



International Re-New Energy Conclave (IREC) 2022
Theme: Decarbonising for Net Zero

International Conference (Virtual)
17-18 February 2022, Mumbai, India

61 Companies | 19 Speakers

www.irecindia.net



International Re-New Energy Conclave (IREC)
Conference & Exhibition (Virtual Event)
17 - 18, February 2022, Mumbai, India

Supporting Association



Country Partner



CleanTech Partner



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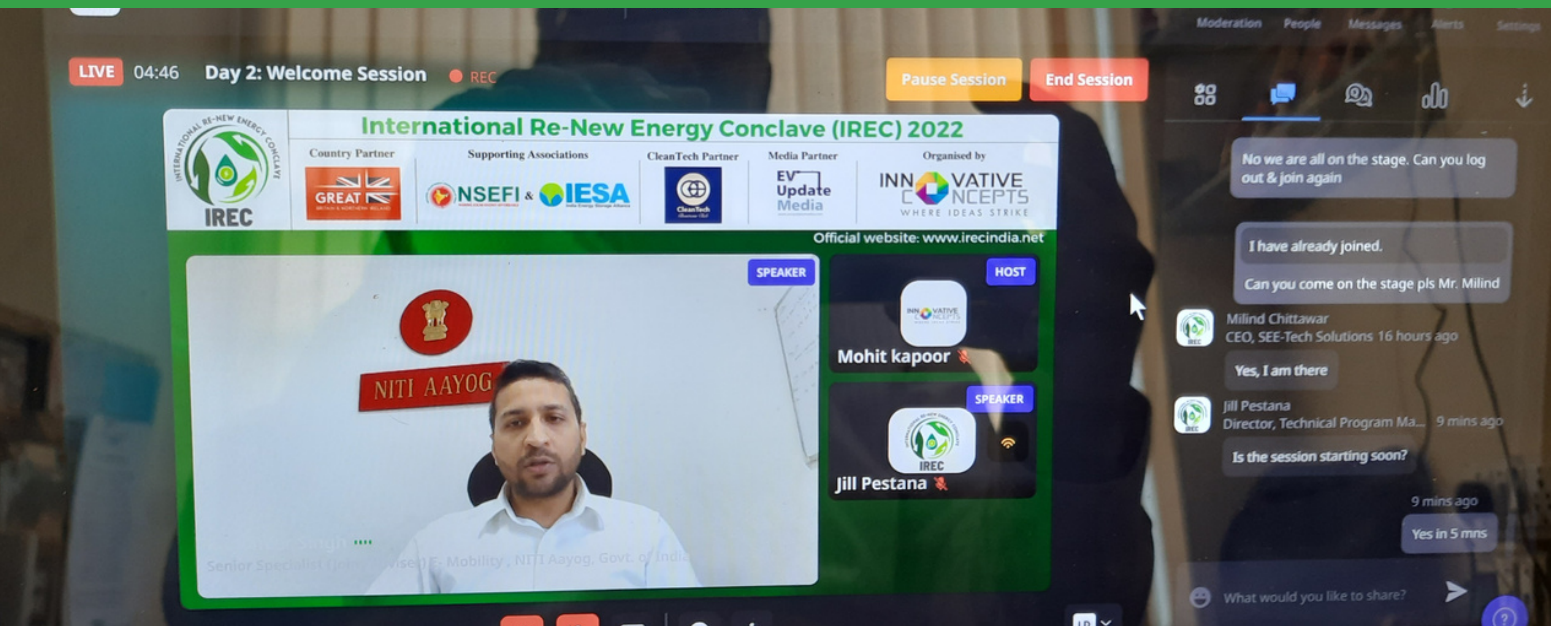
India's Investment to Move Towards Sustainability and Greener Environment

Summary

India is a rapidly growing economy. The huge population bulge of the country provides it with great potential to stand as one great power in the international community. However, the present course of action of the country may not yield quick results due to several structural issues.

The seminars under consideration is part of the efforts of IREC to amplify the initiatives of country in switching towards the renewable energy resources. Three primary aspects of switching towards the renewable energy as discussed in the seminars under consideration are introductions of electrical vehicles (EVs) in India, switching to lithium batteries primarily for fueling these electric vehicles and venturing on producing green hydrogen for the same purpose of fueling the energy needs of the country particularly for fueling the electrical vehicles.

The three parts of the seminars are briefly summarized hereunder. The main focus of the seminars are to highlight the three aspects which can make India grow more and can foster sustainability in the country.



