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3rd Technical Workshop: Gas Market Design and Natural Gas Transmission Grid Codes

Regulatory Framework & Incentives for Infrastructure Development

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AGENDA

- A. Is new infrastructure necessary?
- B. Investment in a liberalized market based on TPA: issues and solutions
- C. Incentives for investments: the EU regulatory experience



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A. Is new infrastructure necessary?



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IS NEW INFRASTRUCTURE NECESSARY?

- Gas demand expected to slowly recover in Europe, possibly decline after 2020 due to renewable energy expansion, efficiency
 - However, gas is expected to remain as backup
 - 500 hours/year with no wind or sun
- Carbon free gas may emerge
 - Biogas, Hydrogen, Power to Gas
- Peak demand – and hence infrastructure - may grow even if total consumption declines
- Currently missing links between markets may be useful to foster market integration, competition, and security of supply

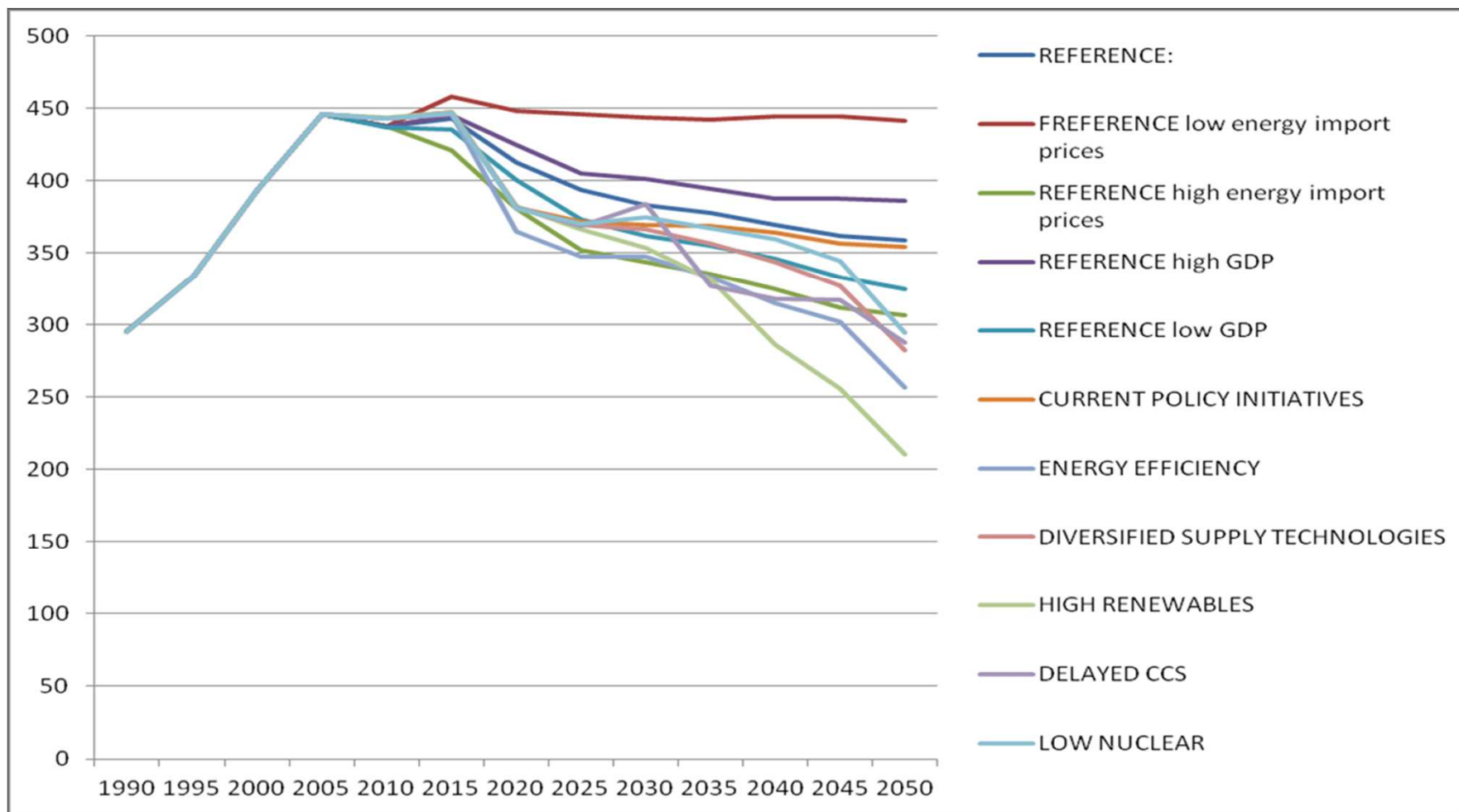


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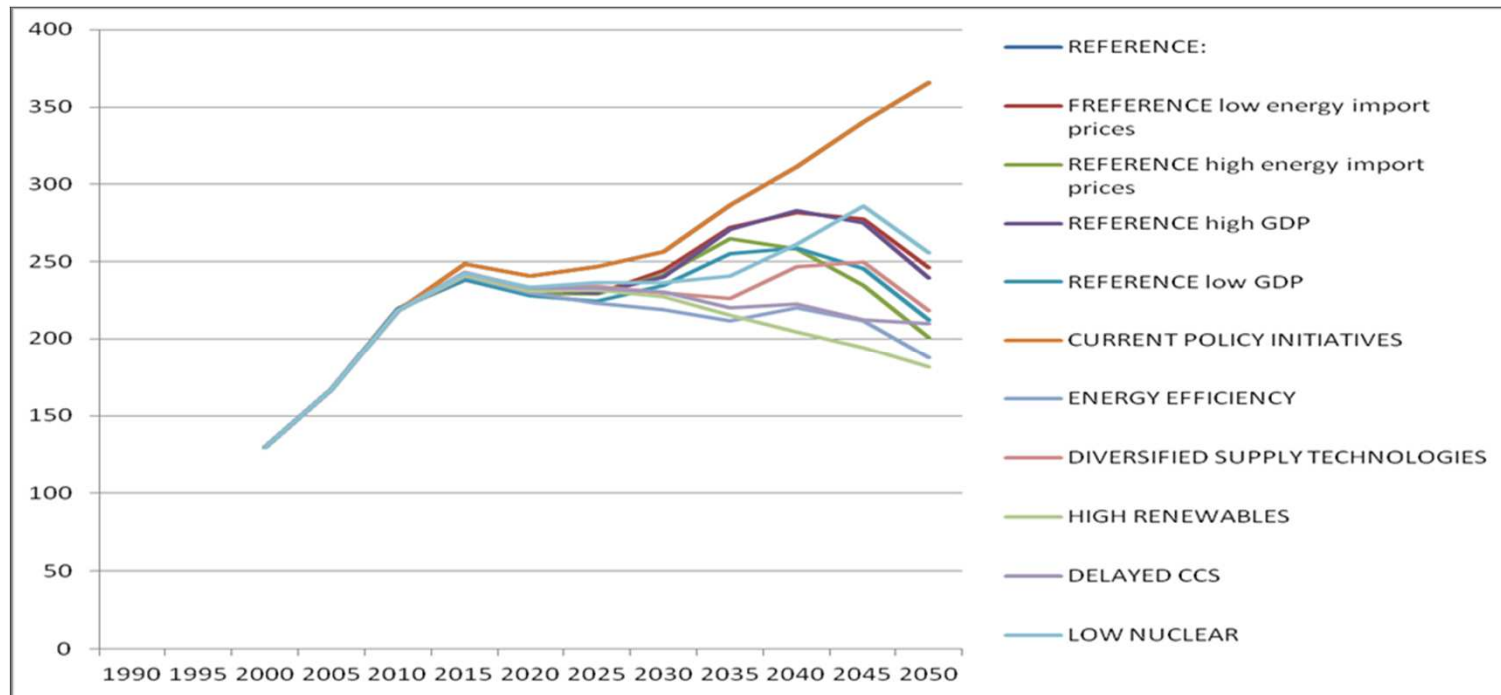
GAS DEMAND OUTLOOK: IEA SCENARIOS





GAS INFRASTRUCTURE CAPACITY: DEMAND OUTLOOK

- Gas-fired power generation capacity may increase, remain stable or fall



- The same will happen to pipelines, LNG terminals and storage!



