EngineeringX

Transforming Systems through Partnership

Royal Academy of Engineering

Grant Call 2020/21

Newton Fund

Bringing global experts together to engineer change

What is TSP?

Transforming Systems through Partnership

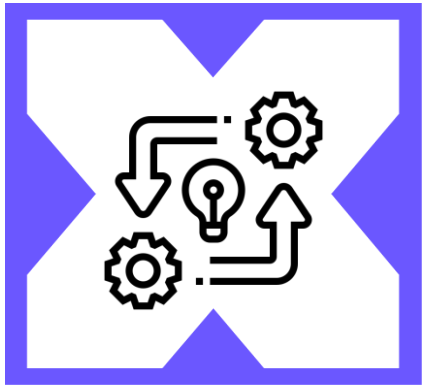
We believe that to solve today's most pressing sustainability and development challenges, academics need to work in deep partnership with industry, government and communities to build trust, engineer appropriate solutions and scale their uptake whilst training the next generation to do so too.

We build cross sector engineering partnerships which holistically address SDG challenges

TSP Objectives

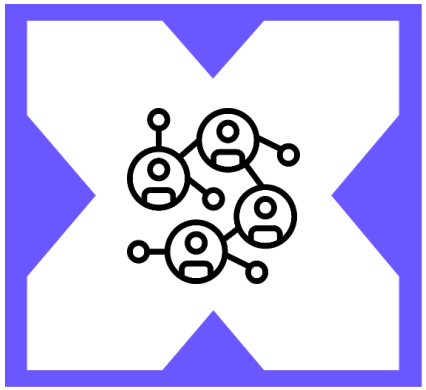
The Engineering X Transforming Systems through Partnership (TSP) programme builds engineering teaching, research and innovation capacity within partner countries' universities and research institutes to collaborate with important local stakeholders and UK academics in meeting complex, interconnected SDG challenges in partner countries and at a global level.

Our objectives with this programme are threefold:



Challenge-led research and innovation that uses engineering to address sustainability challenges in the partner country and globally

Partnerships in course design and delivery to equip the next generation with skills to address sustainable development challenges



Collaboration and knowledge exchange that creates a strong evidence base for building better systems for the world we want to live in

Why is partnership crucial to transforming systems?

Development and sustainability challenges arise from a complex set of relationships between many individuals and groups, and the environmental, social, technological and political contexts where the challenge is taking place.

For example, holistic and well-engineered approaches to addressing food security in water scarce regions would necessarily require engagement with issues such as clean energy and industrial sustainability, patterns of consumption and natural resource stewardship. To engineer secure supply of food at a meaningful scale, there is need to engage with the political, economic and social context impacting interconnected food, water and energy issues, seeing them each as component parts of a 'system'.

In a system, no one actor is likely to have the necessary legitimacy, resources or knowledge to solve the problem, hence the need to partner!

Systems Transformations for the SDGs

This call accepts proposals tackling any sustainable development challenge: we believe that applicants are the best placed to decide which areas are priority, and what action is needed. To assist applicants to scope appropriate projects, we recommend reading this paper by Sachs et al (2019) on Six Systems Transformations for the SDGs. We have funded projects in the following areas – please follow the links for case studies:

