
Climate Moonshot Conference (DRAFT)

Conference Question

Is it possible to solve the climate problem with a surge of R&D in key areas; and if so, what are those areas and how much might a “climate moonshot” cost?

Conference Strategy

Climate change is expected to cost trillions of dollars; therefore, it is reasonable to spend billions of dollars on additional R&D, to save trillions. Yet what might be developed?

Each speaker is allocated \$1B over 5 years to solve a specific problem. The combined efforts aim to bend the global warming curve so that Earth’s temperature peaks and then drops back down.

Stratospheric Aerosol Injection (SAI)

At some point, national leaders will need to compare reflecting sunlight (e.g. [SAI](#)), with not reflecting sunlight (e.g. tipping point activation).

Given \$1B over 5 years, what experiments would help us understand how to reflect sunlight at a reasonable cost and without harm (e.g. SAI field experiments)?

Speaker: Professor David Keith (?)

Given \$1B over 5 years, what large scale SAI equipment might be developed (e.g. modified Boeing 777 that supports SO₂ gas injection, design high-altitude large airplane)?

Speaker: Wake Smith (?)

Climate Science

Climate models have not predicted observations (e.g. albedo changes, global temperature changes), which suggest they are incomplete. If \$1B over 5 years was allocated to improve these models, what experiments might be conducted (e.g. measure properties of clouds, measure how much sunlight reflects off air pollution)?

Speaker: Professor James Hanson (?)

Nuclear Fission

If \$1B over 5 years was allocated to automate the site construction of a currently operating nuclear fission reactor (i.e. copy an existing design), what machines might be developed and how might this effect the cost of electricity?

Speakers: Top designer of machines (?)
Top designer of nuclear reactors (?)

Co-locating Chemical Processing with Nuclear Fission Power

In theory, platforms (e.g. 12m x 100m) of chemical processing equipment could be built in a shipyard or a factory, and a method of transporting these platforms over land and water could be developed. Furthermore, they could be positioned next to a nuclear reactor, and the making of chemicals could be driven directly by heat from the reactor. If this was done, would chemical making costs less than traditional methods? Also, how much would it cost to develop a standardized system that co-locates nuclear power with chemical making?

Speaker: Top chemical engineer (?)

Economic Nuclear Fusion

In theory, “economic fusion” refers to a machine that generates electricity using fusion power at a cost less than fossil fuel-based power. Remarkably, a design for such a device has been published (Economically optimized design point of high-field stellarator power plants by Prost and Volpe). The speaker provides a review of the design, explains challenges faced in its development, and provides a review of experiments needed to verify utilized technologies.

Speaker: Professor Stephen Cowley (?)

Next Generation Building Automation and Control

In theory, a next generation building automation system could be developed to reduce carbon dioxide emissions, reduce cost, and increase comfort. For example, more automation could allow us to control the temperature of each room, and help move heat from one room to another. To fully automate buildings, we would need to place a microprocessor chip in every device and connect them together with reliable communication. Devices include things like light switches, light sockets, HVAC equipment, window thermal covers, appliances, motorized dampers in ducts, fans in ducts, occupancy sensors, temperature sensors, and fire detectors. Speakers outline steps needed to develop a standardized system that would have a profound impact on new buildings (not existing construction).

Speaker: (?)

Climate Moonshot Videos

Climate Strategy [#19]

<https://www.youtube.com/watch?v=LGPgiIDZoDA>

Example Climate Moonshot [#20]

<https://www.youtube.com/watch?v=ihTGioEKrns>

What is the World's Climate Plan? [#21]

<https://www.youtube.com/watch?v=9-nU3liTTUo>

Standardized Nuclear Power [#11]

<https://www.youtube.com/watch?v=AIlbovU67wI>

Automated Nuclear Power Construction [#12]

<https://www.youtube.com/watch?v=af00cy1l7Qo>

Co-locate Chemical Making with Nuclear Power [#13]

<https://www.youtube.com/watch?v=4gqmKGV1h5Y>

Economic Fusion Moonshot [#14]

<https://www.youtube.com/watch?v=CvZzGHSugy4>

Reflecting Sunlight [#9]

<https://www.youtube.com/watch?v=AJ-ddFDiA4w>

Stratospheric Aerosol Injection (SAI) [#10]

<https://www.youtube.com/watch?v=p402hv9tSDA>

All Moonshot Videos

<https://www.aplantosavetheplanet.org/video>

Climate Moonshot Files

Climate Moonshot Business Plan (90-page pdf)

<https://www.aplantosavetheplanet.org/bp>

Links to Moonshot PDF Files That Can be Fed to AI (open-source)

<https://www.aplantosavetheplanet.org/pdf-ai>