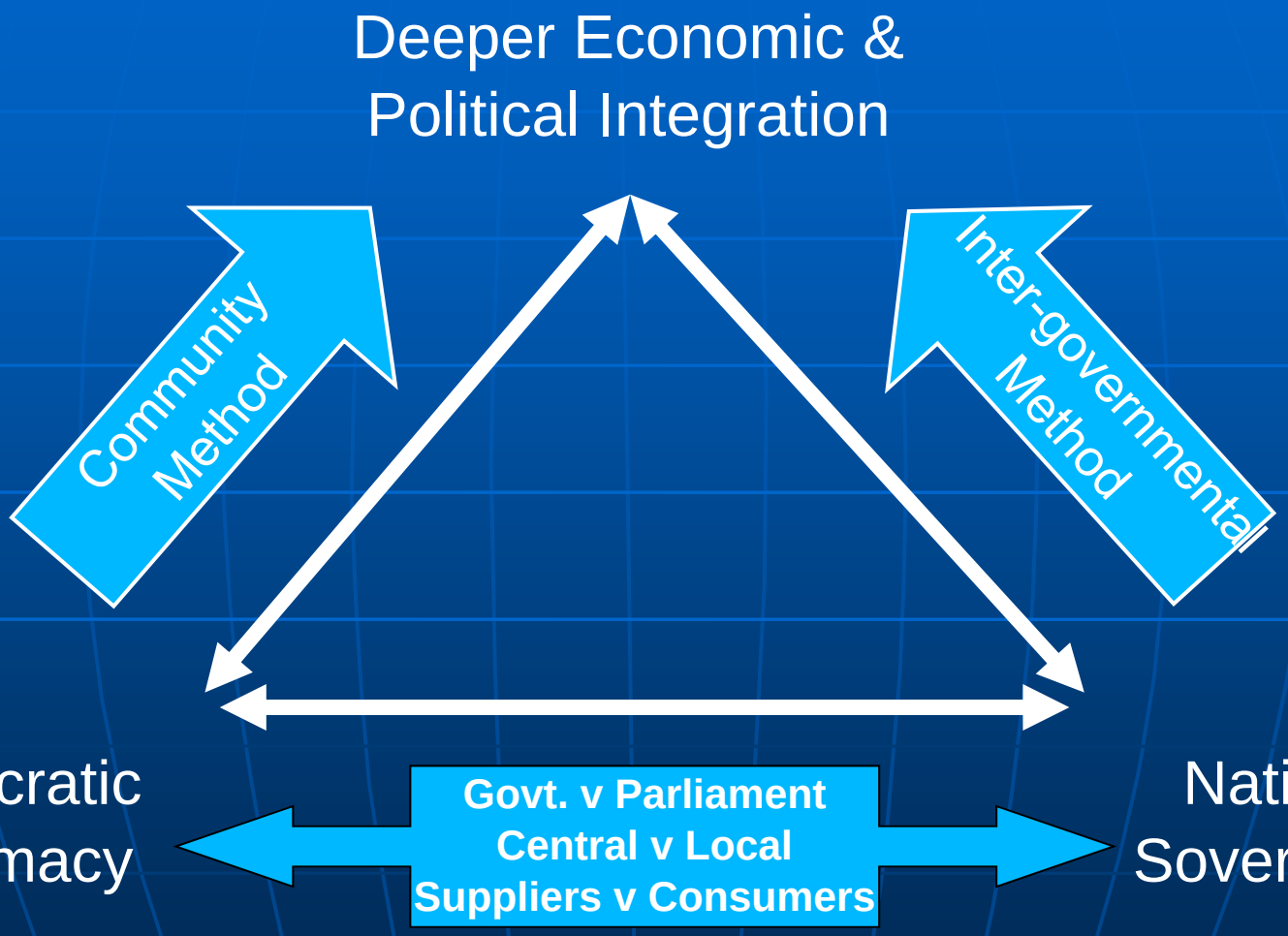
Imbalances interact..reinforce each other..and create dysfunction

- Well-resourced civil society bodies represent narrow sectional economic interests
  - Firms of all sizes in all sectors, the professions, occupational groups, pensioners, etc.
  - An ‘industry’ of researchers, analysts, lawyers, accountants, PR operatives, lobbyists, ‘tame’ consultants, etc. dedicated to rent-seeking
- Governments can’t avoid being influenced unduly
- Parliament is effectively by-passed
- The unorganised and those unable, collectively, to exercise economic or political influence lose out
- Dysfunction and detriments abound

Securing Democratic Legitimacy…or the Joys of the Public Consultation Process

- Generally Government has a clear idea of its preferred policy option
  - Major affected parties are normally ‘squared’ in advance (or they have lobbied successfully)
- Views of interested parties are solicited
  - Those who concur get a ‘pat on the head’
  - Submissions that present a critique, expose woolly-thinking or special-pleading or advance alternative options are ignored, rejected or dismissed
  - Reasons for rejection, if provided, offer no opportunity for a counter-rebuttal
- Government conveniently secures confirmation of the answer it had decided on at the start.
- Economic regulators have turned this process into an art form