6: Digital revolution for sustainable development
Case study, Jordan

1: Education, gender and inequality
Case study, South Africa

5: Sustainable cities and communities
Case study, Thailand

2: Health and well-being
Case study, India

4: Sustainable food, land, water and oceans
Case study, Colombia

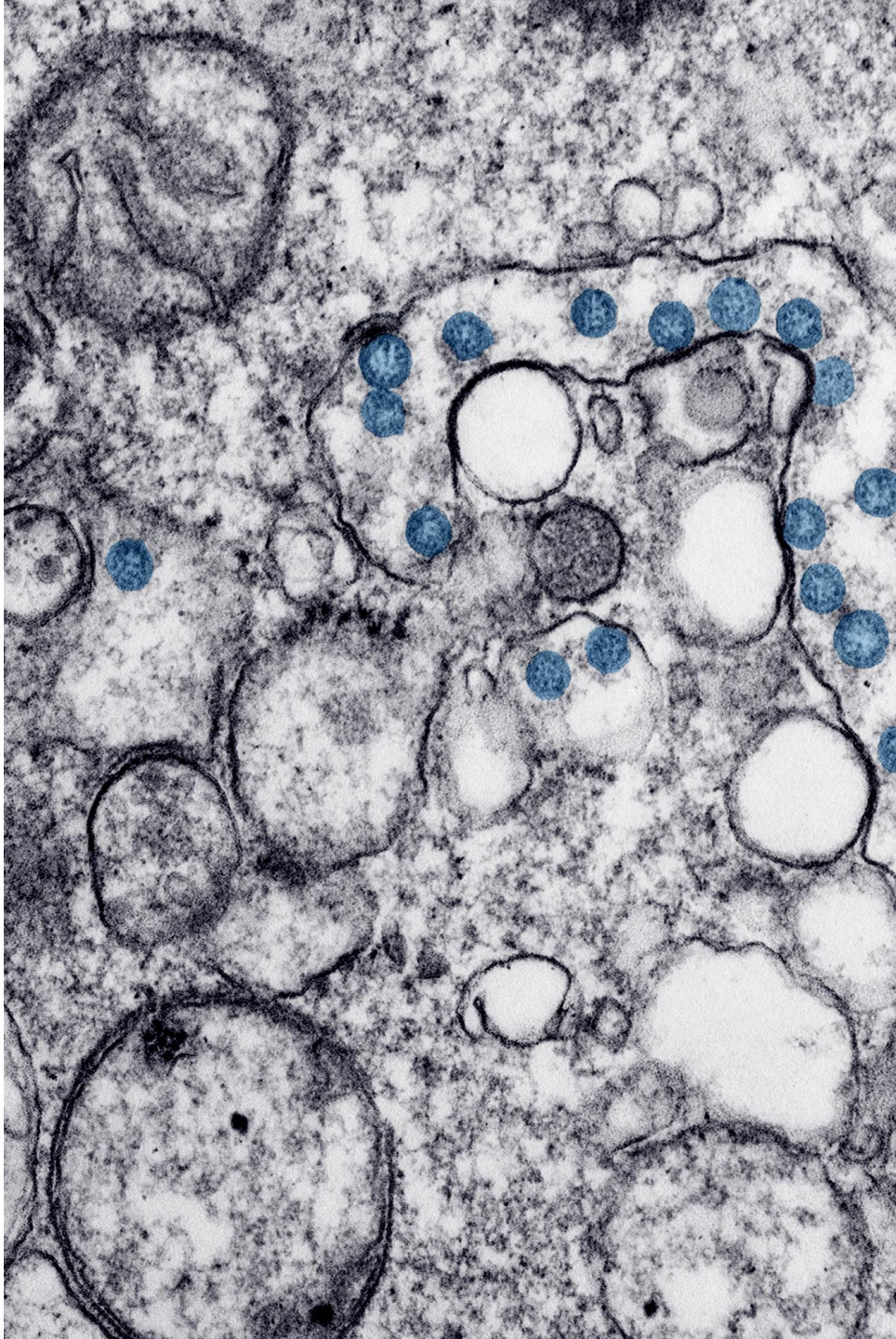
3: Energy decarbonization and sustainable industry
Case study, China

TSP & Covid-19

The pandemic has alerted us all to how complex and interdependent our world is. Its impact has also revealed the extent of structural inequality within and across nations. Much of this complexity and inequality is embedded and entrenched by the engineering all around us.

The ambition to build a fairer and more sustainable society in the wake of the coronavirus crisis requires engineers to confront the inclusivity challenges of the present and future.

We encourage applicants to use this call to build partnerships which sustainably address national recovery or development challenges resulting from the effect of the Pandemic.



Professor David Bogle FREng
Chair, Transforming Systems through Partnership

"Following the Global Pandemic, there has never been a greater need for collaborative working to address our urgent development and recovery challenges.

