

## INVITED SESSION SUMMARY

**Title of Session:**

Renewable and Sustainable Energy Technologies

**Name, Title and Affiliation of Chair:**

Chair: Assoc. Prof. Prasad Kaparaju - Griffith University, Australia

**Details of Session (including aim and scope):**

Renewable and Sustainable Energy Technologies track focuses on recent developments to improve the production, storage and use of renewable energy to meet the energy demand and decarbonise the energy and transport sector in economically and sustainable way. This includes Solar photovoltaic energy, solar thermal energy systems, concentrating solar power, wind power; wave, ocean and hydro power; biomass and bio energy; geothermal energy technologies; ground-source and air-source heat pumps; materials for renewable energy technologies; hydrogen production and storage, fuel cells; power conversion systems, stand alone and grid-connected converters; designs for renewable energy; integration of renewable energy sources with buildings and the built environment; financial incentives, policies, regulations and solutions for the transition to renewable energy; combined heat and power; renewable energy based district heating and cooling, Grid integration of renewable energy and battery technologies.

Papers submitted under this track falls under following themes:

- Harvesting Renewable energy - Solar photovoltaic energy, solar thermal energy systems, concentrating solar power, wind power; wave, ocean and hydro power; biomass and bio energy; geothermal energy technologies; ground-source; fuel cells, materials for renewable energy technologies;
- Energy storage - Battery technologies, hydrogen production and storage, Hydro pump storage, compressed air storage, storage technologies
- Application and Integration of renewable energy - Grid integration of renewable energy , integration of renewable energy sources with buildings and the built environment, power conversion systems, designs for renewable energy integration, application of heat pumps, stand alone and grid-connected converters, Grid reliability with renewable energy
- Energy policies - financial incentives, policies, regulations and solutions for the transition to renewable energy,
- Sustainable Waste Management and Resource Recovery

Environment - mitigation technologies (e.g. carbon capture and storage (CCS), carbon capture and utilization (CCU), solar radiation management, Wind Resources Environmental Impact, Environmental Impact Assessment

Techno-socio-economic aspects – Techno-economic evaluation of energy conversion technologies,

Systems - carbon accounting, energy modelling, life cycle assessment (LCA), smart infrastructure, Technology and Systems Aspects

Sustainability - the United Nations Sustainability Development Goals (SDGs), Environmental Impacts and Sustainability of Renewable energy technologies

**Main Contributing Researchers / Research Centres (tentative, if known at this stage):**

**Website URL of Call for Papers (if any):**

**Email & Contact Details:**