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B. Investment in a liberalized market based on TPA: issues and solutions



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INVESTMENT ISSUES IN LIBERALISED MARKET WITH THIRD PARTY ACCESS TO INFRASTRUCTURE

- Reduced investment after liberalization due to:
 - Incomplete unbundling, leading incumbents to avoid developing new capacity to be used by new market entrants
 - Regulatory uncertainty from liberalization, market reform
 - Low regulated rates of return for gas transmission (and distribution)
 - Lack of international co-ordination: costs may fall on transit countries rather than beneficiaries (non-domestic investment problem)
 - Declining gas demand since 2005 in most EU countries (recovering after 2014)
 - No value of developing own capacity, as it is not scarce and is subject to congestion management



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WHO PAYS FOR INFRASTRUCTURE INVESTMENT?

- Long-term commitment needed
- *User pays principle*: market players (as network users or shippers) commit themselves to pay tariffs for capacity
 - Typical tool: open season or integrated auction
- *Ratepayer pays principle*: investment decided by TSOs, regulators / governments, included in asset base and paid by all users through regulated tariffs
 - Typical tool: cost-benefit analysis
- *Taxpayer pays principle*: investment decided and financed by National government, possibly with EU support
 - Typical tool: National, EU budget



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INVESTMENT ISSUES IN LIBERALISED MARKET: SOLUTIONS

- Facilitating market decisions:
 - Market tests (Long-term auctions, *Open seasons*)
 - Alignment of benefits and costs (*Cross-Border Cost Allocation*)
 - Regulatory Holiday (Exemptions from TPA obligations)
 - Easing the Permitting process
- Providing incentives
 - Grants and soft loans
 - Enhanced asset base & regulated returns
- Central planning, command and control
 - Long-term investment plans
 - Streamlined cost-benefit analysis



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OPEN SEASONS (*MARKET TESTS*)

- Established American procedure for market-based decisions on new pipelines & reinforcement of infrastructure
- Imported into Europe with good success
- Investment decisions to be based on results of *market tests*
- Promoters required to advertise new project, allow other parties to join at fair conditions
- Usually offered to book capacity, but it may be also about equity (on a voluntary basis)
- Decision criteria based on financial valuation preferable and most common in U.S.



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OPEN SEASONS: REGULATION

- EU Regulators' *Guidelines of Good Practice for Open Seasons* require two stages:
 1. informative, no commitment
 2. binding commitment
- Regulatory approval of OS rules
- In EU, some governments may be unhappy with OS results only, intervene to require new facilities
 - Security of supply a common reason
 - Risk of unfair competition due to state aid, OS distortions



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OPEN SEASONS: DIFFICULTIES

- Poorer results of open seasons in the last 2 years
 - Demand stagnation and allocation by auction freed capacity at interconnection points in Europe
 - Less necessary to commit long term if short-term capacity may be obtained at similar prices
 - EU's Tariff Network Code limits scope of discounts for LT bookings
 - If shippers believe that governments or regulators want to invest anyway, reduced incentive towards LT commitment
 - Outcome may be heavily influenced by some large market player
- Open seasons work well in no-TPA regimes (as in USA), but have limited success under TPA



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LONG TERM AUCTIONS

- LT capacity auctions as sale of multiple ST product for entry points in EU
 - up to 15 years
- For large-meshed systems like Europe, difficult to select paths to put up for auction
- If auction single interconnection points, users may not be interested and prefer to wait for ST capacity
- Regulated tariffs used as reserve price