The EU's Governance Trilemma



EU Electricity & Gas: the Current State of Play

- Energy Article in the TFEU and the TLP
  - 'in a spirit of solidarity' promoting/ensuring
    - Market functioning, Security of supply, Energy efficiency and renewables and Interconnection

    But
    - Allows considerable national discretion
- Regulation
  - NRAs, ERGEG, ACER
- Instruments
  - Regulations, Guidelines of Good Practice, Framework Guidelines, Network Codes
- Forums, Associations
  - Florence, Madrid, London, ENTSO-E, ENTSO-G, Euroelectric, Eurogas, GEODE, large energy users' associations, BEUC
- Market participants
  - Producers, generators, (mainly) vertically integrated (often dominant) suppliers, traders (physical and paper), TSOs, DSOs (some fully unbundled) and smaller suppliers

The Final Consumer's Lament

- Competition and choice with full retail competition were supposed to protect and advance consumers' interests; they don't
- Multiple, confusing and (for suppliers) profitable tariffs for services that can't really be differentiated
- Excessive market power of dominant suppliers (operating in a quasi-cartel) exploits individualised and atomised final consumers
- Suppliers impose considerable information, search and switching costs on consumers
  - Not recognised by policy-makers, regulators or suppliers
- No effective advocacy or representation of the collective interests of final consumers

The Energy Infrastructure Investment Challenge I

- The EU (and national governments) envisage a huge requirement for energy infrastructure investment
- Previously, final consumers provided a solid, almost indefinite, commitment to their (monopoly) suppliers to consume and pay for gas
- This commitment provided the basis for long-term contracts for bundled transmission and supply services that assured recovery of investment

But

- Integrated, exclusive suppliers provided the quality and level of service that suited them, expropriated the consumer surplus and shared this with producers
- 'Liberalisation' was intended to address these detriments

The Energy Infrastructure Investment Challenge II

- The time horizon of investors in gas production and transmission has remain unchanged

But

- Final consumers, ‘shopping around’ in short-term markets, can no longer provide the long-term commitments required
- Catch 22
  - Increased consolidation of vertically integrated suppliers has retarded the emergence of deep, liquid wholesale markets in gas
  - Lack of depth and liquidity has encouraged further vertical integration and the internalisation of risk and risk management – services that these markets could, and should, provide

The Energy Infrastructure Investment Challenge III

- Many utilities hollowed out their balance sheets to maximise short-term shareholder returns
- The on-going ‘credit crunch’ is restricting access to long-term finance
- Providers of long-term finance don’t see the contractual or other assurances of investment recovery they require
  - Either no finance or finance at a high cost of capital
- Regulators forced to provide assurances on regulated investments
- Suppliers forced to extract cash-flow ‘up-front’ from consumers
- EU (and national governments) forced to throw taxpayers’ money at the problem

The EU Approach to Gas Transmission

- Gas transmission treated the same as electricity transmission; it shouldn't be
- Within defined technical and operating parameters gas transmission capacity may be quantified precisely on a point-to-point basis and specified in a long-term tradable contract
- The latest Gas Regulation
  - proscribes contracting for transmission capacity on a point-to-point basis and
  - mandates Entry-Exit pricing

Entry-Exit Transmission Pricing

- Establish amount of transmission revenue to be recovered via Entry-Exit tariffs
- Define transmission system in terms of entry and exit points (or zones) and assume all gas entering the system passes through a notional (or virtual) balancing point
  - e.g., NBP, TTF, PEG, PCV, PCG
- Estimate LRMCs of increasing peak day design flows from each entry point to each exist point
- Develop algorithm to derive separate tariffs
  - from each entry point to the balancing point
  - from the balancing point to each exit point
- Scale tariffs to ensure recovery of required amount of transmission revenue

Attractions of Entry-Exit

- Priority of dominant integrated incumbents to recover investment
  - E-E defines the “pot”
- Difficult to identify capacity utilisation and to establish cost causation on “meshed” systems
  - E-E does not require either
- Use of external and internal EU border points to define transmission systems
  - Boundaries of E-E systems are defined in these terms
- Limited external interconnection
  - Encourages trading at virtual hubs

