# Social Impacts of Decarbonisation

An Energy Investment Perspective

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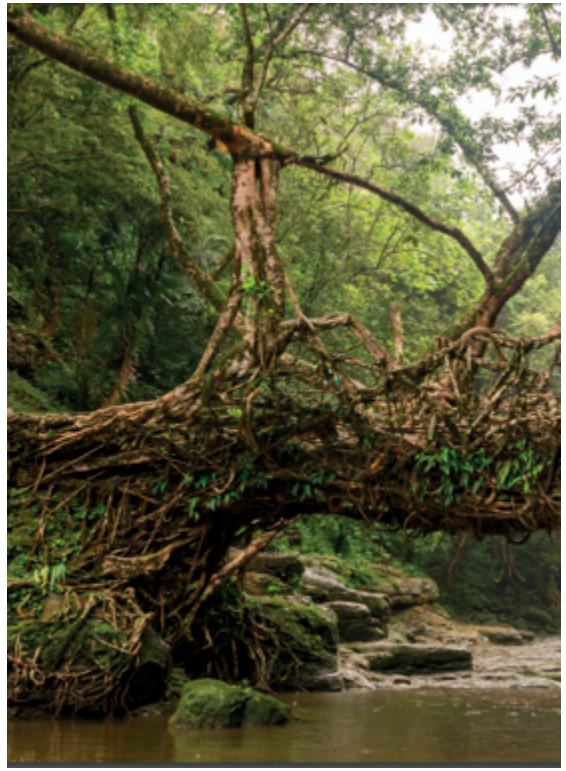
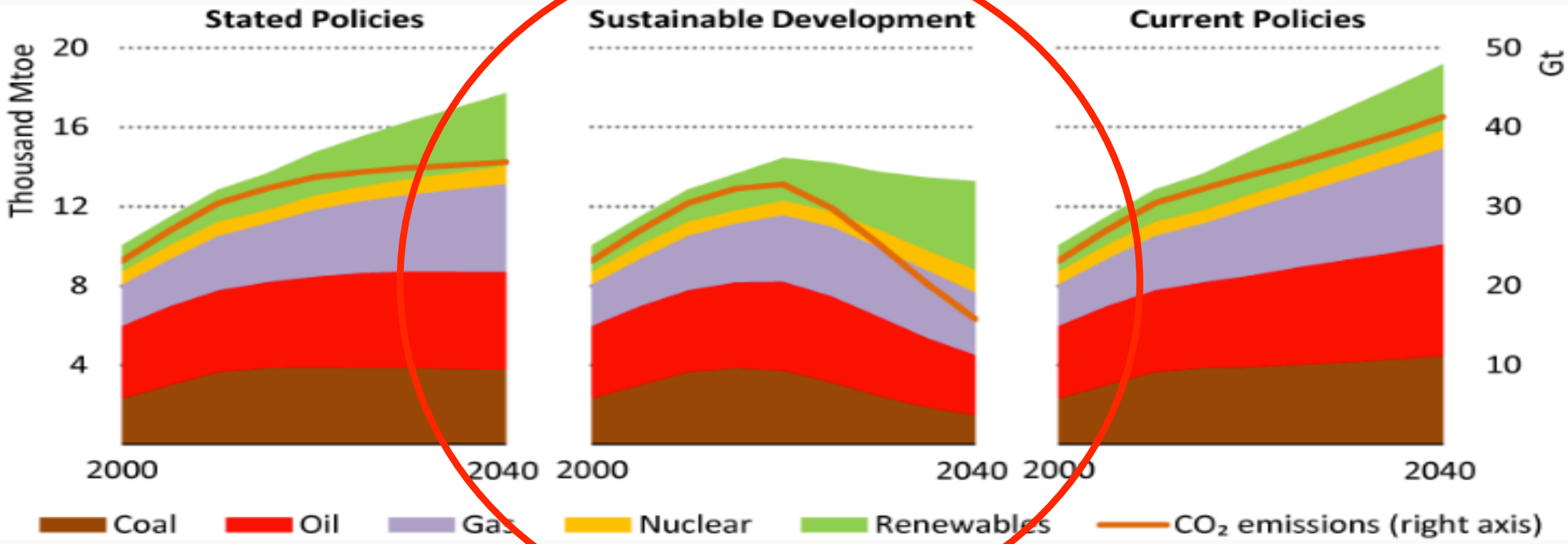
PLEXUS ENERGY

