HUN-REN Központ

NEMZETKÖZI KABINET

Összefoglaló tájékoztató nemzetközi együttműködési lehetőségek, konferenciák és webináriumok vonatkozásában

2025. május 14.

TARTALOM

I. 4. Kutatásmenedzsment Szakmai Nap

A negyedik alkalommal kerül megrendezésre a Kutatásmenedzsment Szakmai Nap a Nemzeti Kutatási, Fejlesztési és Innovációs Hivatal szervezésében, ezúttal a Pázmány Péter Katolikus Egyetem Információs Technológiai és Bionikai Karral együttműködésében.

A programsorozat 2023-ban indult azzal a céllal, hogy az Európai Uniós trendekhez igazodva előmozdítsa a hazai kutatásmenedzser közösség tagjainak aktív együttműködését és növelje nemzetközi láthatóságukat, ezáltal erősítve a szakma elfogadottságát és professzionális megítélését a hazai és nemzetközi K+F+I szektorban.

A rendezvény célja, hogy fórumot teremtsen az európai K+F+I szektor aktuális eseményeinek és trendjeinek megvitatására, miközben lehetőséget kínál a szakmai kapcsolatépítésre, tapasztalatok megosztására és közös gondolkodásra. A szakmai napra elsősorban az egyetemek, kutatóintézetek és kutatóközpontok kutatásmenedzsmenttel foglalkozó szakembereit várják továbbá, intézményenként több résztvevőt is örömmel fogadnak.

A rendezvény jelenléti formában kerül megrendezésre. Az eseményen való részvétel ingyenes, de regisztrációhoz kötött.

Regisztrációs határidő: **2025. május 20., 16:00 óra**

Időpont: **2025. május 22., 10:00-15:30**

Helyszín: **Pázmány Péter Katolikus Egyetem, Információs Technológiai és Bionikai Kar 1083 Budapest, Práter utca 50/A.**

Az eseményre regisztrálni a **Linken** tudnak.

II. Marie Skłodowska-Curie Actions posztdoktori ösztöndíj – pályázatírási workshop

A Nemzeti Kutatási, Fejlesztési és Innovációs Hivatal a Fiatal Kutatók Akadémiájával és a HUN-REN Természettudományi Kutatóközpontjával együttműködésben jelenléti workshopot szervez a Marie Skłodowska-Curie Postdoctoral Fellowships (MSCA PF) ösztöndíjprogramjára való pályázáshoz kapcsolódóan.

A workshopra elsősorban olyan kutatók jelentkezését várják, akik pályázatukat az MSCA PF aktuális, 2025. szeptember 10-i beadási határidővel kiírt pályázati felhívására kívánják benyújtani, és már rendelkeznek pályázattervezettel. A workshopon a pályázattervezetek alapján a pályázat részletes megírásával kapcsolatos konkrét kérdésekre kaphatnak válaszokat, gyakorlati tanácsokat, nyertes pályázattal rendelkező szakértőktől és az MSCA nemzeti kapcsolattartótó

A jelentkezők létszámának függvényében várják az MSCA PF keretében kutatót fogadó témavezetők jelentkezését is.

A workshopon a részvétel ingyenes, de regisztrációhoz kötött, melyre **2025. május 22**-ig van lehetőség. Tervezett létszám: 20 fő.

Időpont: **2025. május 27., 10:00 – 14:00**

Helyszín: **Nemzeti Kutatási, Fejlesztési és Innovációs Hivatal, 1077 Bp., Kéthly Anna tér 1.**

Az eseményről további információkat a **Linken** olvashatnak.

III. Marie Skłodowska-Curie Actions Postdoctoral Fellowships – online pályázatírási workshop angol nyelven

A Nemzeti Kutatási, Fejlesztési és Innovációs Hivatal a Fiatal Kutatók Akadémiájával, a HUN-REN Természettudományi Kutatóközponttal és az Eötvös Loránd Tudományegyetem Természettudományi Karával együttműködésben online workshopot szervez a Marie Skłodowska-Curie Postdoctoral Fellowships (MSCA PF) ösztöndíjprogramjáról.

Az online workshopra elsősorban olyan kutatók jelentkezését várjuk, akik pályázatukat az MSCA PF aktuális, 2025. szeptember 10-i beadási határidővel kiírt pályázati felhívására kívánják benyújtani, magyar fogadóintézménnyel. A workshopon a pályázat részletes megírásával kapcsolatos konkrét kérdésekre kaphatnak válaszokat, gyakorlati tanácsokat, nyertes pályázattal rendelkező szakértőktől és az MSCA nemzeti kapcsolattartótól.

Az online workshopon való részvétel ingyenes, de regisztrációhoz kötött, melyre **2025. május 23**-ig van lehetőség. A workshopon való részvételhez szükséges zoom linket **május 27**-én kapják meg a résztvevők.

Időpont: **2025. május 28., 10:00 – 13:00**

Helyszín: **Online**

Az eseményről további információkat a **Linken** olvashatnak.

IV. Kutatási eredmények piacra vitele – A tervezőasztaltól a tárgyalóasztalig / Tízéves az NKFI Hivatal

A "Kutatási eredmények piacra vitele – A tervezőasztaltól a tárgyalóasztalig" című konferencia, a 10 éves NKFI Hivatal jubileumi rendezvénysorozatának második eseménye. A konferencia az NKFI Hivatal és a Magyar Projektmenedzsment Szövetség (PMSZ) szoros együttműködésében valósul meg. További szakmai stratégiai partnerek a Magyar Innovációs Szövetség, a Nemzeti Innovációs Ügynökség, a Stradamus Zrt., a Szellemi Tulajdon Nemzeti Hivatala és a HUN-REN Magyar Kutatási Hálózat.

A négyrészes konferenciasorozat célja, hogy a szervezők ne csak visszatekintsenek az elmúlt évtized eredményeire, hanem a következő tíz év innovációs lehetőségeire és kihívásaira is fókuszáljanak. A konferenciasorozat második eseménye a kutatási eredmények piacra vitelére koncentrál.

A konferencián a részvétel ingyenes, de előzetes regisztrációhoz kötött.

Időpont: **2025. május 29., 14.00. - 17:00**

Helyszín: **Néprajzi Múzeum, 1146 Budapest Dózsa György út 35.**

További információkat az eseményről az alábbi **Linken** olvashatnak.

V. 2025. évi LIFE Információs Nap

A „Enhanced Capacity Building in Hungary” című és LIFE21-CAP-HU-LIFE HUNCAPBUILD2 rövidítésű projekt keretében, a Magyar Fejlesztésösztönző Iroda (MFOI) és a LIFE Program magyarországi nemzeti kapcsolattartói szervezésében megvalósuló Információs Napon részletesen bemutatásra kerülnek a 2025. évi környezetvédelmi, természetvédelmi, éghajlatpolitikai, valamint a tiszta energetikai pályázati felhívások és az azokkal kapcsolatos tudnivalók, bemutatkoznak sikeres hazai LIFE projektek, valamint lehetőség nyílik a nemzeti kapcsolattartókkal és projektgazdákkal való konzultációra, kapcsolatépítésre.

A Magyar Fejlesztésösztönző Iroda munkatársai május 22-én újabb e-mailt fognak küldeni a regisztrációval és a részletes programmal kapcsolatban. Kérjük vegyék figyelembe, hogy a helyszín 160 fő befogadására alkalmas.