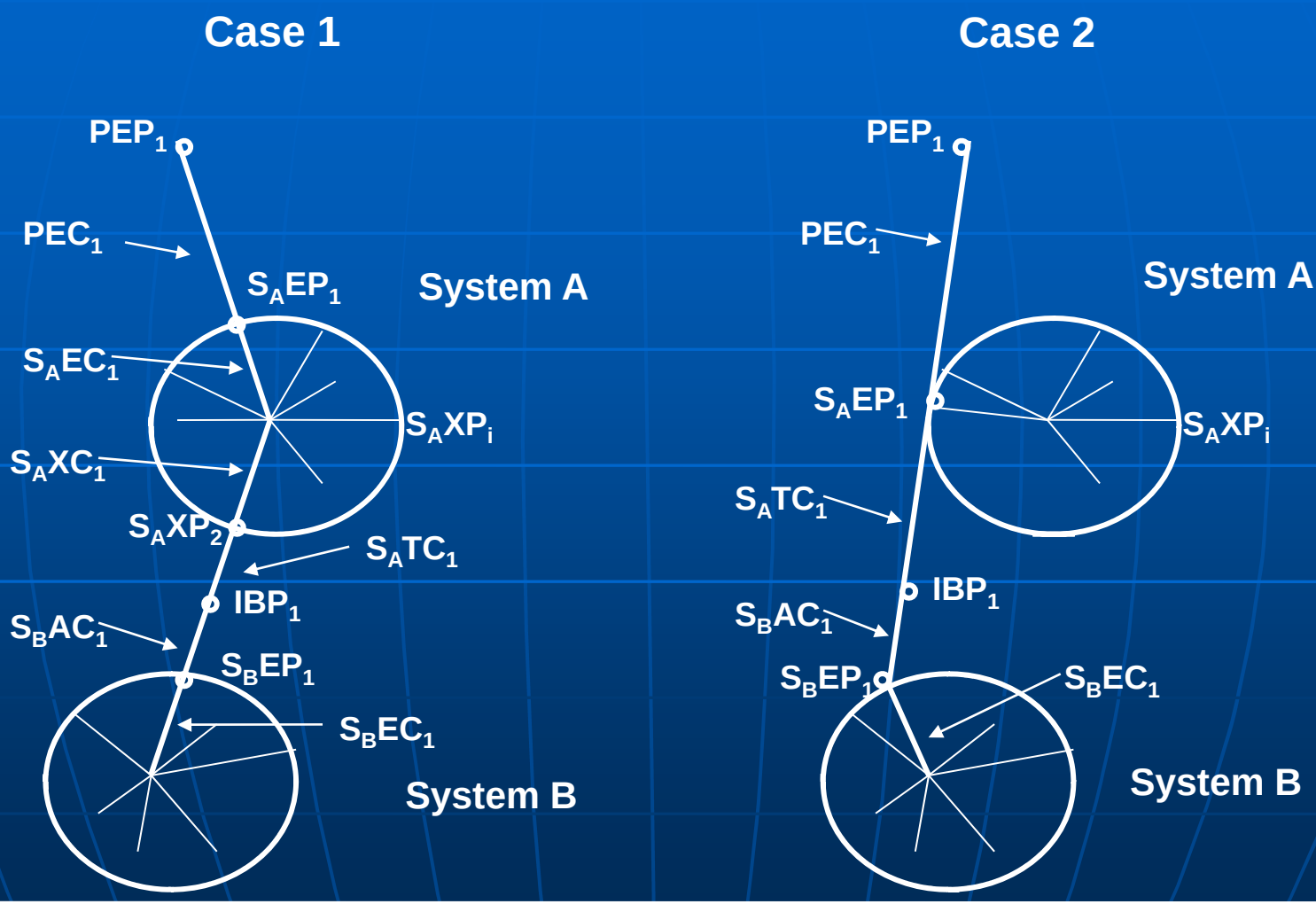
Entry-Exit Deficiencies

- Absence of clearly-defined, tradable transmission rights
- Price and value of gas not linked to physical location
- Continued centralisation of investment decisions
- Complex and unnecessary generation of price signals

Remedying the Deficiencies

- Reduce the scope of Entry-Exit systems
- Define Into-hub and Inter-hub capacity
- Revise and simplify Entry-Exit tariff calculation
  - Ensure recovery of fixed costs (primarily quasi-rents)
  - Reflect the underlying system costs

Defining Into-hub and Inter-hub Capacity



A Possible Way Forward

- Reduce E-E scope and define Into-hub and Inter-hub (I + I) capacity
- Confine NRAs to regulation of E-E systems and empower ACER to regulate I + I
- Develop and apply uniform method of asset valuation and regulatory accounting
- Revise and apply E-E tariff mechanism
- Quantify and price I + I capacity
- Devise and apply capacity allocation mechanism
- Enforce ‘interoperability’

In conclusion..

- The Euro crisis is compelling the EU to address some fundamental governance issues and the imbalances that underlie them
- Similar imbalances underlie its approach to electricity and gas market liberalisation
  - These, also, need to be addressed
- A competitive market in gas transportation capacity is achievable
- But not under the current approach

Finally…

Thank you

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