India Clean Energy (ICE) Cluster®

India's 1st Clean Energy Cluster

MAKE IN KERALA. MAKE IT CLEAN®

Accelerating Clean Energy Ecosystem in Kerala

GLOBAL TECHNOLOGY PARTNERS

A Socio-Environment Initiative by Avant Garde Innovations Pvt Ltd. E – info@avantgardeinnovations.com
ICE Cluster VISION
Establish Kerala as one of the world's leading clean energy cluster and green economy ecosystem.

ICE Cluster MISSION
Empowering opportunities and generating results through actionable projects and initiatives that directly benefit Kerala's clean energy based enterprises.

Introduction
"The ICE Cluster is a Visionary, Pioneering and Innovative Platform to Attract, Incubate and Grow Cleantech Enterprises and its Ecosystem"

The India Clean Energy (ICE) Cluster is envisaged as a nonprofit organization established with a unique partnership initiative between the clean energy host company Avant Garde Innovations, the Public Sector and the Private Sector. It seeks to establish across India, beginning with the state of Kerala, a pioneering Green Network of Clean Energy Clusters where enterprises are powered purely by 100% Clean Energy. It provides a highly supportive hub where Entrepreneurs, Business Leaders, Government Agencies, Investors, Universities, and other interested organizations can collaborate towards the successful commercialization of cleantech enterprises which will build a prosperous green economy, improve quality of our lives and sustain our fragile environment.

As a pioneering organization, the ICE Cluster will focus on innovative ways to foster a Green Ecosystem and market transformation for Clean Energy Powered Enterprises. Through actionable projects and initiatives aimed at globally promoting India's Clean Energy based enterprises, we aim to establish and promote a new concept of "MAKE IN KERALA, MAKE IT CLEAN ©".

ICE Cluster is all about clean energy. The ICE Cluster provides both a vision for India's clean energy future and a way forward to grow clean energy based businesses by providing a unique platform for them. ICE Cluster connects the public, private and academic sectors so they can work together to experiment with new technology that saves money and energy and helps in creating local jobs. When successful, the ICE Cluster can be replicated in various states around India where:

- **Energy is Created Cleanly**: Transitioning ICE Cluster to a Renewable Energy Eco Hub.
- **Energy is Used Efficiently**: Reducing pollution/waste and increasing energy efficiency through the promotion of global best practices for Low-Carbon-Make and Energy Efficiency
The BENEFITS of ICE Cluster to Kerala are:-

- Advances Kerala as a Clean Energy Leader in India and rest of the World
- Establish and develop a model of Green Sustainable economy in Kerala
- Attract National & Global companies to set up base at the India Clean Energy Cluster
- New source of revenue generation for the Govt through the new enterprises
- Creates Primary Jobs in Kerala for Clean Energy Powered Businesses and others;
- Reduces carbon pollution and air pollution in the state
- Reduces Peak Hour Load in local regions wherever Clean Energy Clusters are established
- Includes a R&D role for Regional Educational and Scientific Institutions
- Enables CSR participation for all Host Partners involved with the Non Profit ICE Cluster

A Globally Collaborative Strategy

To be launched in 2015, the ICE Cluster is a nonprofit sustainable economy development organization dedicated to growing energy efficient businesses powered by clean energy in India. The ICE Cluster will be established as a collaboration between the clean energy host company Avant Garde Innovations, Partners, Stakeholders (Govt, local authorities, Incubators, Industrial Parks, R&D centres, Educational institutions, Banks, Investors etc) and other National & Global entities keen to collaborate with the ICE Cluster. Potential Founding Partners and/or Host centres in Kerala could be Kside, Kinfra, Technopark, Infopark, Smart City, MSME-DIC, CII, KTU, Sidco, Kseb, Emc, Anert, Kscste, Keltron, Sidbi, Ficci, Assocham, Nasscom, TiE, Angel Networks etc.

Through various global collaborations the ICE Cluster aims to establish itself towards national and international recognition, helping to put India's clean energy powered companies in a national and global spotlight. The ICE Cluster, to begin with, will have the support of Strategic Global Technology partners and their leadership representing the: (1) EMerge Alliance (a US based Global Open Industry Alliance advancing Standards for energy efficient DC Power in buildings and a member of US Green Building Council), (2) International Dark Sky Association (a US based global non profit entity promoting energy/lighting efficiency), (3) IP500 Alliance (a Germany based global alliance promoting Open Source Wireless standards for security & safety applications in the 'Internet of Things' landscape and many other leading globally recognised organisations, thereby facilitating and linking India's local companies with global partners in the form of industry groups, business development, technology transfer, entrepreneurial programs and trainings.

ICE Cluster will also join the Switzerland based Global Cleantech Cluster Association (GCCA), an association of the world's leading 50 Cleantech Clusters consisting of around 10000 companies. The ICE Cluster will be the 1st Clean Cluster in India and 5th in entire Asia and be placed on a global map of Clean Clusters with access to their highly valuable network of successful Clean Clusters with opportunities for global funding, markets, partnerships, knowledge sharing and more.

Entrepreneurship and Start-ups

ICE Cluster supports start-ups and MSMEs with mentoring and links them wherever possible with start up funding sources. ICE Cluster can also facilitate international strategic partnerships. An example would be a collaboration between Cluster companies and the strategic technology partners of ICE Cluster to promote commercialization of innovative technologies.