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INCREMENTAL CAPACITY NETWORK CODE AMENDMENT

- Amendment to Capacity Allocation (CAM) Network Code
 - Approved as EC Regulation 2017/459
- Market test required and binding commitments identified
- Cost estimated: investment impact on TSOs' Allowed Revenue
- Regulators will ensure that remaining capacity will be paid by network users if the following *Economic Test* is passed: Sum of Binding Commitments / Increased AR > f (%)
- f % is decided in advance by concerned regulators
 - May be related to “public good” of infrastructure (e.g. security of supply, market interconnection), duration of binding commitments, estimation of future demand growth
- To be done jointly in case of “bundled capacity” (e.g., for interconnectors)



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INCREMENTAL CAPACITY ALLOCATION

- Incremental capacity is in principle allocated by auctions
- If the process is found as not feasible, given the duration of commitments, an *alternative allocation mechanism* may be applied subject to one of the following conditions:
 - a. commitments linking or excluding commitments at other interconnection points;
 - b. commitments across a number of different yearly standard capacity products at an interconnection point;
 - c. commitments conditional on the allocation of a specific or minimum amount of capacity.
- In this case, allocation may be extended to max. 20 years
- Regulators may set aside max. 20% of capacity for shorter term
- Regulators must approve the alternative allocation mechanism



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C. Incentives for investments: the EU regulatory experience*

(*) The main source of this analysis is the EC Study on regulatory incentives for investments in electricity and gas infrastructure projects, by AF-Mercados & REF-E, 2014.



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THE EU INFRASTRUCTURE PACKAGE (REGULATION 347/2013)

- Limited capital subsidies (grants) from European Union
- Projects of Common Interest
 - International: at least 2 Member States affected, even indirectly
 - Approved by Cost-Benefit Analysis pursuant to methodology issued by ENTSOG
 - Streamlined, fast-track permitting procedures (one stop shop principle)
 - Cross-Border Cost Allocation (CBCA): cost to be aligned with benefits
- NRAs to adopt measures in case of *higher risk*
 - art. 13: “Where a project promoter incurs higher risks for the development, construction, operation or maintenance of a PCI (...) compared to the risks normally incurred by a comparable infrastructure project, Member States and NRAs shall ensure that appropriate incentives are granted to that project (...)”



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RISK

- Risk for a project promoter = a factor involving uncertain danger for a project promoter, leading to:
 - Overrun in time and/or cost
 - Project cancellation
- Main risk categories:
 - Policy and legal
 - Planning and permitting
 - Regulatory risks
 - Finance and capital markets
 - Energy markets
 - Technology
 - Geographic distribution of costs and benefits



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REGULATORY APPROACH TO RISK ASSESSMENT

- Usually, only *company* risk is evaluated, as “Beta” within the CAPM framework (used by 22/29 EU NRAs)
- Separate project evaluation by NRAs not common
- As of 2014, only 6/29 NRAs required TSOs to present cost benefit analysis, at least for major projects (5 more NRAs planned to introduce it)
- Regulators often wary of investments, as evaluation is hard and risk of future “stranded costs” pending



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NRAs' REASONS FOR NOT EVALUATING RISK

- Regulators not equipped to assess whether investments are needed, only monitor cost efficiency
- Better to adopt output-based regulation, avoid assessing input adequacy
- TSO operations are holistic, cannot separately assess projects (including PCIs)
- PCIs do not have higher risks – maybe lower due to expected fast-track permitting
- Most risks already mitigated, if / where costs are included into Regulated Asset Base



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NRAs' REASONS FOR NOT PROVIDING INCENTIVES

- Cultural factors: NRAs see themselves mainly as “efficiency watchdogs”
- NRAs cannot ensure ex-ante that all “higher” (risk-mitigating) costs will be allowed, but this is perceived by project promoters as “regulatory risk”
- Assessment of investments are not in the European NRAs' tradition; larger staff would be needed
- NRAs' preference for risk-sharing between consumers and promoters
- In many cases, risk is lowered if higher costs accepted:
 - For example, accepting re-routing or use of sea lines to ease permitting procedures
 - In such cases, further incentives (like higher rates of return) not justified
 - Awarding further incentives would amount to “double counting”