Időpont: **2025. június 2., 10:00 – 16:00**

Helyszín: **Nemzetgazdasági Minisztérium, Pénztárterem (1051 Budapest, József nádor tér 2-4.)**

Az eseménnyel kapcsolatos kérdések esetén kérjük forduljanak a szervezőkhöz a **life@mfoi.org** elérhetőségen.

VI. Indiai pályázati felhívás a közvetlen CO2-kibocsátás lekötésére és hasznosítására a CCU-technológiák bevonásával az acéliparban

Az indiai Tudományos és Technológiai Minisztérium Tudományos és Technológiai Főosztálya (DST) pályázati felhívást tett közzé, melynek témája a közvetlen CO2-kibocsátás lekötése és hasznosítása a CCU-technológiák bevonásával az acéliparban.

A szén-dioxid-kibocsátás egyik legnagyobb hozzájárulójaként Indiában az acélipar egyben kulcsszerepet játszik az ország gazdasági fejlődésében, és a nemzeti kibocsátások mintegy 12%-át adja. Mivel India acélgyártási kapacitása 2031-es pénzügyi évre várhatóan eléri a 300 millió tonnát, szükséges a szén-dioxid-kibocsátás visszaszorítása. A pályázati felhívás szerinti cél, hogy a dekarbonizációs intézkedések és az acélágazat növekedése összhangban legyen India klímavédelmi céljaival.

A pályázni kizárólag konzorcium pályázhat (akadémiai, kutatói és ipari részvevők), amelyben legalább 51%-os indiai részvételnek kell lennie.

A pályázati felhívás részleteiről részletesen a csatolmányban olvashatnak.

Jelentkezési határidő: **2025. június 23.**

A pályázatra a következő online **platformon** van lehetőség jelentkezni.

VII. Research Risk, National Security and Due Diligence

In a few short years various key research-funding countries and regions around the world have implemented stringent and consequential requirements around working with high-risk organisations. Huge lists of institutions and entities maintained by the EU, Australia, Canada and the USA now fall under sanctions or require careful review and vetting when it comes to sensitive or military-adjacent technologies, or scholarship placements. Not to heed these requirements risks, major financial penalties, reputational damage and potential national security breaches. Dimensions Research Security allows for broad monitoring and evaluation of your institution's risk profile.

In this webinar you will find out how to track the exposure your research has to foreign talent recruitment funding programs, how you can quickly discover backing from undisclosed funders, as well as how to run simple but comprehensive due diligence vetting on a researcher's full body of work and their common collaborators, funders, topics and their multiple (and sometimes parallel) affiliations with high risk dual military and civil organisations globally.

This event is free of charge, but registration is required.

Date: **28 May 2025, 15:00 – 16:00 CET**

Venue: **Online**

You may register **Here**.

VIII. Open calls and applications

Az alábbiakban tájékoztatást adunk azon nyitott eseményekről és pályázatokról, melyek az előző hírlevelekben megjelentek.

Name	Date	Venue	Deadline	Links
European Coal in Transition: From an industrial legend to cutting-edge research for the future	15 May 2025	Jastrzębie-Zdrój, Poland		Link
Horizon Europe info days - Cluster 2	15 May 2025	Online		Link
Ibright Posztgraduális Hallgatói Ösztöndíjak a 2026-2027-es tanévre			15 May 2025	Link
Felhívás a JSPS posztdoktori pályázatán való részvételre			16 May 2025	Link
Info Day - Call for Digital Skills Academies	16 May 2025	Online		Link
Horizon Europe Research Infrastructures Info Day	20 May 2025	Online		Link
WIDERA Work Programme 2025	20 May 2025	Online		Link
Europe info days - Cluster 6 Food, Bioeconomy, Natural Resources, Agriculture and Environment	20-21 May 2025	Online		Link

MSCA lunchtime conversation - Human-AI Co-creation: How can we bring the best of human and machine together?	23 May 2025	Online		**Link**
The Momentum MSCA Postdoctoral Fellowship Programme (MTA)			31 May 2025	**Link**
Horizon Europe info days - Cluster 1	22 May 2025	Online		**Link**
Hubert Curien-Balaton Program pályázati felhívása 2026-2027-re			3 June 2025	**Link**
Yellow Research ERC training courses (Session I)	12-13 June 2025	Online		**Link**
Nominations for the Holberg Prize			15 June 2025	**Link**
Call for proposals for EIT Water: Communication Toolkit			17 June 2025	**Link**
Lump Sum Funding in Horizon Europe: Quick overview of the main features	18 June 2025	Online		**Link**
How to become an expert for Horizon Europe	19 June 2025			**Link**
Cyber Week	23-26 June 2025	Tel Aviv, Israel		**Link**
Europe - Marie Skłodowska-Curie Actions Doctoral Networks 2025 - Call info day	24 June 2024	Online		**Link**
AI Week	25-26 June 2025	Tel Aviv, Israel		**Link**
Quantum Day	26 June 2025	Tel Aviv, Israel		**Link**
European Space Agency Post-graduate Research Grant Programme			31 July 2025	**Link**
A Nemzeti Kutatási Kiválósági Program (NKKP) pályázati felhívása (EXCELLENCE)			10 September 2025	**Link**
"HUN-REN Kutatói Mobilitási Program 2025" pályázati felhívás II. forduló			16 September 2025	**Link**
Fulbright Oktatói ösztöndíjak			15 October 2025	**Link**
Fulbright Kutatói ösztöndíjak			15 October 2025	**Link**
Felhívás kétoldalú akadémiai egyezmények alapján egyszeri kiutazásokhoz nyújtott 2025. évi mobilitási igénybejelentésekhez			31 October 2025	**Link**

Kérjük szíves közreműködésüket abban, hogy a tájékoztató azon részei, amelyek a kutatóhely számára relevánsak, megküldésre kerüljenek annak vezetősége, illetve minden érdeklődő és érdekelt munkatárs részére.

Együttműködésüket köszönjük!

Azadi Ka Amrit Mahotsav

विज्ञान एवं प्रौद्योगिकी मंत्रालय
MINISTRY OF SCIENCE AND TECHNOLOGY
विज्ञान एवं प्रौद्योगिकी विभाग
DEPARTMENT OF SCIENCE & TECHNOLOGY
सत्यमेव जयते

CALL FOR PROPOSAL UNDER CLIMATE, ENERGY, AND SUSTAINABLE TECHNOLOGY (CEST)

CARBON CAPTURE AND UTILISATION (CCU) DEPLOYMENT IN STEEL SECTOR

GENERAL INFORMATION & FORMATS FOR SUBMISSION OF PROJECT PROPOSALFOR FINANCIAL ASSISTANCE

Last Date of Submission: 23rd June 2025
ONLINE MODE ONLY
(https://onlinedst.gov.in/Login.aspx)
NO HARDCOPY

सत्यमेव जयते

Government of India
Ministry of Science & Technology
Department of Science & Technology
Technology Bhavan, New MehrauliRoad
New Delhi – 110016

CALL FOR PROPOSALS ON CARBON CAPTURE AND UTILISATION (CCU) DEPLOYMENT IN STEEL SECTOR

BACKGROUND AND RELEVANCE TO CALL

India is at a critical juncture in its efforts to decarbonize hard-to-abate sectors, especially the steel industry. As one of the largest contributors to carbon emissions, the steel sector plays a pivotal role in the country's economic development, contributing approximately 12% to national emissions. With its steelmaking capacity set to reach 300 million tonnes by FY 2031, it is essential to focus on carbon emissions to avoid consuming a significant share of the global carbon budget by 2050. Hence, decarbonization efforts are needed to ensure that growth of the sector is aligned with India's climate goals.