Education, Research and Exchange Programs

ICE Cluster aims to host Cleantech Conferences, Workshops and Symposia. ICE Clusters will be a platform to raise awareness levels and allow students in cleantech research a live introduction to practical business experience via field visits to companies operating in ICE Cluster and facilitates internships & exchange programs within the ICE Cluster. It also enables companies in ICE Cluster to conduct potential hiring from the pool of visiting qualified fresh graduates.
A Unique Initiative-Based Approach

The ICE Cluster employs a highly entrepreneurial approach to its mission, focusing on integrated clean energy projects that showcase the capabilities of private sector businesses and research institutions as the main 'product' of the enterprise. Marketing and business development is accomplished through partnerships that help the ICE Cluster deliver its product results into the marketplace while proactively identifying the next initiatives for future development.

The ICE Cluster sets itself apart from other organisations through actionable initiatives and innovation infrastructure. Besides common sectors, a special priority will be given to Green Enterprises in the categories of Cleantech such as Solar/Wind energy, Biofuels, Energy Efficiency, Green Buildings, New Materials, Waste Management, Water Conservation, Smart Grid/Storage, EVs etc. These initiatives give Kerala's Green Enterprises a platform to showcase their advanced technologies, services and talents to help their business grow and prosper nationally and globally.

The India Clean Energy Cluster also perfectly aligns itself with the new '100 Smart Cities' project by Govt of India where the use of clean energy is one of the key factors stipulated to qualify as a Smart city. Apart from this, ICE Cluster will also support through its various incidental activities the Central Govt target of achieving 160000 MW of clean energy from Solar and Wind energy by 2022.

With innovation as the core of its character, the ICE Cluster is the ideal platform to pioneer a better clean energy future by:

- Increasing renewable energy production
- Improving energy efficiency
- Reducing peak energy usage
- Reducing pollution from greenhouse gas emissions
- Motivating others to transition towards cleaner energy

By doing so, ICE Cluster will:

- Protect and improve our sustainable economic health
- Attract and retain top companies in Kerala and the skilled workers they need
- Provide economic prosperity and environmental sustainability for our local population
- Help lead India to a clean and secure energy future

ICE Cluster seeks to EMPOWER residents, businesses and organizations to take specific, achievable actions that:

- Significantly improve energy sustainability, and maintain our exceptional quality of life

ICE Cluster will engage all stakeholders in efforts to:

- Pilot and implement innovative approaches that help achieve the region's Climate Action Plan goals
- Get the community excited about using clean energy and achieving energy efficiency
- Catalyze change and progress towards a better clean energy future
Green Economy and Market Opportunity

*Going Green isn’t just Good for the Environment - it’s Good for Business too*

New Nielsen Study Says Consumers Are Ready to Pay More for Environmental Responsibility

According to a new 2014 study by US based global survey organisation Nielsen, 55% of global online consumers across 60 countries are willing to pay more for products and services provided by companies committed to positive social and environmental impact. The propensity to buy socially responsible brands is strongest in Asia-Pacific (64%), Latin America (63%) and Middle East/Africa (63%). In Asia, Indian and Vietnamese consumers are the most likely (both 71%) to choose more eco-friendly options, despite the extra cost. The numbers for North America and Europe are 42% and 40%, respectively.

Manufacturing is energy and resource intensive. The sector is responsible for around 35% of global electricity use, over 20% of global CO2 emissions, and over a quarter of primary resource extraction. Products with environmentally friendly designs and companies that comply with sustainability standards for products and processes have an advantage in international markets.

The overall market for green marketing is said to be worth $3.5 Trillion by the year 2020, according to a report by Global Industry Analysts Inc. of 2011.

Tangible Benefits for Kerala's Enterprises Powered by Clean Energy

- Enables Production, Branding and Global Marketing of their Special and Niche products as "Made by 100 % Clean Energy©" to Domestic and International markets.
- Increases their Brand Value & Brand Visibility Locally and Globally as a Green Enterprise.
- Gains a Competitive Advantage in market compared to their Non-Sustainable industry peers
- Improves their Sustainability Impact on our environment and economy.
- By adopting clean energy they can distinguish themselves as Responsible Market Leaders.
- Overcomes business disruption due to frequent power failures in public power grid.
- Reduces their CO2 emissions and carbon footprint.
- Reduces their overall Energy expenditure, Increases their Energy Efficiency & Profits.

ICE Cluster Goals

The ICE Cluster aims to be internationally and nationally recognized for innovative project initiatives that connect clean energy businesses & research to catalyze economic vitality with associated environmental and community benefits. The ICE Cluster's goal is that by 2018, it has resulted in the following benefits for Kerala state which can then be replicated nationwide:

- **Job Growth**: 1000 new primary jobs through the Clusters;
- **Attraction**: 5-10 businesses/year, emphasizing headquarters and/or major regional offices, with a target of attracting at least 1 major player;
- **Incubation/Acceleration**: 10-20 new start ups/small businesses per year;
- **Projects**: One project of global significance in 3 years, and 1 per year of regional/statewide significance; and
- **Economic Impact**: $100 million economic growth from clean energy activity in the region.