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REGULATORY INCENTIVES TOWARDS RISK

- Mitigators
 - Relieve risk (or part thereof)
 - Facilitating factors.
- Rewarders
 - Increase remuneration towards higher risk
 - Stimulating factors
- Not mutually exclusive



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RISK MITIGATORS

- Inclusion into asset base (RAB)
- Guaranteed recovery of the Allowed Revenue
 - Usually through the “Regulatory Account”
- Longer regulatory periods
- Stability arrangements
- Streamlined permitting procedures
- Exemptions from regulation
- Early recognition of costs
 - Including anticipatory investments undertaken before the facility is operational



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RISK REWARDERS

- Premiums (WACC surcharge)
- Rules of anticipatory investments
- Adjusted depreciation periods
- Exemptions from efficiency gain requirements
- Sliding scale (profit sharing)
- Favorable debt/equity ratio
- Cost plus regulation
 - Guaranteed recovery of actual costs



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EU REGULATORS' GENERAL PRACTICES

- Most EU NRAs adopt mechanisms that protect operators from volume risks, including Regulatory Accounts
- The vast majority of NRAs do not use any specific incentives for investments and, in particular, for PCIs
- In general, regulators are satisfied with the current investment level



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BEST PRACTICES / CASE STUDIES: ITALY (1)

- Gas transport investments
 - Projects for security of supply, gas quality and market support that do not involve additional network capacity receive a 1% increase on the WACC for 5 years;
 - Projects that increase regional network transport capacity receive a 2% increase on the WACC for 7 years;
 - Projects that increase national network transport capacity receive a 2% increase on the WACC for 10 years;
 - Projects that increase national network transport capacity which is ancillary to gas imports receive a 3% increase on the WACC for 10 years; and
 - Projects that increase entry capacity at the country's borders, or investments related to interconnections of gas networks with LNG floating storage capacity and regasification units, all receive a 3% increase on the WACC for 15 years.



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BEST PRACTICES / CASE STUDIES: ITALY (2)

- Gas storage investments
 - Projects to increase the storage capacity of existing gas fields receive a 4% increase on the WACC for 8 years; and
 - Projects for new storage fields and peak shaving plants receive a 4% increase on the WACC for 16 years.
- LNG regasification capacity investments
 - Projects that increase the load factor without capacity development, or capacity developments of less than 30%, are eligible to receive a 2% increase



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BEST PRACTICES / CASE STUDIES: AUSTRIA, LUXEMBOURG, SLOVENIA

- Austria
 - Efficiently incurred investment pre-financing (construction) costs to be included in the RAB and reimbursed at an early stage in the project cycle.
 - An investment premium (3.5%) is available for project promoters to offset the volume risk of projects.
- Luxembourg
 - **WACC increase.** Investments in cross-border interconnections that improve security of supply are eligible to receive a 0.6% increase in the WACC from the point of commissioning of the asset. The incentive has duration of 10 years.
- Slovenia
 - Additional returns on capital, shorter depreciation rates and the recognition of efficiently-incurred costs before project commissioning can be granted to support the investment