Decarbonization efforts in the steel industry are primarily categorized into two approaches.

(1) Smart Carbon Usage (SCU): This approach focuses on modifying existing processes to reduce carbon emissions. Strategies include improving energy efficiency, utilizing by-product gases for further conversion into valuable products. For instance, replacing coke with biomass-based alternatives or hydrogen in blast furnaces can significantly l**ower emissions.**

(2) Carbon Direct Avoidance (CDA): CDA aims to eliminate carbon emissions by replacing carbon-based processes with renewable energy sources. This involves adopting technologies such as hydrogen-based direct reduction of iron ore and utilizing electric arc furnaces powered by renewable energy. To decarbonise steel sector, around 2.4-3.0 tonne CO_2 needs to be abated per tonne of crude steel production based on the process adopted. According to World Steel Association (WSA), there is no single solution to CO_2 free steelmaking, and a broad portfolio of technological options is required, to be deployed alone, or in combination. India's commitment to net-zero emissions by 2070, as announced by Hon'ble Prime Minister during COP26, further reinforces the need for advancing CCU technologies to address emissions from steel industry. CCU emerges as a **crucial solution** to reduce emissions from the steel industry. CCU has the potential to capture up to **90% of CO_2 emissions** from the BF-BOF process, transforming one of the most carbon-intensive industries into a sustainable one.

In this context, CCUS has gained significant relevance to achieve Net-zero commitments, and the Steel industry is one of the main sectors that can deploy this enabler at hyper-scale level as it will enable the sector to reduce the carbon emission intensity up to 30-35%. India ranks as world's second-largest steel producer, with current capacity of 150+ MMTPA (Million Metric Ton Per Annum), and poised for significant growth – ~500 MMTPA by 2050, and further expanding to ~790 MMTPA by 2070. This expansion will be fuelled by robust demand across key sectors including infrastructure, construction, automotive, capital goods, etc. However, this growth will pose significant challenges due to increasing carbon emissions. Emissions from Steel sector are primarily driven by large share of fossil-fuel based BF-BOF (Blast Furnace- Basic Oxygen Furnace) and DRI-EAF(Direct Reduced Iron - Electric Arc Furnace) production technologies in India leading to high emission intensity of ~2.6 tCO2/tcs, significantly higher than global average of ~1.9 tCO2/tcs (tonne of crude steel-tcs).

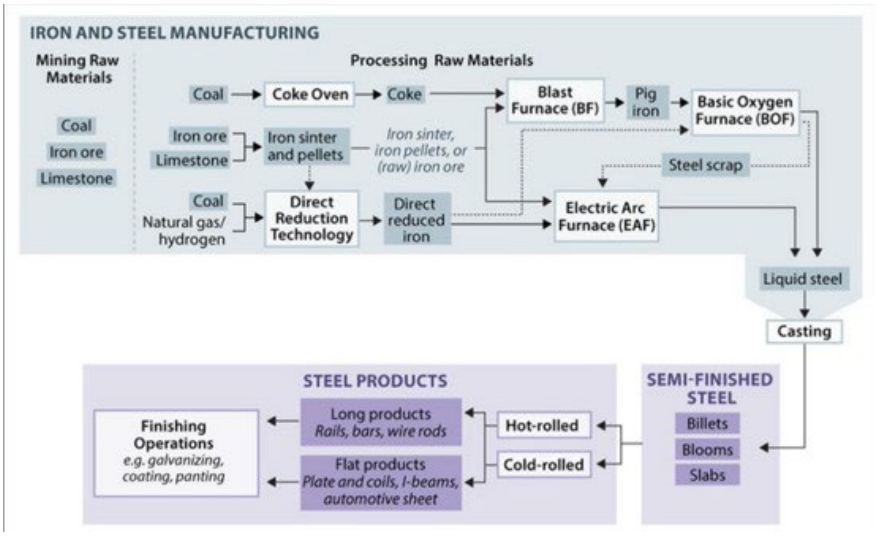

FIGURE 1: THE IRON AND STEEL MAKING PROCESS

According to the International Energy Agency (IEA), the steel industry accounted for 8% of global energy-related CO_2 emissions in 2020, with emissions primarily stemming from fossil energy use (75% from coal) and process emissions. To address climate change and ensure sustainable economic development, it is crucial to reduce emissions in the steel industry and transition to more sustainable production methods. Pathways to low-carbon production must be tailored to region-specific circumstances. If CCUS technology is adopted, emissions could be reduced by up to 90% per tonne of steel. This involves capturing CO_2 emitted during steelmaking and either repurposing it for industrial use

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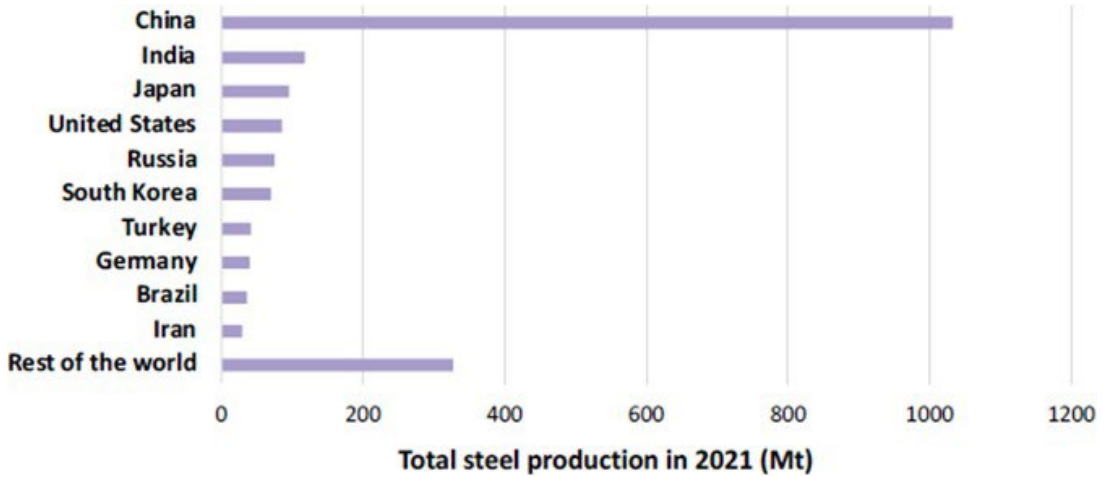

FIGURE 2: TOP 10 STEEL PRODUCING COUNTRIES

There are two main contributing processes for the CO_2 emissions during steel manufacturing,

(i) Usage of Coke/Coal in the existing Blast-BF/Direct reduced iron-DRI furnaces (Upto 70%) and Electric arc furnaces, Lime Dolomite Kilns

(ii) Burning fuel for heat generation (Upto 10-15%) and Remaining 20-25% from indirect emissions i.e. mainly. the emissions from reduction calcining and carburization are referred to as hard-to-abate emissions as they are intrinsic to the chemistry of steel manufacturing.

This call focuses on capturing these hard-to- abate emissions (direct CO2 emissions from Steel industry) and their utilization.

Steel sector has developed various Non-Capture Carbon footprint reducing strategies such as operational excellence, valorisation of flue gases, deployment of Coke Dry Quenching (CDQ) systems, improving Energy efficiency including converting low temperature and high temperature calories heat from Electric Arc Furnaces (EAF), casters etc into power or usage of alternative low carbon emission fuels. However, fully mitigating the emissions from steel manufacturing requires the implementation of CO_2 capture and Utilisation technologies.

