Energy Security and Climate Change

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Outline

- Changing energy sources to deliver a net-zero economy
- Current challenges focus attention on energy security
  - Issues of availability and price
  - Security challenges
- Gas
- Electricity
- Macroeconomic implications
- Conclusions

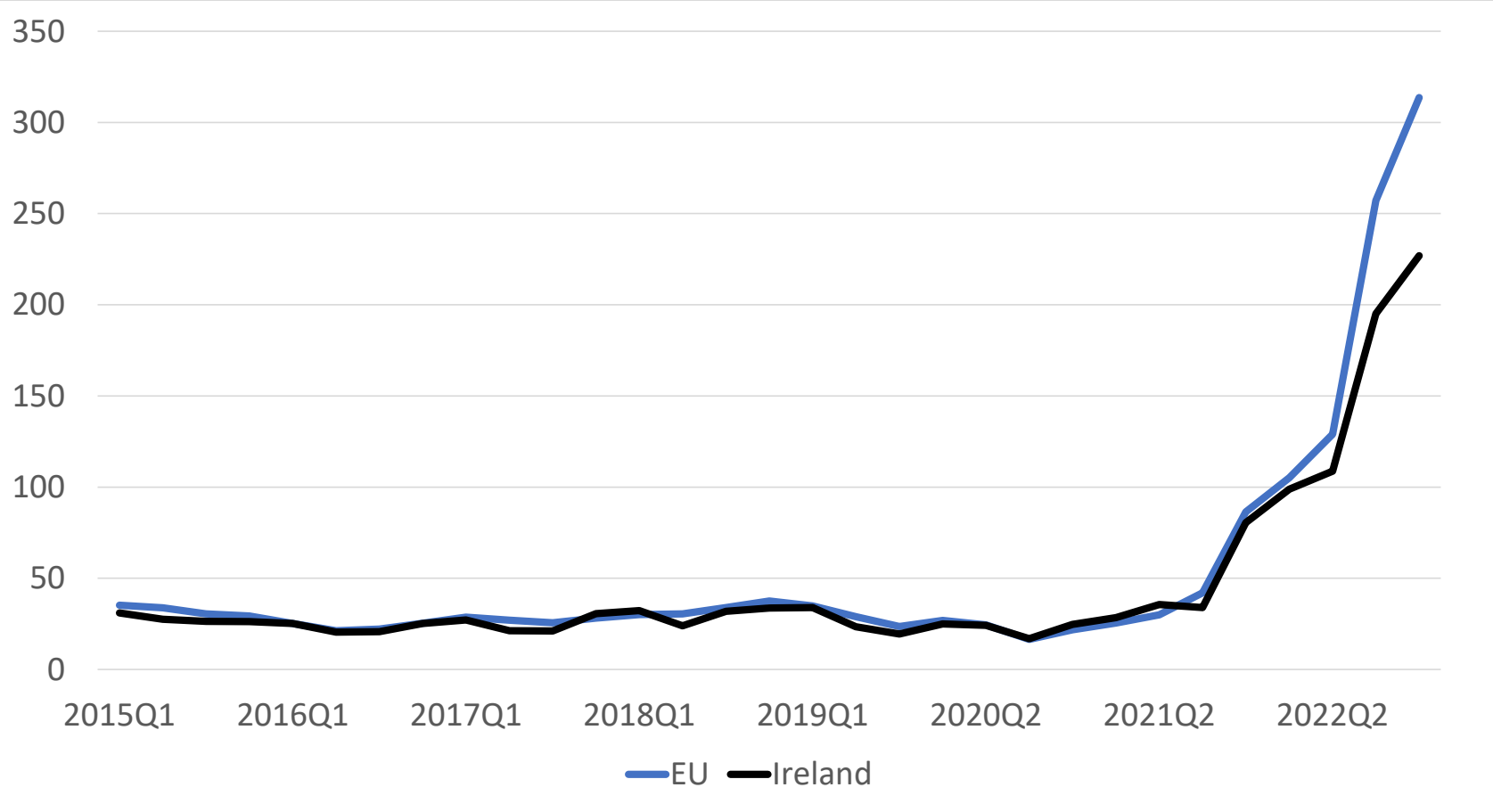
Tackling Climate Change

- Means:
- Eliminating coal and oil use and, eventually, gas
- Electrifying heat and transport
  - Ensure adequate electricity generation at minimum cost
  - Needs to be even more secure – challenges from climate change – floods etc.
- Gas
  - We have learned that it is essential, because complement to renewables, at least till 2040
- Decarbonising energy system requires huge investment
  - Crucial to minimise cost of capital and, therefore, risk
- Short term crisis bad for emissions but longer term:
  - Highlights desirability of renewables – backed up by gas or …….
  - Incentivises energy efficiency
- Getting security of energy wrong has macroeconomic consequences

