



# **The role of natural gas**

## **Policy & regulation: Research needs**

**Robert A. Ritz**

Energy Policy Research Group (EPRG)

Judge Business School, Cambridge University

**NTNU Energy Transitions Workshop**

Trondheim, 26 February 2018

# Gas & renewables: A complex picture – 1

---

**Claim:**      “*Natural gas & intermittent renewables are complements*”

... what does this actually mean?

**Direct effect 1:** Short-run displacement (merit order) ✗

- ▶ **Indirect effect 1:** Less forward-contract liquidity  
→ higher wholesale prices during intermittency ✓
- ▶ **Indirect effect 2:** In longer run, risk of asset stranding & less investment ✗
  - ▶ Unless compensated by a capacity market?

# Gas & renewables: A complex picture – 2

**Direct effect 2:** Lower ETS price reduces carbon bill ✓

- ▶ **Indirect effect 3:** Helps coal more than gas ✗
- ▶ **Indirect effect 4:** Reduces market power of gas-fired generation market power (?) ✗
  - ▶ Higher gas price raises electricity price
  - ▶ Effect is magnified by ETS quota

## **Implications for policy & regulation**

- ① Need for coordination, given “complementarity”?
- ② Rewarding flexibility services provided by gas?
- ③ New contractual structures for (intermittent) gas?
- ④ Public support for gas/LNG infrastructure investment?