Primarily, for the steel sector, Capture technology is critical due to inherent characteristics of the steel plant. Selection of the right capture technology is paramount for the success of the whole system. With the steel industry committed to aligning with the decarbonization goals of the Government of India, new technologies aimed at reducing the sector's emission intensity will play a key role.

There is a need for Innovators and technology providers to work in a synergized manner in order to understand technologies, scalability, implementation in the Indian context, related specifications, operational details, challenges and economics of the technologies.

In this context, the Department of Science and Technology (DST) announces a Call for Proposals for demonstrating CCU technologies in Steel Sector. This special call aims to accelerate the development and implementation of innovative Carbon Capture and Utilization in India.

Objectives and Expected Deliverables:

The call proposes to develop and deploy innovative CCU Test beds in Steel Sector with thrust on:

1. Developing CO_2 Capture + Utilization integrated unit in an Steel Industrial set up that uses a method intended to retain 95 - 99% of CO_2 from Blast Furnace (BF)/Coke Oven Gas (COG)/Basic Oxygen Furnace (BOF)/Direct Reduced Iron (DRI)/Raw Synthesis Gas during conditioning process with a purity exceeding 95% (atleast 1-2 Tons Per Day of CO_2 Capture).
2. Utilisation (Atleast 1-2 Tons Per Day of Captured CO_2 derivatives like ethanol, crude algae oil, mineralisation into aggregates, carbon monoxide, food grade CO_2, olefins, 1.Sustainable aviation fuel, blastic/peridotite rocks, etc.) from the already captured CO_2 from various steel making processes.

The call emphasizes on the following Technical Thematics:

- To develop and optimize advanced materials for CO_2 absorption and adsorption, tailored specifically for the steel sector with emphasis on synthesizing materials that demonstrate high performance in real-gas scenarios.

- Utilize computational and AI/ML enabled tools for predicting, modelling and simulating CO_2 capture processes. This will aid in identifying optimal absorbents/adsorbents and refining process designs for industrial application.

- Enhance the efficiency of existing CO_2 capture processes, such as amine-based absorption, adsorption, membrane separation, and cryogenic separation. Focus on reducing associated costs, minimizing corrosion, and improving regeneration techniques.

- Develop methods to seamlessly retrofit CO_2 capture technologies into existing steelmaking processes, including BF-BOF and DRI/EAF routes, ensuring minimal disruption and enhanced carbon efficiency.

- Design and implement efficient gas-solid contacting systems that improve the performance of CO_2 capture processes. These systems should reduce the process footprint and overall costs while enhancing capture efficiency.

- Investigate and develop adsorption-based separation processes for gases such as CO and H_2 from steel mill off-gases. This includes utilizing CO as an alternative reductant in the iron-making process, contributing to overall carbon neutrality.

- Research and development of innovative sorbent regeneration methods that align with reactor configurations. These methods should aim to maximize the lifespan and efficiency of the sorbents while reducing operational costs.

- Conduct detailed evaluations and pilot demonstrations of various CO_2 capture technologies in steel plants. This will provide critical insights into their feasibility, scalability, and impact on reducing carbon emissions in the steel industry.

Development and demonstration of **any one** of the preferred below cited innovative and cost-effective carbon capture and utilisation technologies specifically tailored for Steel sector but not limited to:

- Oxyfuel Combustion technology for carbon capture. To accelerate oxy-firing to higher TRLs.
- Absorption - Amine-based, alkaline solutions, ionic liquids, and ammonia. To develop and deploy energy sustainable and efficient amine scrubbing technology in steel sector
- Advanced solvents, Solid sorbents, and Membrane systems for the separation of CO_2, with specific emphasis on high temperature/novel materials, process intensification, and nanomaterials.
- Membranes - Inorganic, polymeric, facilitated transport and mixed-matrix.
- Adsorption - Zeolites, carbon-based, Metal-Organic Frameworks (MOFs)), metal oxides and supported amines.
- Calcium Looping - Combustion and reforming. To accelerate calcium looping technology to higher TRLs.
- Establishing sustainable and Techno-economically viable solutions for CCU Technologies in steel sector as India’s pathways towards Net zero targets.

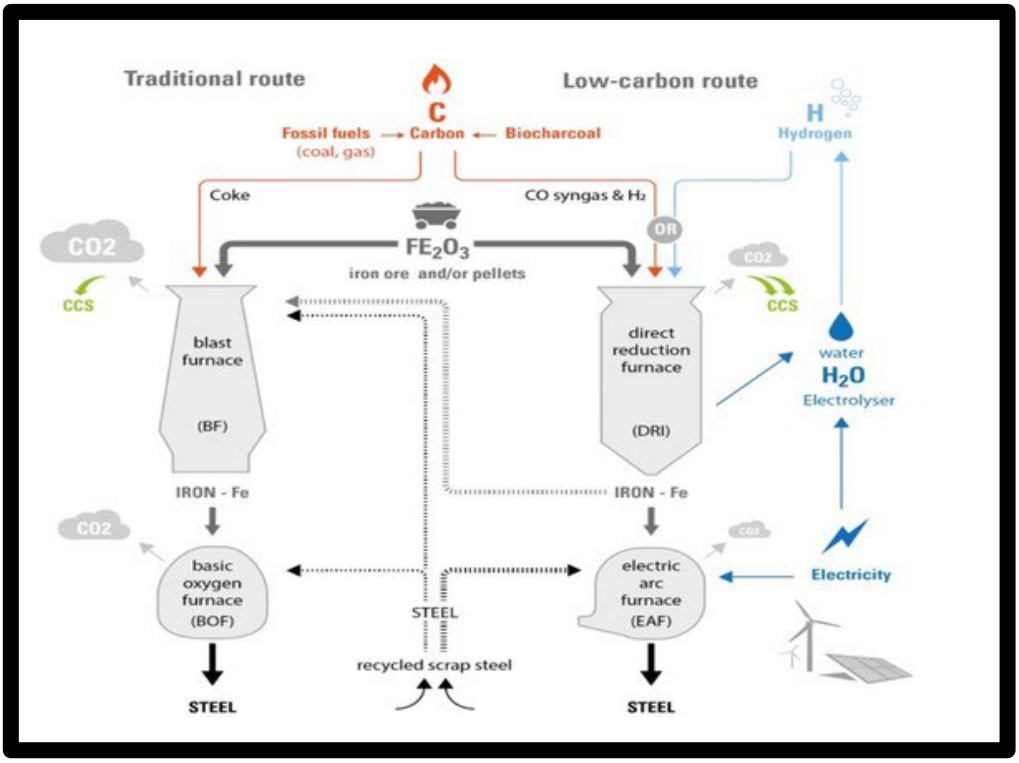

FIGURE 3: SCHEMATIC PRESENTATION OF CLASSICAL AND LOW-CARBON ROUTE STEEL PRODUCTION AND CO2 CAPTURE UNIT (FIGURE TAKEN FROM: HTTPS://NETZEROINDUSTRY.ORG/METHODOLOGY/)