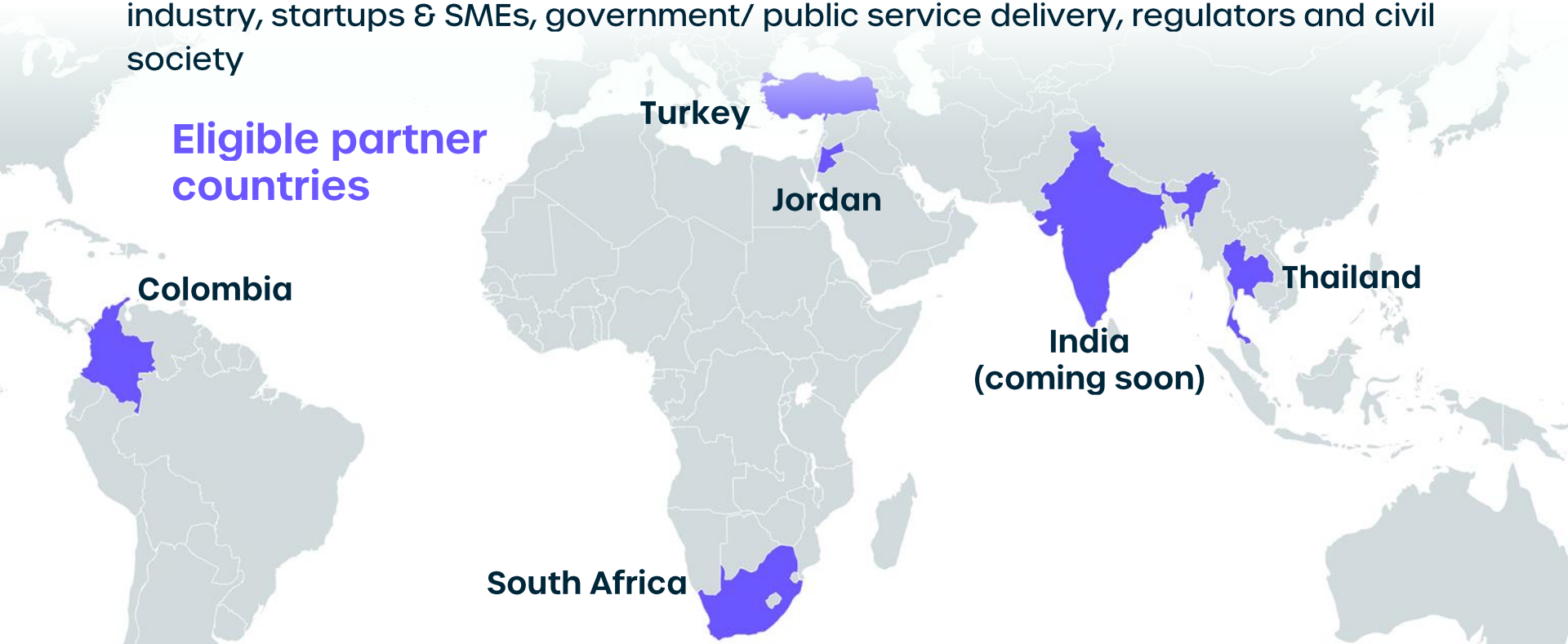
We believe that partnerships among the right people can help knowledge get to where it's needed and facilitate engineering of the innovative, potentially transformative solutions required to meet the SDGs by 2030 in this new landscape."

TSP Grant Scheme

Partnership criteria

Grants of £80,000 are on offer for partnerships meeting the following criteria:

- Projects MUST be in line with the TSP programme objectives and MUST match fund at least 50% of the grant requested
- The lead partner MUST be a university or research institution in the partner country (list below)
- The lead partner MUST partner with at least one UK academic institution, and at least one local industry partner (India and Jordan grants MUST include a startup and an industry partner)
- Applicants are strongly encouraged to engage additional partners in academia, industry, startups & SMEs, government/ public service delivery, regulators and civil society



Further information on partner countries

Below are our in country partners and their priorities – projects which meet them are encouraged. Where necessary, specific information on eligibility is also provided.

Country	Partner agency	Government priorities	Additional notes
Colombia	C-Emprende, INNpulsa	Circular economy, All 6 areas,	
India	C-DAC, Ministry of Electronics and IT	Digital transformation, All 6 areas,	• Partnership MUST include an Indian startup • Indian involvement to be funded by MEITY and UK by RAE
Jordan	Industrial R&D Fund	food manufacturing , medical equipment & pharmaceuticals, Areas 2, 3, 4 & 6	• Partnership MUST include a Jordanian start-up. • Partnership MUST include a Jordanian industrial partner who is a registered member in the Chamber of Industry.
South Africa	Department for Higher Education and Training	COVID-19 recovery, All 6 areas	• Projects led by/ including Historically Disadvantaged Institutions encouraged • Awardees given added support under Nurturing Emerging Scholars Programme
Thailand	National Science and Technology Development Agency commissioned by NXPO through PMU-C	Bio-Circular- Green Economy (BCG), All 6 areas	• Projects to be funded in whole either by NSTDA or RAE • Match contributions from industry must be 50% financial, 50% in kind
Turkey	TUBITAK	All 6 areas	• Apply through **both** RAEng and TUBITAK online systems • Projects to be funded in whole either by TUBITAK or RAE

TSP grant scheme

What are the funding arrangements?

- Grant Awards provide funding of up to GBP 80,000 for partnerships to conduct activities in support of the Programme Objectives.
- The Award amount requested must be matched by applicants by at least 50%. Please see the section on match funding later in this document.
- Projects funded by this call must begin by April 2021 and end by 30th April 2023.

