# Research on integrative strategies in climate change policy: a comment

A contribution to the kick-off event at the

Canadian Institute for climate choices

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My intervention is based on the framing document and more specifically on the questions asked at the end:

- What are the advantages, if any, in linking technological, behavioural and financial issues? How do these advantages differ among sectors?
- Given that these questions are often managed in different ministries and even at different levels of government, what is the impact on policy development?
- How can a strategic approach be employed to integrate these three dimensions to ensure the successful operationalization of climate objectives?
- What are the main behavioural barriers to the widespread adoption of climate mitigation technology, and how can policy design ensure that these are overcome in a sustainable manner?
- What are some emerging behavioural trends that could leverage the adoption of climate mitigation technology?
- How can policy be made resilient so as to be reactive to disruptive technologies?
- What is needed to make private investment better aligned with climate targets?
- How can technological, behavioural and financial dimensions be integrated to address the challenges of national mitigation policies targeting the natural resources sector?

# Outline

1. Questioning some preconceptions of the framework
2. How do analyze linkages between technology, behaviour, finance:
3. How do we approach barriers to behavioural change ?
4. The big question of the natural resources sector and its impact on climate change policy ?

# Questioning some *aprioris* and preconceptions of the framework

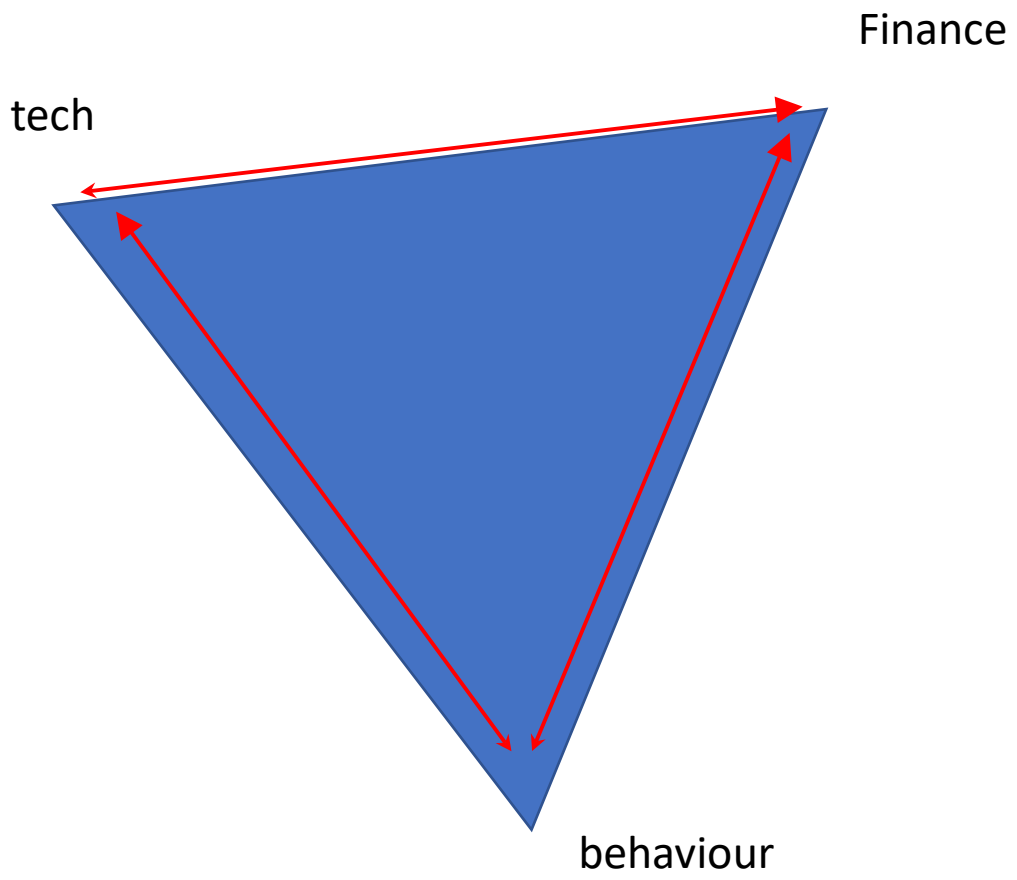
- Idea is to make sure our box is not too small
- Open up questions to wider questions

1. Cornucopian biais
2. Engineering biais
3. The conceptual status of « clean growth », climate science or political discourse ?
4. Research horizon
   - Act upon climate change ?
   - Act upon existing climate policies ?

Capellán-Pérez, I., de Castro, C., & Miguel González, L. J. (2019). Dynamic Energy Return on Energy Investment (EROI) and material requirements in scenarios of global transition to renewable energies. *Energy Strategy Reviews*, *26*, 100399. https://doi.org/10.1016/j.esr.2019.100399

# How do analyze linkages between technology, behaviour, finance

1. Linkages: tabula rasa or existing links ?
2. Linkages as power structures
3. Relationship between policy – research and power structures
4. How do social movements relate to these structures



# Barriers

Classical study of lock-in effects and structures

- Complexity of lock-in
  - Ideational
  - Material
- Lock-in structures
  - Social
  - Cultural
  - Political and economic
  - Cognitive

Seto, K. C., Davis, S. J., Mitchell, R. B., Stokes, E. C., Unruh, G., & Urge-Vorsatz, D. (2016). Carbon Lock-In: Types, Causes, and Policy Implications. *Annual Review of Environment and Resources*, (41), 425–452. https://doi.org/10.1146/annurev-environ-110615-085934

**Table 1 Summary of three types of carbon lock-in and their key characteristics**

| Lock-in type | Key characteristics |
|---|---|
| Infrastructural and technological | ■ Technological and economic forces lead to inertia<br>■ Long lead times, large investments, sunk costs, long-lived effects<br>■ Initial choices account for private but not social costs and benefits<br>■ Random, unintentional events affect final outcomes (e.g., QWERTY) |
| Institutional | ■ Powerful economic, social, and political actors seek to reinforce status quo that favors their interests<br>■ Institutions are designed to stabilize and lock in<br>■ Beneficial and intended outcome for some actors<br>■ Not random chance but intentional choice (e.g., support for renewable energy in Germany) |
| Behavioral | ■ Lock-in through individual decision making (e.g., psychological processes)<br>■ Single, calculated choices become a long string of noncalculated and self-reinforcing habits<br>■ Lock-in through social structure (e.g., norms and social processes)<br>■ Interrupting habits is difficult but possible (e.g., family size, thermostat setting) |

# Natural resource sector

1. Fossil fuel sector

- A growth coalition
- Business interdependencies
- Active engagement of fossil fuel sector with climate policy
    1. Denial/resistance
    2. Accomodation and mitigation of impact
    3. Agressive redefinition

2. Other sectors (mining, bioeconomy)