# POLICY CONTEXT

- Major policy shift towards deep reductions in carbon emissions and the deployment of Renewable Energy (RE) to implement Paris targets
- IEA estimates between $58 - $72 trillion to meet global energy demand to 2040, even more to fund large scale deployment of RE Technology
- Decarbonisation – a complex socio-technological transformation with major economic, political and social implications
- Involves decisions on the kind of energy systems to build, where to build them and how to distribute their benefits, costs and risks
- Gap between expectations of a fast renewable energy-driven energy transition and the continued reliance on fossil fuel based energy systems



# World primary energy demand by fuel and related $CO_2$ emissions by scenario




Source: IEA, WEO 2019

# SDG 7 - ENERGY ACCESS


- 1 billion people without access to electricity
- Premature deaths due to air pollution/indoor air pollution
- Lack of access to clean energy and deforestation (fire wood)
- Implications of growing energy access on energy demand and $CO_2$ emissions

# DECARBONISATION

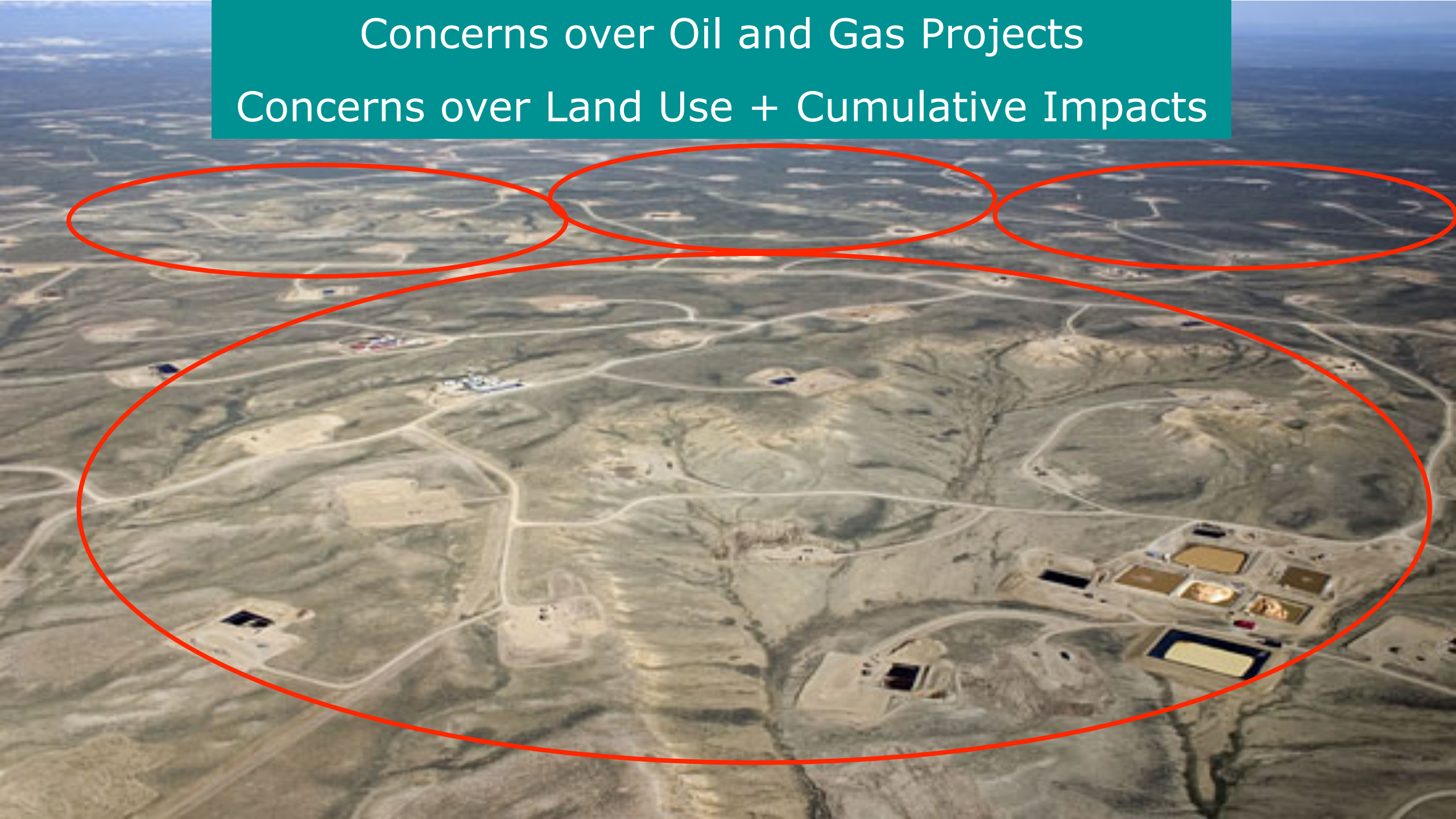
*... the process by which the average amount of carbon in primary energy reduces over a period*