The detailed area for prospective research is as defined below in Figure 4

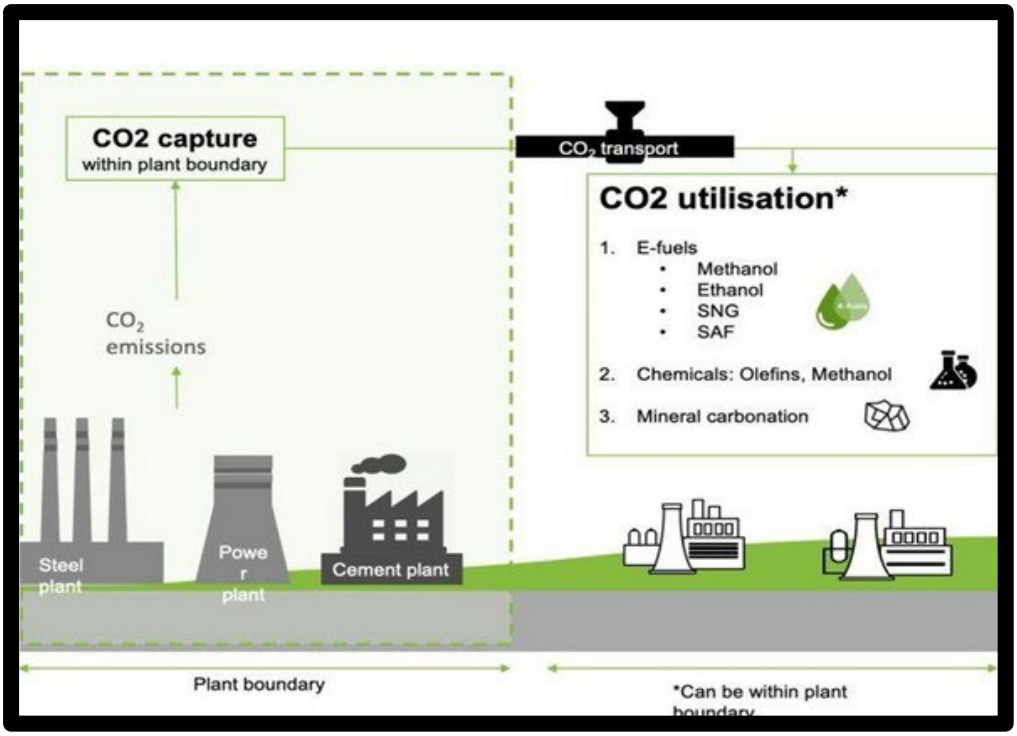

FIGURE 4: SCHEMATIC PROCESS FLOW OF CCU PATHWAYS IN STEEL INDUSTRIES (FIGURE ADAPTED FROM GREENING THE STEEL SECTOR IN INDIA ROADMAP AND ACTION PLAN: MINISTRY OF STEEL, SEPTEMBER 2024)

Development of preferred below cited CO2 Utilization Technologies but not limited to:

- CO2 can be used in various processes specific to steelmaking, with or without hydrogen, depending on available resources and market demand.
- Production of Polypropylene Carbonate Polyols eg olefins (from propylene oxide and CO2).
- **Mineralization:** Soda ash, Carbonates. Development of Mineral carbonation technologies
- Ethanol synthesis from CO2 based on reverse water-gas shift followed by CO hydrogenation.
- Electrochemical/Photochemical Conversion: CO2 can be transformed into CO or syngas through electrochemical or photochemical methods, enabling recycling of CO2 in steelmaking as CO.
- Hydrogen-Based CCUS: CO2 can be converted into ethanol, and Sustainable Aviation Fuel (SAF) using hydrogen-based CCUS technologies.
- **Catalytic / Thermal conversion:** Urea, Plastics, chemicals.
- · Co electrolysis of steam and captured CO2 to make blue synthesis gas/ synthetic ammonia..
- Production of Food-grade CO2 (Beverages) from captured CO2 using purification and liquefaction technology.
- **Biological conversion (Fermentation, Photosynthesis):** Bio-ethanol, Algae for liquid fuel, crude algae oil (CAO), algae-based proteins etc.

Focused advancements in these areas will help enable CCUS in the steel sector, supporting both sustainability and industrial resilience

Table 1: CO_2 Capture Technologies and their benchmarks for 1 - 2 TPD Carbon Capture Capacity

Technology	Key Points	Problem Statements	Qualitative Benchmark
CO_2 Capture from steel mill	● Advanced materials for CO_2 absorption /adsorption. ● Computational and AI/ML enabled tools for predicting, modeling and process simulation Sorbent development aligned with reactor configurations.	➢ High costs of material development and process simulation and integration. ➢ Corrosion issues in amine-based systems. ➢ Need for efficient gas-solid contacting systems.	✓ High selectivity and stability of materials. ✓ Scalable and cost-effective process integration.
CO_2 Capture from amine-based absorption, adsorption, membrane, cryogenic separation.	● Major CO_2 source: Blast Furnace (BF-BOF route)	➢ Energy-intensive capture processes. ➢ Optimization of CO_2 regeneration processes.	✓ Compatibility with existing industrial processes. ✓ Sustainable and cost-effective integration.
Oxy-Fuel Combustion	● Uses pure oxygen instead of air for combustion, producing a CO_2-rich flue gas. ● Reduces nitrogen dilution, making CO_2 capture easier.	➢ Requires an Air Separation Unit (ASU), increasing costs. ➢ Modifications in burner and furnace design required. ➢ High oxygen production energy demand.	✓ Produces high-purity CO_2, making compression and storage easier. ✓ Lower NO_x emissions compared to conventional combustion.
Pre-Combustion Capture	● CO_2 is removed before combustion by converting carbon-rich fuels into syngas (CO + H_2). ● Used in integrated gasification combined cycle (IGCC) plants.	➢ Requires major changes in blast furnace and gasification processes. ➢ High capital costs. ➢ Not widely demonstrated in steel plants.	✓ Can be integrated with hydrogen-based steel production (H_2-DRI). ✓ Higher efficiency than post-combustion capture in new plants.
Chemical Looping Combustion (CLC)	● Uses metal oxides as oxygen carriers to combust fuel, separating CO_2 naturally. Reduces energy penalty of solvent-based capture.	➢ Development of durable oxygen carriers needed. Technology not yet commercialized at a large scale. ➢ High-temperature material challenges.	✓ Potential for lower operational costs compared to Post Carbon Capture (PCC). ✓ Can reduce steel sector CO_2 emissions.

Table 2: CCU processes and requirements for up-scaling in India

CCU process		Category	Capacity (TPD)	Remarks
CO_2 Capture		Scale-up	5-10	• Amine absorption-based process demonstrated • Other processes need to be evaluated
CO_2 Utilization without H_2	Organic Carbonates	R&D & Pilot	1	• Targeted product: dimethyl carbonate (DMC)/ ethylene or propylene carbonate
	Mineral Carbonates	R&D & Pilot	1	• Usage of Linz-Donawitz (LD) slag
	Electrochemical	R&D & Pilot	1	• Targeted product: Syn-gas/ ethylene/ ethanol
	Photochemical	R&D & Pilot	1	• Targeted product: Syn-gas/ / ethanol
	Biological	R&D & Pilot	1	• Targeted product: ethanol/ butanol/ enzyme
CO_2 utilization with H_2	Thermochemical	Pilot & Scale-up	1-5	• Targeted product: Syn-gas/ / Synthetic Ammonia
CCU enablers: H_2	Water Gas Shift (WGS)	Pilot & Scale-up	1-5	• Usage of BF gas
	Methane Pyrolysis	R&D & Pilot	1	• Usage of Coke oven/ BF gas
	Methane reforming	Pilot & Scale-up	1-5	• Usage of Coke oven gas
	Biomass gasification	Pilot & Scale-up	1-5	• Usage of MSW/ food waste

Overall energy requirement, cost, CO2 and area footprint are of importance for all the above processes

Table 3: CO_2 Utilisation Technologies and their benchmarks

CCU Products	Status of current Utilization Technologies in sectors other than Steel	Technology visibility	Present TRL	Specific mass (ton CO_2/ton product
Urea	Commercial	High	9	0.73
Soda Ash (Sodium Carbonate)	Development scale	Medium	7 to 9	0.41
Polycarbonates /polyols	Commercial	Medium	9	0.17
Calcium Carbonate	Demonstration scale	High	7 to 9	0.44
Microalgae	Demonstration scale	High	7 to 9	1.8
Ethanol	Demonstration scale	Medium	7 to 9	1.91
Formic acid	Development scale	Medium	4 to 6	0.95
Magnesium carbonates	Development scale	Medium	4 to 6	0.26
Carbon Monooxide	Developmental scale	Medium	3 to 4	1.57
Blue Synthesis Gas – Co Electrolysis	Developmental scale	Medium	5-7	1.00

- Techno-Commercial Analysis (TCA) and Life-Cycle Assessment (LCA) of upscaling standalone CCU plants.

