CLIMATE NEUTRALITY IN THE NETHERLANDS: CASE STUDY
SHORT INTRODUCTION

- BORN IN THE EIGHTIES
- DUTCH
- FATHER OF TWO
- ANALYST
- WRITER
- VIDEO PRODUCER
DUTCH RESPONSE TO THE PARIS ACCORD (ELECTRICITY)

2030 GOALS
- Cut 49% of all emissions (~100 MtCO2e)

84 TWh/y from renewables

2030 ELECTRICITY DEMAND
- ~125 TWh/y
SIZEABLE GAPS

HAVE vs NEED
3.3 TWh/y Offshore wind vs 49 TWh/y
13 TWh/y Onshore RE vs 35 TWh/y

CURRENT DEFICIT
68 TWh/y
19~39GW
**HIDDEN COSTS**

**Offshore Wind Problem**

- Offshore wind 2019 = 1 GW
- Offshore wind 2023 = 4.5 GW

**Overnight costs**: 6.1 Billion Euro

**Hidden Overnight costs**: 4 Billion Euro

**TOTAL CAPACITY 2030 = 11.5 GW**

**TOTAL COSTS BUILDING OFFSHORE WIND = 30 BILLION EURO**
• COSTS for BACKUP?
• COSTS for GRID EXPANSION?
• EVERYONE HAVING TO PARTICIPATE?

• **HOW?**

  • (cut your usage in accordance with the weather...)
  • (buy solar panels...)
  • (buy a battery...)
  • (buy a BEV...)
  • *With what money???
EVERYONE EXPECTS THEIR NEIGHBOURS TO BAIL THEM OUT WHEN WIND ISN’T AVAILABLE
Misconception I  Energy = Electricity
Misconception II  LCOE = System cost
Misconception III  Low LCOE means cheap electricity
TIME FOR ANALYSIS
NUCLEAR CAN COMPETE

CAPITAL COST RANGE FOR BUILDING 10 EPR UNITS COMPARED TO CAPITAL COST RANGE FOR BUILDING EQUIVALENT VOLUME WIND & SOLAR

- WINDeq of EPR: 48, 275 Billion C
- PVeq of EPR: 110, 561 Billion C
- EPR: 32, 115 Billion C
NUCLEAR CAN COMPETE

LCOE Ranges based on 3~10% discount rates for several technologies deployed in the Netherlands.
(Haliade X assumptions: €1200/kW 69%CF)
CHASING THE DREAM