*To remove carbon from …*

- **Key options include:**
  - Natural Gas (transition fuel)
  - Renewable Energy at scale (wind, hydro, solar, biofuels)
  - Carbon Capture and Storage (CCS)
  - Phasing out coal and unconventional fuels (e.g. oil sands)
  - Energy efficiency
  - Preserving natural carbon sinks and reforestation
  - Behavioural change
- **Consider environmental and social impacts of Renewable Energy Systems (RES) at scale**

# Concerns over Oil and Gas Projects

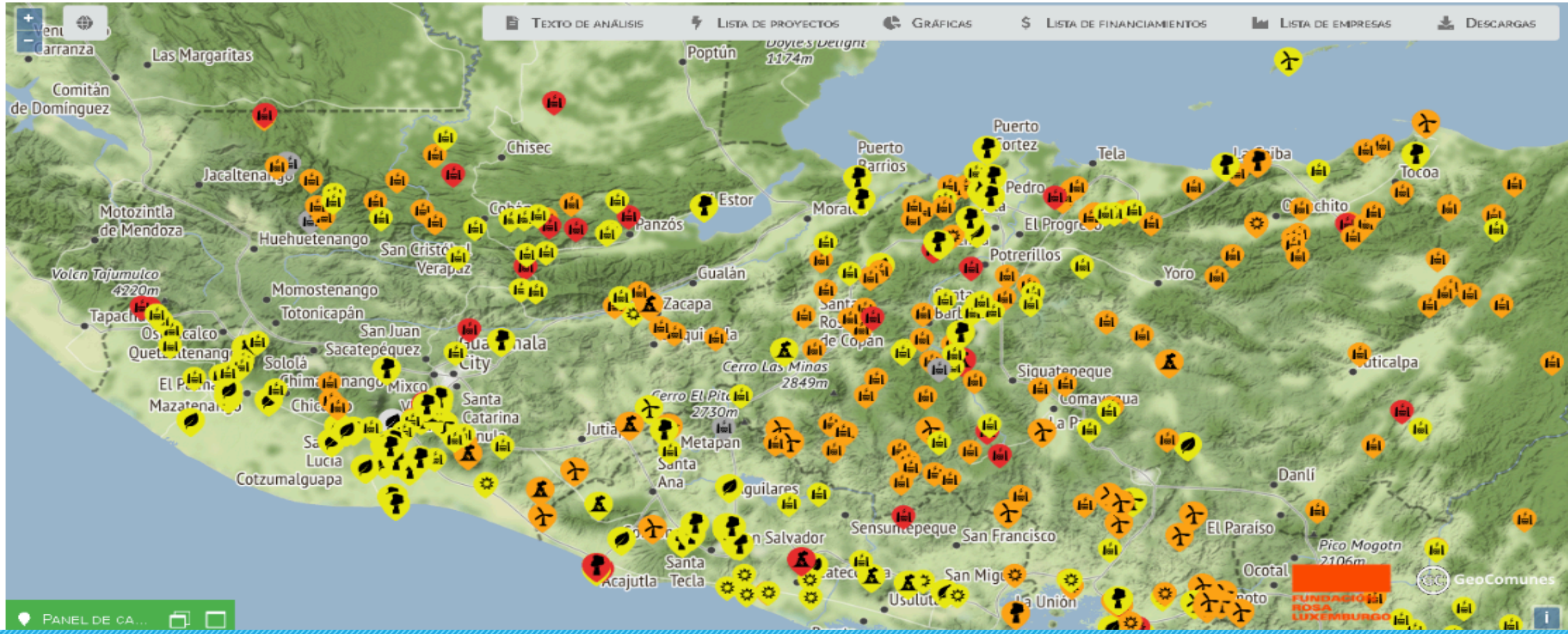
# Concerns over Land Use + Cumulative Impacts