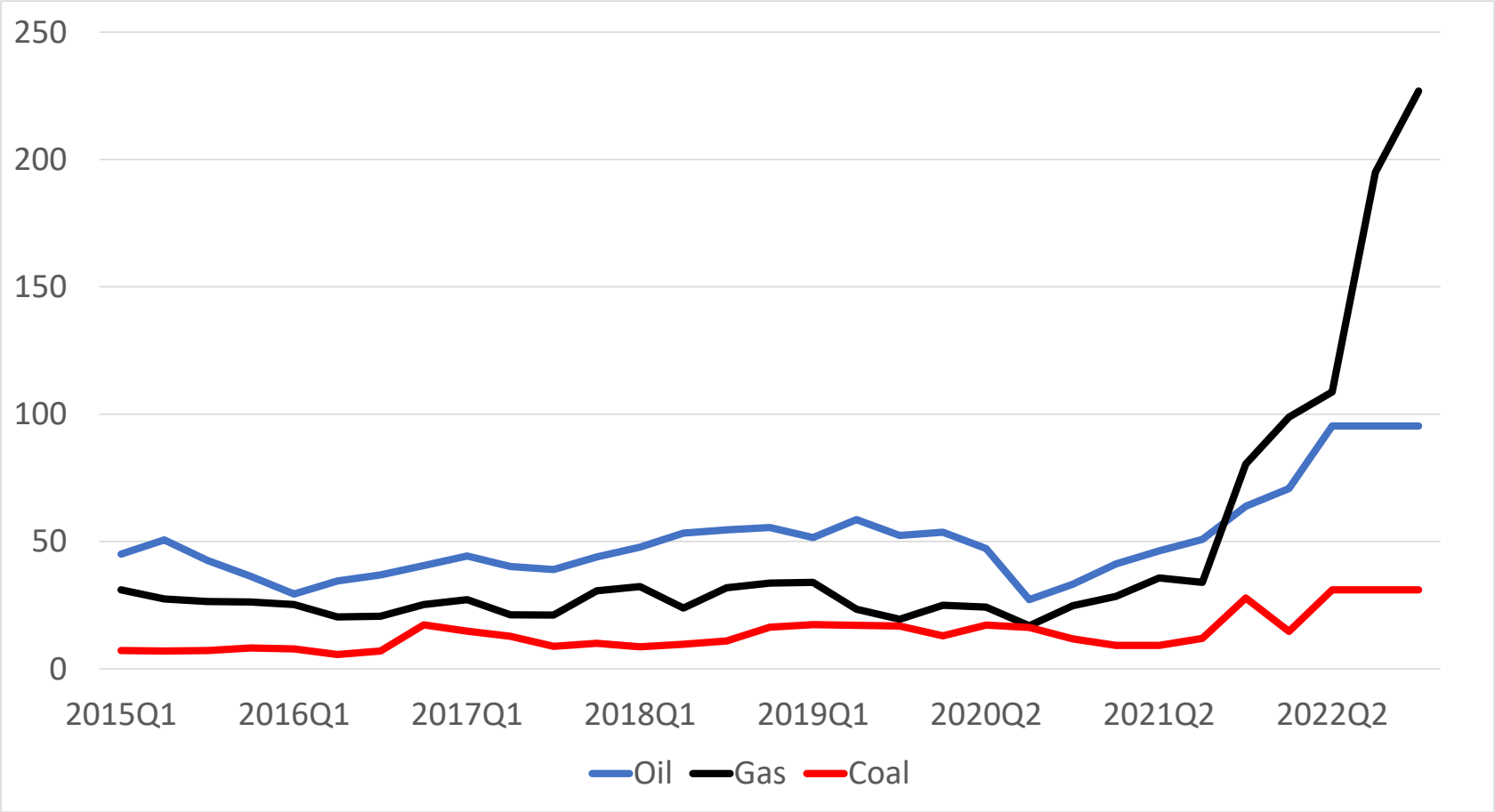
Security Challenges

- Generating Capacity
  - Problems even without Ukraine war and inflation
- Gas availability/price
  - Hugely aggravated by Ukraine war
  - Essentially it affects the economy by the price rise
  - Market, not rationing, will determine usage
  - Part of solution is reducing demand by businesses closing in Europe
- Future
  - Avoiding dependence on one supplier, one transmission channel
  - Not necessarily about producing energy domestically
    - But it can help, if the price is right