- The proposal should emphasize the connection to the process development within the framework of the **Make in India** Scheme and reducing India's import dependency and strengthening self-reliance for a Viksit Bharat.

- The deliverables should promote research and innovation in CCU processes, with a focus on enhancing efficiency, cost-effectiveness, and scalability etc.

- The outcomes of this initiative should not only showcase the pathways of decarbonisation through CCU route in Steel sector, but should also be a critical confidence building measure for potential stakeholders to uptake the technology for further scale up.

- It is envisioned that through continuous Research and Innovation under this test bed in developing innovative catalysts, materials, electrolyser technology, reactors, and electronics, the cost of Green Steel via the deployed CCU technology in Steel Sector may considerably be reduced.

Eligibility Criteria

- The proposals have to be submitted in the consortium mode only (Academia/Researcher and Industry). The consortium is expected to be led by faculties/ scientists working in regular position in recognized academic institutions, public funded R&D Institution/ Laboratories, etc. Participation of relevant industries/ PSUs/ start-ups is mandatory. The consortium should essentially include at least a technology designer and a technology provider. Installation, Testing and Validation to be done in collaborating site with participating Industry. The Industry partner should contribute at least **30%** of the total project cost **(in cash)** towards the project.

- All Indian partners in a single project must be legal separate entities. However, these can be more than one investigator from the same entity.

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- Participating Indian companies must:

1. Be incorporated in India under the Companies ACT 1956/2013.
2. Have at least 51% stake of the Company be owned by Indian Citizens living in India.
3. Have been in operation for at least 3 financial years before the closing date fo application.
4. Be registered under relevant provisions of Good & Services Taxation (GST) Act.
5. Have required expertise and capacity to technically contribute to the proposed project.

- Indian Companies need to provide the following with the application as Evidences they have the resources, expertise, finances and clear intent to undertake the project:

1. An audited copy of their submitted annual accounts for the last three years.
2. Sole proprietors and partnership firms are not eligible for support under this call.
3. Companies headquartered and owned outside India and their subsidiaries in India or vice versa, are not eligible to receive funding directly or indirectly.

4. **Project cost:** No ceiling

5. **Project duration:** 3 years maximum.

- Proposal Formats and Submission: Proposals may be submitted at e-PMS (https://onlinedst.gov.in/Login.aspx) in the prescribed format (as attached) of Individual proposal along with other requisite documents before the closing date of the call.

Contact Persons:

i. Dr Anita Gupta, Adviser & Head,
Climate, Energy and Sustainable Technology Division (CEST), Department of Science & Technology (DST), Technology Bhavan,
New Mehrauli Road, New Delhi- 110016
Email: anigupta@nic.in
Phone:011-26523977

ii. Dr Neelima Alam, Associate Head & Scientist F,
Climate, Energy and Sustainable Technology Division (CEST), Department of Science & Technology (DST),
Technology Bhavan, New Mehrauli Road, New Delhi- 110016
Email: neelima.alam@nic.in
Phone: 011-26590467

iii. Dr Sanjai Kumar, Scientist 'E',
Climate, Energy and Sustainable Technology Division (CEST),
Department of Science & Technology (DST),
Technology Bhavan,
New Mehrauli Road, New Delhi- 110016
Email: sanjai.k@gov.in
Phone: 011-26590270

TIMELINES OF THE FUNDING OPPORTUNITY AS FOLLOWS

Call Opening Date: 22nd April 2025

Deadline for submission of proposals: 23rd June 2025

Proposal for Support Under
Special Call on CCU deployment in Steel Sector

The Project Proposal could be submitted in the enclosed format through **ONLINE MODE ONLY** (**https://onlinedst.gov.in/Login.aspx**) **NO HARDCOPY** of the project proposal should be submitted.

PROJECT TITLE

CONTENTS

Application received without the above documents with incomplete information will not be entertained.

I. Proposal Summary *(To be limited to singleA-4 page)*

<table>
<tr><td>I</td><td>Project Title</td><td colspan="2"></td></tr>
<tr><td>II</td><td>Project cost (Amount in lakhs)</td><td>DST: Rs…… Lakhs</td><td>Industry Partner: Rs…. Lakhs</td></tr>
<tr><td>III</td><td>Duration (in months)</td><td colspan="2"></td></tr>
<tr><td>III</td><td>PI Details</td><td colspan="2"><table><tr><td>Name</td><td>Gender</td><td>Date of Birth</td><td>Category (General/SC/ST/Others etc)</td></tr><tr><td></td><td></td><td></td><td></td></tr></table></td></tr>
<tr><td>IV</td><td>Co-PI Details</td><td colspan="2"><table><tr><td>Name</td><td>Gender</td><td>Date of Birth</td><td>Category (General/SC/ST/Others etc)</td></tr><tr><td></td><td></td><td></td><td></td></tr></table></td></tr>
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<tr><td>XI</td><td>Deliverables</td><td colspan="2"></td></tr>
</table>

Budget Details:

A.	**Project Manpower (Post & Nos)**	DST:	Industry:
B.	**List of Equipments required**	DST:	Industry:
C.	**Details of Fabricated Plant /prototype, if any**	DST:	Industry:
D	**Nature of Contribution from Industry** *(Please elaborate)*	In Cash : In Kind:	

Budget Estimate

S. No.	Item Head	1st Year DST Share	1st Year Industry Share	2nd Year DST Share	2nd Year Industry Share	3rd Year DST Share	3rd Year Industry Share	Total (Rs. Lakhs)
A	**Non-recurring (Capital Items)**							
1	**Permanent Equipments**							
2.	**Plant cost /Fabricated systems/demonstration models**							
A'	***Subtotal (capital items)***							
B	**Recurring Items (General)**							
1.	**Manpower*** *(As per DST OM. No. DST/PCPM/Z-06/2022 dated 26.06.2023 and SR/S9/Z-05/2019 dated 21.08.2019)*							
2.	**Consumables Miscellaneous**							
3.	**Contingencies**							
4.	**Travel**							
5.	**Other Cost (Outsource work etc), if any (Civil, E&C)**							
6.	**Overhead** **(***as per DST norms, OM .NO. SR/S9/Z-11/2013 dated 24.02.2015***)**							
B'	***Sub total (General)***							
C	**Total cost of the project (A'+B')**							

Note # *The manpower recruited for the project should be paid as per the rules of the institute and guidelines of the Government of India (OM. No. DST/PCPM/Z-06/2022 dated 26.06.2023 and SR/S9/Z-05/2019 dated 21.08.2019). The posts which are not covered under the guidelines but permissible under projects at the host institute are also permitted. The temporary staff employed for the project by the organization is not treated as employees of the Government of India and the deployment of such staff at the time of termination of the project will not be the concern/responsibility of the Government of India.*

Total DST Share:
Total Collaborating Industry Share:
Total Project Cost:

1. Details of Itemized Budget

(Ensure to mention the detailed justification)

1. **Non-recurring (Capital Items)**

A1. Equipment:

Budget for Permanent Equipment:

Description of Equipment	Unit Landed Price (Rs.in lakh) (CIF+ Custom Duty/ Taxes + others charges such as GST etc.)	Nos. Of Equipment	Total Rupees (Rs.in lakh)	Justification in relation to project	Borne by DST/Industry	Quotation atAnnexure- / page no* indicating total cost of equipment in Indian rupees
					Gross total =	

Note # Sheet indicating the total landed cost in Indian rupees (mention currency conversion rate considered including freight, taxes, GST, spares, special installation, etc.)