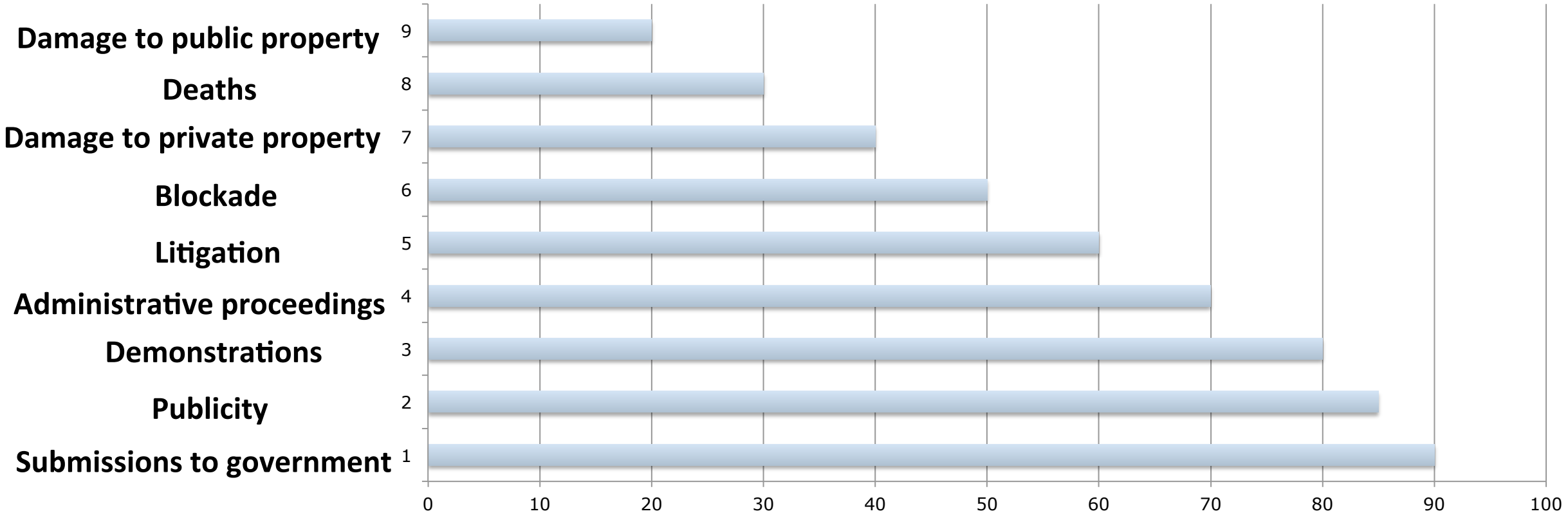
# Example: Hydropower

- Social impacts of Hydropower projects
- Growing incidence of social conflict
- Importance of meaningful stakeholder engagement
- Even small project can have big impacts

# EXAMPLE: ENERGY PROJECTS AND SOCIAL CONFLICT IN CENTRAL AMERICA



# Cost of Conflict




Source: Davis & Franks (2014)