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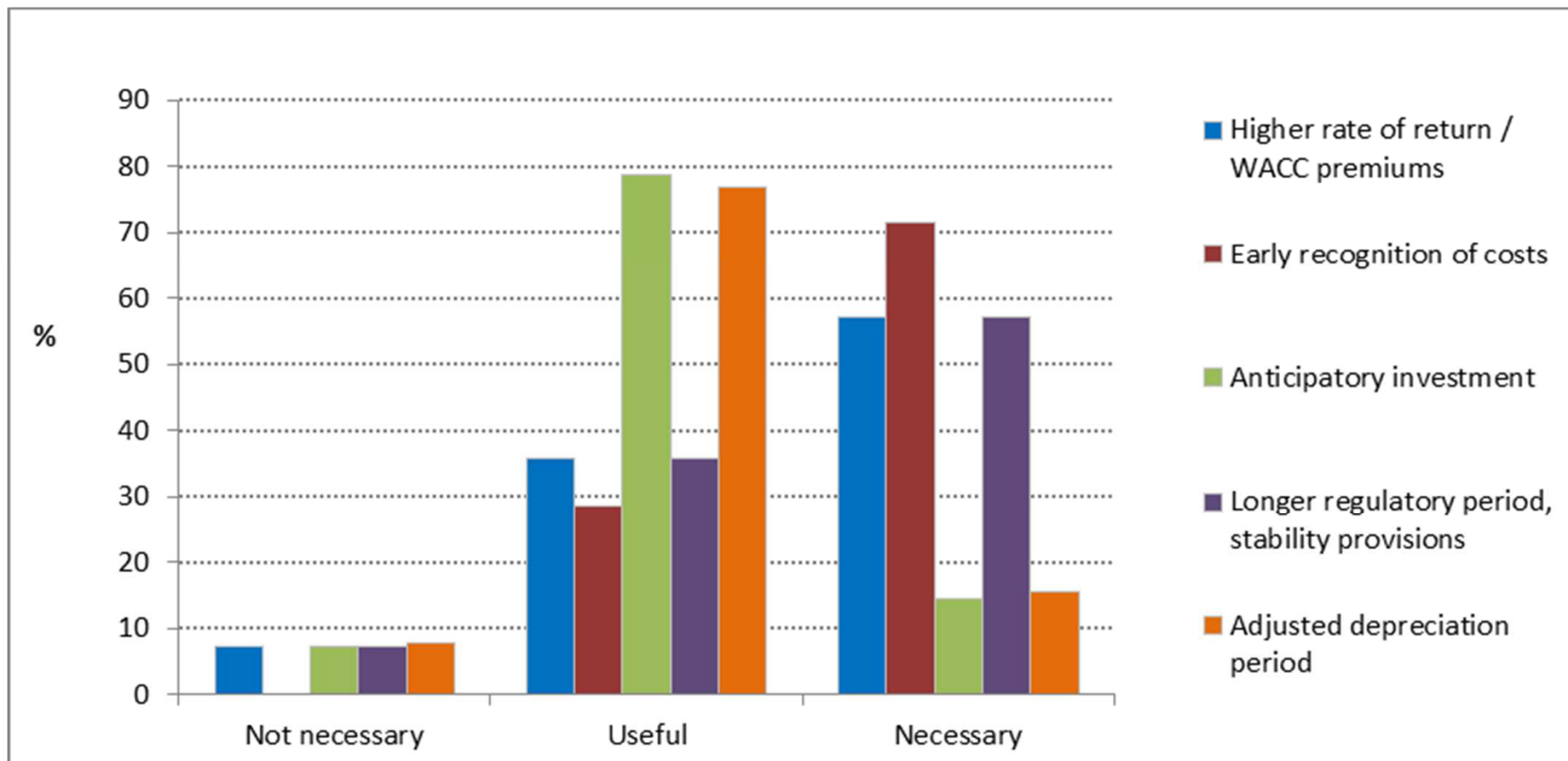
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BEST PRACTICES / CASE STUDIES: GERMANY, PORTUGAL, CROATIA, UK

- Germany: Sliding scale mechanism for volume-related cost under-recovery
- Portugal: Ability to retain CAPEX savings after approval of foreseen cost
- Croatia: Allowed Revenue set and maintained for up to 8 years
- UK: Cap & Floor mechanism to reduce risks of interconnectors (*used for electricity only*)



REGULATORY INCENTIVES FOR INVESTMENT: TSO VIEW



Source: AF-Mercados & REF-E, EC Study on regulatory incentives for investments in electricity and gas infrastructure projects



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THANKS FOR YOUR ATTENTION!

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