Temperature Anomaly (°C)

CO₂ Concentration (PPM)

How can we stop climate change?
we have
three options
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Transportation Technology and Policy

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You now have to think (and write):

Is your global population less than 9.6 billion people? If so, how could the real world similarly reduce its population? My global population is 1 billion people.

To reduce people you can either move people older than 5060 years to another planet as a trial for living organisms, or we can try limiting the reproduction of human race. Also those who has more than 3 kids is executed and those with less than 3 gets extra money. Or hunger games style.

“Move people... to another planet”

“Hunger games style”
Overpopulation
Use less energy
Develop innovative technologies
What motivates technology innovation?
Private Sector

Public Sector

Knowledge Development

External Economies

Market Formation

Technology Legitimation

Entrepreneurial Experimentation

Influence in the Direction of Search

7 major functions
Technology Innovation Systems
Flows of information

motivate innovation
Government
Government

What do you support, and when?
Data quantification to the rescue!
Machine-learning algorithms map technology innovation functions
Biofuel Technology Innovation System (United States)
Biofuel Technology Innovation System (for CA)
Do policies affect the TIS?

Influence on the Direction of Search

Development of Positive External Economies

Entrepreneurial Experimentation

Resource Mobilization

Market Formation

Ethanol Policies Enacted

LCFS drafting, fuel incentive plan, investments

Support for advanced biofuel development

Ethanol TIS for California
What policies are necessary to support low-carbon technology Innovation?
Are there specific kinds of policies in place?

Do these policies correlate with TIS counts?
<table>
<thead>
<tr>
<th>Policies/Functions</th>
<th>F1</th>
<th>F2</th>
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<th>F4</th>
<th>F5</th>
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<td>60%</td>
<td>49%</td>
<td>30%</td>
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<td>57%</td>
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So what does this mean for innovation?
What’s currently happening

What isn’t happening

What we can do about it?
Any Questions?

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