Inaugural Session

India plans to invest 15 billion dollars in the sector of renewable energy by 2022. This investment of India is a core element of fulfilling the national interests of the country. The primary sectors in which the country will invest these finances include the transportation (in form of electrical vehicles) and power sector in form of setting up solar equipment and production of green hydrogen. The country has taken on board several foreign stakeholders and experts of the relevant fields to ensure the maximum benefits of the said investment. The ambitious nature of the project under consideration can be gathered from the fact that 2026, India shall have 26 lac electric vehicles on the road and to charge these vehicles, the country would need at least 4 lack charging stations. Electrical vehicles purpose is to ensure that power savings can take place in the country and more investments can be channelized towards the electrical vehicles sector. All the efforts planned under this umbrella ultimately move towards a single goal which is to generate the most of the power without extracting anything from the planet. Such efforts in which the planet is saved from extraction are thought to introduce sustainability by being more eco-friendly. Our planet is already in the grind where natural resources are continuously depleting and environment is exploited. This is the essence of the sustainable development approach. Only by uplifting the burden from the planet the country can hope to move on the path of sustainable development.

India, by virtue of several international agreements such as the Paris Agreement is obliged to contribute in the reduction of carbon emission and the said investment is one core means to move towards the milestones required by the country to be fulfilled. Carbon emission has to be reduced so that actual sustainability efforts can become successful.

Decarbonizing for Future



Sustainability has become the mouth-word of the policy makers across the globe. The planet is already under stress and it is high time that every state individually plays its role alleviating the burden of carbon emission on the planet. Policy makers are devoting more efforts in devising policies which can make the planet safer both in long and short term. Carbon emission is the greatest threat to the environment and its reduction can ensure better sustainability across the globe. For this purpose, India aspires to play an integral role in decarbonizing the planet. Being the second most populous country of the world, India undertakes the moral responsibility to reduce the carbon emission and adhere to the Paris Agreement in true letter and spirit. For this purpose, production of green hydrogen is the chosen course of action by the country. During the seminar, the panelists not only detailed the benefits of green hydrogen and its potential to address the issues being faced by the country but also they presented the challenges being faced by the country in this regard. By dint of these insights, the policy makers can choose the most viable method to reap the maximum fruits from their efforts.

Green hydrogen can help the country to reduce its carbon emission dramatically. Green hydrogen is an efficient renewable energy source and the country has the fully planned and well developed mechanism to produce it. The benefits that this source of energy will provide are enormous, however, the challenges laid in its path to fully materialize the goals are also daunting. The first challenge as shared by the panelists in the seminar is the storage of carbon dioxide. The country knows that how carbon dioxide can be stored but they are not well versed in storing that safely.

LIVE 02:32 Panel 2: Electric mobility & hydrogen

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CleanTech Partner: CleanTech
Media Partner: EV Update Media
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SPEAKERS:

- Varun Patel
- Anirudh Patil
- Arun Vinayak
- Abhishek Gupta
- Megha Rajpal
- Dr. Amitabh Saran
- Madhusudhan Chellappa

Chat Window:

- Madhusudhan Chellappa: Good afternoon All.
- Kalyan Korimerla: This is Kalyan Korimerla MD Etrio. Is the panel about to start?
- When does the Panel 2 discussion start?
- Hi Amitabh Is this were we join?
- Arun Vinayak: @Kalyan : You have to join backstage
- Kalyan Korimerla: Thankyou Arun



Safety of the planet and the life on it is the primarily concern of the sustainable development. Dumping CO₂ in the sea or under the Earth may prove beneficial on short-term basis but on the longer run several repercussions may appear such as leakage of CO₂ that may produce who knows what damages. Practically more efforts are needed for proper dumping of CO₂ so that the planet can be protected from any hazards that may be a source for the well-being of the globe.

The panelists have discussed in the seminar that all the challenges that have been envisaged so far are more related to the storage. Taking a leap of faith without adequately securing projects on all fronts is a sheer non-sense. It is high time that all stake holders involved in the process should take the charge of their respective field and collaborate in good spirits with the best use of the technology. The technology required to make the process viable and workable is already present, but using that technology requires finances, management and collaboration from all stakeholders. These concerns are to be addressed adequately if the country aims to achieve milestones in sustainable development.

Energy Transition by Companies



India is steadily industrializing which is resulting in production of huge industrial waste. This waste through different channels is impacting not only the environment but also the human life. For example, the companies who are using lead storage batteries are unable to monitor the process within these batteries. In this regard, the primary challenges shared by the panelists are briefly explained in the following paragraphs.

First of all, these companies do not have any expertise to address any mishap if and when it arises. Thermal incidents such as combustion or bursting are the commonest mishaps. These companies can put these incidents to an end but they do not know how to fix them in a wholesome manner. This inability of the companies or the lack of the expertise leads to development of several other issues. For example, toxicity of the environment and loss of the human life are just two most drastic consequences of such happenings. Thermal incidents are a threat for the humanity and the planet. