

An Indian-Australian research partnership

**Project Title:**

**Project Number**

**Monash Main Supervisor**  
(Name, Email Id, Phone)  *Full name, Email*

**Monash Co-supervisor(s)**  
(Name, Email Id, Phone)

**Monash Head of Dept/Centre** (Name,Email)  *Full name, email*

**Monash Department:**

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**IITB Department:**

### Research Clusters:

### Research Themes:

Highlight which of the Academy's CLUSTERS this project will address? <i>(Please nominate JUST <u>one</u>. For more information, see <a href="http://www.iitbmonash.org">www.iitbmonash.org</a>)</i>		Highlight which of the Academy's Theme(s) this project will address? <i>(Feel free to nominate more than one. For more information, see <a href="http://www.iitbmonash.org">www.iitbmonash.org</a>)</i>	
1	Material Science/Engineering (including Nano, Metallurgy)	1	Artificial Intelligence and Advanced Computational Modelling
2	Energy, Green Chem, Chemistry, Catalysis, Reaction Eng	2	Circular Economy
3	Math, CFD, Modelling, Manufacturing	3	Clean Energy
4	CSE, IT, Optimisation, Data, Sensors, Systems, Signal Processing, Control	4	Health Sciences
5	Earth Sciences and Civil Engineering (Geo, Water, Climate)	5	Smart Materials
6	Bio, Stem Cells, Bio Chem, Pharma, Food	6	Sustainable Societies
7	Semi-Conductors, Optics, Photonics, Networks, Telecomm, Power Eng		
8	HSS, Design, Management		

## The research problem

### *Define the problem*

Climate change risks have intensified over the last decade. The frequency and magnitude of natural disasters globally have increased, which have been scientifically linked to growing climate change risks. Businesses, from agriculture to financial services, globally have been impacted by intensifying climate change risks. Both governments and businesses have responded with policies and strategies aimed at minimizing risks from climate change. At the global scale the speed at which responses to climate change risks as transpired have attracted debate, both at the United Nations level as well as at the country level. It is not clear how companies have been impacted by climate change risks. Climate change risks have intensified over the last decade. The frequency and magnitude of natural disasters globally have increased, which have been scientifically linked to growing climate change risks. Businesses, from agriculture to financial services, globally have been impacted by intensifying climate change risks. Both governments and businesses have responded with policies and strategies aimed at minimizing risks from climate change. At the global scale the speed at which responses to climate change risks as transpired have attracted debate, both at the United Nations level as well as at the country level. It is not clear how companies have been impacted by climate change risks.

## Project aims

### *Define the aims of the project*

Develop innovative measures of climate change, such as time-series data that capture the evolving of climate change risks over time. Develop a framework for modelling the effects of climate change risks on firm performance and identifying the channels through which climate change influences a firm's price and cost structures.

## Expected outcomes

### *Highlight the expected outcomes of the project*

A global new dataset on climate change risk that accounts for its effects on wages, employment, productivity, consumption, investment, inflation, exchange rates, output, etc.

A framework for modelling the effects of climate change on firm performance.

Empirical tests of various asset pricing models to identify channels through which the effects of climate change risks transmit to pricing behavior.

## How will the project address the Goals of the above Themes?

### *Describe how the project will address the goals of one or more of the 6 Themes listed above.*

The project focuses on green energy theme by modelling climate change risks.

## Capabilities and Degrees Required

### *List the ideal set of capabilities that a student should have for this project. Feel free to be as specific or as general as you like. These capabilities will be input into the online application form and students who opt for this project will be required to show that they can demonstrate these capabilities.*

The student should have a solid background in economics/finance/econometrics/engineering and strong statistical modelling skills. The student is expected to be proficient in computing/software coding.

Select up to **(4)** keywords from the Academy's approved keyword list (**available at <http://www.iitbmonash.org/becoming-a-research-supervisor/>**) relating to this project to make it easier for the students to apply.

**Climate Change Risk, Asset Prices Models, Firm Performance**