A2. Fabrication System: Tailor made models/ experimental set up (if any).

i) Budget for Fabrication system/Tailor made items

Description of fabricated system	Unit Landed Price (CIF + Custom Duty+ others)	Nos. of Equipment	Total Rupees (Rs. in lakh)	Justification in relation to project	Borne by DST/Industry	Enclosed Quotation at Annexure- / page no* indicating total cost of equipment in Indian rupees
			Gross total:			

1. **Recurring Items (General)**

B1. Manpower

Designation*	Educational Qualification	Experience in years, if applicable	Justification

Note: Industry contribution towards manpower is not eligible

Note # *The manpower recruited for the project should be paid as per the rules of the institute and guidelines of the Government of India (OM. No. DST/PCPM/Z-06/2022 dated 26.06.2023 and SR/S9/Z-05/2019 dated 21.08.2019). The posts which are not covered under the guidelines but permissible under projects at the host institute are also permitted. The temporary staff employed for the project by the organization is not treated as employees of the Government of India and the deployment of such staff at the time of termination of the project will not be the concern/responsibility of the Government of India.*

B2: Manpower Budget Details

JRF /SRF/ RA, Project Associates etc. Details (applicable for the given category)

- **Fellowship amount per month : Rs. ……(1st year), Rs……(2nd year), Rs……(3rd year)**
- **Research Fellows allowances per month ie (HRA etc…...), if applicable: Rs**.....**(1st year), Rs……(2nd year), Rs……(3rd year)**

Designation	Total Emoluments (in Rupees) lakhs				No. of persons	Total Amount (Rs. Lakhs)
	1st Year	2nd Year	3rd year	Total		
	Gross amount required for manpower budget head =					

Note *# Mention HRA % applicable to Manpower in your Organisation and the classification category of your city/town.....(Please ensure to fill in all the above details otherwise it shall be considered as NIL)*

B3. Consumables

Items	Amount (Rs. in lakh)	To be borne by DST/Industry	Justification
	Gross total =		

Part –II Justification for consumable items more than Rs 50,000/-, if applicable)

Name of the item	Unit price (Rs. Lakhs)	Qty needed	Amount (Rs. Lakhs)	Enclosed Quotation at Annexure

B4. Contingencies:

Budget for Contingencies (To be borne by DST)

Items (unforeseen expenses, patents, report preparations etc)	Amount (Rs. in lakh)	Justification
Total		

B5. Domestic Travel

Budget for Domestic Travel (To be borne by DST)

Domestic Travel	Total Amount (Rs. Lakhs)	Detailed Justification (In case of extensive field visits needed in the project indicating breakup of cost w.r.t. to journeys, mode and class of transport needed)
Total		

B6. Other Costs, if applicable

Budget for Other Costs (To be borne by DST)

Item	Total (Rs. in lakh)	Detailed Justification (derived cost calculation and relevant Quotation at Annexure- / page no*)
Gross total =		

Industry Partner budget / Contribution: The Industry partner should contribute at least **30%** of the total project cost **(in cash)** towards the project.

Submit similar above detail breakup for each Industry Partner.

Organization details:

1. **Designation of the officer in organization who is vested with financials power:**

2. **Whether Beneficiary organization registered with Govt. of India PFMS***Yes/ No
   *(refer website: https://pfms.nic.in/Users/LoginDetails/NewLayoutLogin.aspx)

3. **If not get it registered at website (to receive the grant from GOI), If yes, inform Agency code registered at PFMS**
   Website: https://onlinedst.gov.in/Login.aspx

IV. Proforma for Bio-Data of Principal Investigator (PI) & Co-PI

1. Name :

2. Gender :

3. Category :

4. Date of Birth:

5. E-mail ID

6. Mobile No. :

7. Qualifications:

S. No.	Degree	Institution	Year	Division/Class

8. Employment Experience

S.No.	Position & Organisation	Nature of Job	Period

9. List of Publications *(For last 5 years only)(Only journal publications with impact factor)*
Journals/Book Chapters

10. Patents filed/Granted with details:

11. Books Published /Chapters contributed:

12. (a) Sponsored Research Projects:

T. No	Title	Sponsoring Agency and Officer Concerned	Period	Amount	Achievements

(b) Consultancy Projects

S. No	Title	Sponsoring Agency	Period	Amount

(c) Sponsored Research/Consultancy Projects submitted for approval

S.No.	Title	Agency to whom submitted	Duration	Amount

V. DEPARTMENT OF SCIENCE AND TECHNOLOGY

(POLICY ON CONFLICT OF INTEREST)

FOR APPLICANT

Issues of Conflicts of Interest and ethics in scientific research and research management have assumed greater prominence, given the larger share of Government funding in the country's R&D scenario. The following policy about general aspects of Conflicts of Interest and code of ethics are objective measures that are intended to protect the integrity of the decision-making processes and minimize bias. The policy aims to sustain transparency, increase accountability in funding mechanisms, and provide assurance to the general public that processes followed in the award of grants are fair and non-discriminatory. The Policy aims to avoid all forms of biases by following a system that is fair, transparent, and free from all influence/ unprejudiced dealings, before, during, and after the currency of the program is entered into to enable the public to abstain from bribing or any corrupt practice to secure the award by assuring them that their competitors will also refrain from bribing and other corrupt practice and the decision makers will commit to preventing corruption, in any form, by their officials by following transparent procedures. This will also ensure a global acceptance of the decision-making process adopted by DST.

Definition of Conflict of Interest:

Conflict of Interest means "any interest which could significantly prejudice an individual's objectivity in the decision-making process, thereby creating an unfair competitive advantage for the individual or to the organization which he/she represents". The Conflict of Interest also encompasses situations where an individual, in contravention of the accepted norms and ethics, could exploit his/her obligatory duties for personal benefits.

1. **Coverage of the Policy**:

a) The provisions of the policy shall be followed by persons applying for and receiving funding from DST, Reviewers of the proposal, and Members of Expert Committees and Programme Advisory Committees. The provisions of the policy will also apply to all individuals including Officers of DST connected directly or indirectly or through intermediaries and Committees involved in the evaluation of proposals and subsequent decision-making process.

b) This policy aims to minimize aspects that may constitute actual Conflicts of Interest, apparent Conflicts of Interest, and potential Conflicts of Interest in the funding mechanisms that are presently being operated by DST. The policy also aims to cover, although not limited to, Conflicts of interest that are Financial (gains from the outcomes of the proposal or award), Personal (association of relative / Family members), and Institutional (Colleagues, Collaborators, Employer, persons associated in a professional career of an individual such as Ph.D. supervisor, etc.)