Import Price of Gas, €(000) per 100kg



Ireland, Import Price of Energy, €(000) per 100kg



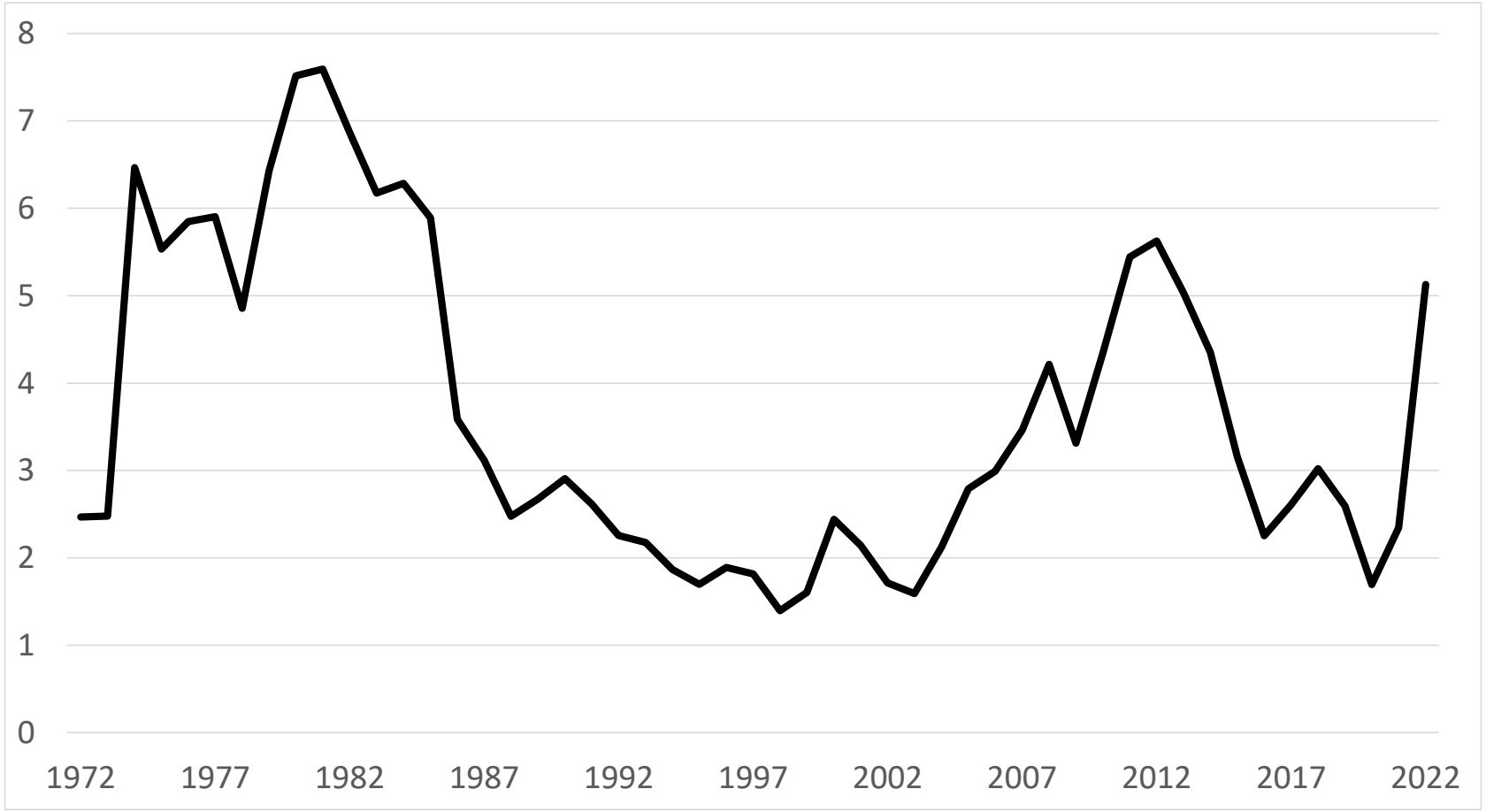
Gas

- The current crisis is primarily a gas crisis
  - Oil prices rose but since fallen. Possible further reduction for oil by 2023
  - Gas price rise exceptional. Until LNG issue sorted, for Europe will remain high
- Need to develop global gas market – LNG essential
- Security of gas supply for Ireland
  - 70% of gas comes through GB: UK could cut GB prices by ending exports
  - Complicated to cut Ireland off because of Northern Ireland
    - Ireland owns much onshore infrastructure in Scotland and Northern Ireland
  - GB, and hence Ireland, has slightly lower price because of pipeline constraints
  - If UK was fully reliable, location of LNG facility a matter of the economics

Electricity

- Short-term capacity problem due to the electricity market, ISEM not working properly
- It has been clear for some time that the electricity market structure needs to change to deal with a world of renewables (and nuclear)
  - Need to pay for capacity and flexibility
  - True for Ireland, EU as a whole, and UK.
  - Market reform in Ireland will require Northern Ireland agreement
  - Ad hoc solutions could endanger the huge investment needed to decarbonise
- Longer term
  - Need more interconnection
  - Offshore wind – export electricity or generate hydrogen - risk of stranded assets

Imports of Energy, % of GNI*



Macroeconomic Implications

- Shock to Irish and EU economies similar to 1974 oil price rise
  - 4% or 5% of GNI* transferred to Norway, Saudi Arabia, Qatar etc. in 2022/23
- Loss of income will not be compensated for by increased demand from the beneficiaries of the price increase
  - Shock to world demand
- While can get back some of loss through higher export prices, the loss of income will be very substantial
- Because it is a gas crisis it will persist for a number of years
- Because we are substantially worse off, and government cannot insulate all of population, need to target support

Conclusions

- Short term problems should result in robust reforms
  - Danger with ad hoc solutions to electricity market
  - Accelerate investment in renewables and energy efficiency
  - Access to imports of gas from outside Europe essential – LNG?
  - Storage in Ireland?
- Current cost of gas is equivalent to €700 a tonne carbon tax
  - Before 2022 retrofitting very expensive – now it looks like the cheap option
- Major obstacle to renewables, inadequate transmission, regulatory regime including the planning system