# CARBON CAPTURE AND STORAGE



- CCS at scale needed to avoid dangerous climate change
- CCS remains well off track
- Government policy framework important
- Public acceptance of CCS is a key issue
- Example of Barendrecht Project in The Netherlands:
  - failed due to public concerns over safety
  - flawed stakeholder engagement process

# Benban Solar Project (Egypt)

- Largest solar power construction project in the world
- Early focus on social impacts and managing influx of construction workers a success
- Early and continuous engagement with local stakeholders paid off
- Focus on local employment and delivery of benefits to local tribes
- Advance planning of workforce demobilisation following construction

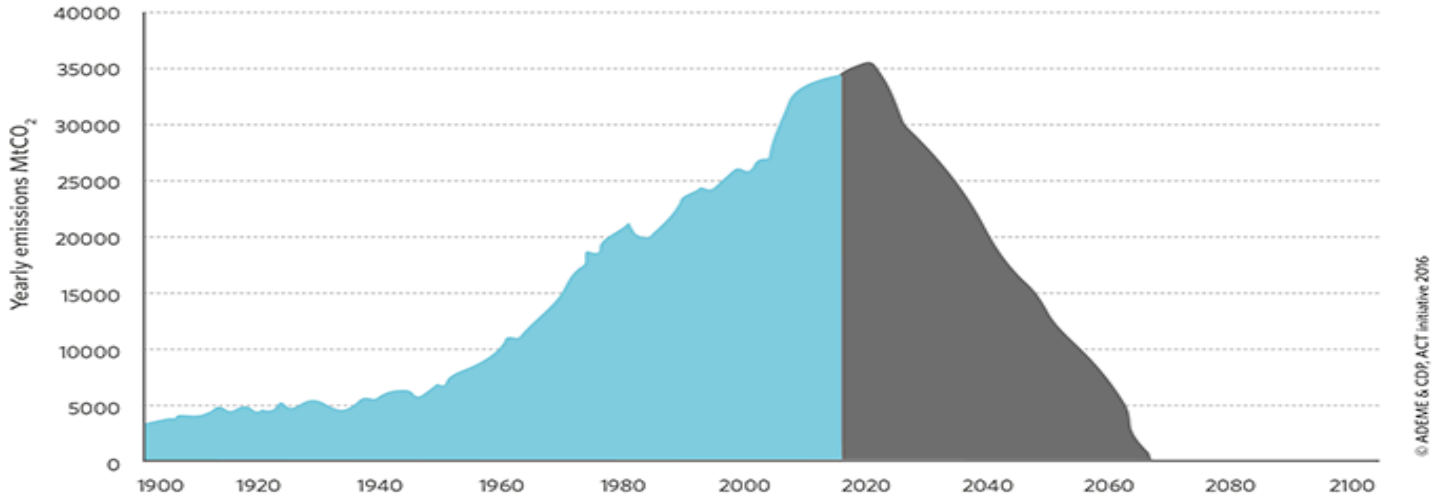
# NB: PERCEPTION IS REALITY

- What people fear appears real
- What they hear appears real
- What they see appears real

**Perceptions must be addressed**

# World $CO_2$ emissions under a 2°C mitigation scenario

- Paris Climate Agreement driving decarbonisation agenda
- Solar energy will become world's largest source of energy by 2050 (INRENA)
- But decarbonisation is difficult. Renewable energy only one of several pathways
- Think beyond engineering / financial aspects – vital to address social impacts
- Important lessons from extractive Industry regarding social impact management




Source: ADEME 2016

# CONCLUSIONS

**Conclusion No 1**
- Energy transition an investment opportunity
- Vital to address the social dimension

**Conclusion No 2:**
- Risk for RES to result in similar conflicts as OG
- Learn lessons from non-renewable sectors

**Conclusion No 3:**
- Beware the cost of social conflict
- Public acceptance a key issue

**Conclusion No 4:**
- Meaningful stakeholder engagement
- Value proposition for local stakeholders

**Conclusion No 5:**
- Good tools already exist (e.g. IFC PS)
- Avoid Sub-Prime risk (not all ESIAs are good)

**Conclusion No 6**
- Ignoring social dimension risks value erosion
- Value erosion a risk across all energy systems