2. **Specifications as to what constitutes a Conflict of Interest**.

Any of the following specifications (non-exhaustive list) imply a Conflict of Interest if,

i. Due to any reason by which the Reviewer/Committee Member cannot deliver a fair and objective assessment of the proposal.

ii. The applicant is a direct relative or family member (including but not limited to a spouse, child, sibling, or parent) or personal friend of the individual involved in the decision- making process or if any relative of an Officer directly involved in any decision-making process / has influenced interest/ stake in the applicant's form etc. The applicant for the grant/award is an employee or employer of an individual involved in the process as a Reviewer or Committee Member; or if the applicant to the grant/award has had an employer-employee relationship in the past three years with that individual.

iii. The applicant to the grant/award belongs to the same Department as that of the Reviewer/Committee Member.

iv. The Reviewer/Committee Member is the Head of an Organization from where the applicant is employed.

v. The Reviewer /Committee Member is or was, associated with the professional career of the applicant (such as Ph.D. supervisor, Mentor, present Collaborator, etc.)

vi. The Reviewer/Committee Member is involved in the preparation of the research proposal submitted by the applicant.

vii. The applicant has joint research publications with the Reviewer/Committee Member in the last three years.

viii. The applicant/Reviewer/Committee Member, in contravention to the accepted norms and ethics followed in scientific research has a direct/indirect financial interest in the outcomes of the proposal.

ix. The Reviewer/Committee Member stands to gain personally should the submitted proposal be accepted or rejected.

x. The Term "Relative" for this purpose would be referred to in section 6 of the Companies Act, 1956.

3. <u>Regulation</u>:

The DST shall strive to avoid conflict of interest in its funding mechanisms to the maximum extent possible. Self-regulatory mode is however recommended for stakeholders involved in scientific research and research management, on issues about Conflict of Interest and Scientific Ethics. Any disclosure about the same must be made voluntarily by the applicant/Reviewer/Committee Member.

4. <u>Confidentiality</u>:

The Reviewers and the Members of the Committee shall safeguard the confidentiality of all discussions and decisions taken during the process and shall refrain from discussing the same with any applicant or a third party unless the Committee recommends otherwise and records for doing so.

5. Code of Conduct

5.1 To be followed by Reviewers/Committee Members:

(a) All reviewers shall submit a conflict of interest statement, declaring the presence or absence of any form of conflict of interest.

(b) The reviewers shall refrain from evaluating the proposals if the conflict of interest is established or if it is apparent.

(c) All discussions and decisions about conflict of interest shall be recorded in the minutes of the meeting.

(d) The Chairman of the Committee shall decide on all aspects of the conflict of interests.

(e) The Chairman of the Committee shall request that all members disclose if they have any conflict of interest in the items of the agenda scheduled for discussion.

(f) The Committee Members shall refrain from participating in the decision-making process and leave the room concerning the specific item where the conflict of interest is established or is apparent.

(g) If the Chairman himself/herself has a conflict of interest, the Committee may choose a Chairman from among the remaining members, and the decision shall be made in consultation with Member Secretary of the Committee.

(h) It is expected that a Committee member including the Chairperson will not seek funding from a Committee in which he/she is a member. If any member applies for a grant, such proposals will be evaluated separately outside the Committee in which he/she is a member.

5.2 To be followed by the Applicant to the Grant/Award:

(a) The applicant must refrain from suggesting referees with potential Conflict of Interest that may arise due to the factors mentioned in the specifications described above in Point No.2.

(b) The applicant may mention the names of individuals to whom the submitted proposal should not be sent for refereeing, clearly indicating the reasons for the same.

5.3 To be followed by the Officers dealing with Programs in DST:

While it is mandatory for the program officers to maintain confidentiality as detailed in point no. 6 above, they should declare, in advance, if they are dealing with grant applications of a relative or family member (including but not limited to a spouse, child, sibling, parent) or thesis/ post-doctoral mentor or stands to benefit financially if the applicant proposal is funded. In such cases, DST will allot the grant applications to the other program officer.

6. Sanction for violation

6.1 For a) Reviewers / Committee Members and b) Applicant

Any breach of the code of conduct will invite action as decided by the Committee.

6.2 <u>For Officers dealing with Program in DST</u>

Any breach of the code of conduct will invite action under the present provision of CCS (Conduct Rules), 1964.

7. <u>Final Appellate authority:</u>

Secretary, DST shall be the appellate authority in issues about conflict of interest and issues concerning the decision-making process. The decision of the Secretary, DST in these issues shall be final and binding.

8. <u>Declaration</u>

I have read the above "Policy on Conflict of Interest" of the DST applicable to the Reviewer/ Committee Member/ Applicant/ DST Scheme or Program Officer# and agree to abide by provisions thereof.

I hereby declare that I have no conflict of interest of any form about the proposed grant* I hereby declare that I have a conflict of interest of any form about the proposed grant*

* & # (Tick whichever is applicable)

Name of the Applicant

(Strike out whichever is not applicable)

(Signature with date)

VI. Undertaking from the Investigator(s)

Project Title:

1. I/We have carefully read the terms and conditions of the Clean Energy Research Initiative (CERI) Programme and I/We agree to abide by them.
2. I/We have not submitted this or a similar Project proposal elsewhere for financial support.
3. I/We have explored and ensured that the equipment and the basic facilities described in the Research Proposal, will actually be available as and when required for the purpose of the Project. I/We shall not request financial support under this project, for procurement of these items.
4. I/We undertake that spare or idle capacity of the permanent equipment procured under the Project will be made available to other legitimate users from parent and other organizations.
5. **I/We have enclosed the following:**

a Endorsement from the Head of the Institution

(on letter head)

b Undertaking from the Industry Partner(s)

Complete Project Proposal with all enclosures

c *(1 soft copy as .doc file/pdf)*

VII. Endorsement from the Head of the Organization

(*To be typed on the letter-head of the organization*)

1. Project Title

2. Certified that the organization welcomes the participation of Dr/Mr/Mrs ..... as the PI and Dr/Mr/Mrs……as the Co-PI for the project and that in the unforeseen and legitimate event of discontinuation by the PI, the Co-PI will assume full responsibility for completion of the project. Information to this effect, endorsed by me, will be promptly sent to the DST
3. Certified that the equipment, other basic facilities and other administrative facilities as per the terms and conditions of the award of the Project, will be extended to the investigator(s) throughout the duration of the project
4. The Organization shall ensure that financial and purchase procedures are followed as per the prevailing norms of the organization, within the allocated budget.
5. The Organisation shall provide timely the Statement of Expenditure and the Utilisation Certificate of the grant as required by the DST in the prescribed format.

(Head of the Institute)

Seal/Stamp

Date:
Place:

VIII. Endorsement from Industry Partner

(On the official letter head)

I have gone through the Project proposal entitled……..submitted by ……

(Name of PI) …of… *(Name of the Institute)* for DST funding and noted the obligations and responsibilities indicated in our name which are as below:

1. Contribution in financial terms *(mention amount in **Rs**.) which should be at least**30%** in **cash** of the Total Project cost.*

2. Contribution in Kind *(list activities)* if any

I hereby affirm that Industry is committed to participate in the Project to the full extent as indicated including financial liabilities accruing therefrom as detailed above. A brief profile of the partnering Industry is summarised below:

Name of Organization Line of Business:

No. of employees:

Annual Turn over:

The Annual Report for the last financial year is enclosed:

(Head of the Organization)

Seal/Stamp

Date:

Place:

Annexure-1 Budgetary quotes