Who should make the application?

- Applications should be submitted by a suitably empowered representative of the Lead Partner (the Partner Country University).
- The lead university will act on behalf of all other partners and will consult with the UK university partner and other partners in developing the proposal. All correspondence from the Academy will be sent to the lead university.
    - Help finding a UK university partner is available here

Where should the application be submitted?

All applications should be submitted via the Academy's online grants management system. Applications for Turkey must also be submitted through TÜBİTAK's system.

What is on the application form?

Please see the application form guidance linked here.

Application timeline

Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr
	Call open		**Review period**		**Contracting**		

Call open

- Wednesday 7 October 2020
- Online system accepts applications

Deadline

- Monday 30 November 2020, 12:00 midday (UK time)
- Deadline for submission of proposals

Decision

- February 2021
- Awardees notified of decision

Match funding

Grants through this scheme must be matched by awardees by at least 50%. This means that if the Academy provides £80,000 of grant funding to awardees, the partnership must contribute a minimum of £40,000 in additional resources.

By requiring awardees to contribute their own resources to their projects, match funding ensures robust commitment from all parties in the partnership and increases the scale of the project's potential impact.

These additional resources can be cash, or "in-kind" contributions such as staff time or the value of the use of equipment or facilities belonging to one of the partners.

The Academy recognizes that some institutions face cash constraints and will assess the match contributions of partnerships accordingly.

The match contribution for partnerships with Thailand MUST be at least 50% financial and the remainder can be in-kind.

COVID-19 advice

- Please follow the guidance of your employer and government (in partner countries and the UK where applicable) when planning project activities.
- International collaboration and exchange is at the core of the TSP scheme. Applicants must use their discretion to decide the most appropriate ways of achieving this in the present circumstances, whether through international travel, digital engagements, or a mix of both.
- We recognise that circumstances will change as projects progress. Please be assured that the Academy will strive to accommodate necessary changes to your workplan and to honour costs that you have incurred in good faith whether plans go ahead or not.

Who are we?

The Royal Academy of Engineering is harnessing the power of engineering to build a sustainable society and an inclusive economy that works for everyone.

In collaboration with our Fellows and partners, we're growing talent and developing skills for the future, driving innovation and building global partnerships, and influencing policy and engaging the public.

Together we're working to tackle the greatest challenges of our age.

The Newton Fund is an investment made by the UK Government's Department of Business, Energy and Industrial Strategy (BEIS) and forms part of the UK's ODA commitment.

Its aim is to develop science and innovation partnerships that promote the economic development and welfare of developing countries.

The Royal Academy of Engineering is a delivery partner to the fund.

What is Engineering X?

Engineering X is a new international collaboration, founded by the Royal Academy of Engineering and the Lloyd's Register Foundation, that brings together some of the world's leading problem-solvers to address the great challenges of our age.

Our global network of expert engineers, academics and business leaders are working in partnership to share best practice, explore new technologies, educate and train the next generation of engineers, build capacity, improve safety and deliver impact.

Where we began

Since 2014 the Academy's global activities have grown considerably and include:

- Cooperation with **30 engineering academies** across the world
- Supporting collaborations between **1000+ organisations** (HEIs, PEIs, industry..) between UK and global south
- Building capacity of **2000+ individuals** through innovation and Frontiers programmes
- Working in partnership **with 18 LMIC governments** (60+% global population) through Newton Fund

What if we aligned this vast international network to tackle Global Grand Challenges?

"We are a National Academy but we have a Global Outlook"

- **Dame Ann Dowling OM DBE FRS FREng** , former Academy President

We tackle challenges in which...

- The engineering community can play a distinctive, positive role
- Complex and global character of the challenge requires collaboration across geographies, sectors and disciplines
- There is an existing body of knowledge, practices and solutions that can be readily adapted
- Targeted research and innovation solutions, developed with end users/ stakeholders, can have high impact

Goals and Activity Areas

SYSTEMIC IMPACT ON GLOBAL CHALLENGES

DEEP ENGAGEMENT WITH DIVERSE COMMUNITIES

EVIDENCE & INSIGHT
Evidence building to characterise the scale and nature of the challenge, map how it is likely to change, and identify and engage with its main stakeholders

GRANTS & AWARDS
High-impact programming to confront global challenges, building operational excellence which assures safety, promotes diversity and values innovation

COMMUNITY BUILDING & ENGAGEMENT
Global community building across sectors and disciplinary boundaries to ease knowledge flow, spur collaboration and practice sharing, and build trust

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Rethink
Reimagine
Reshape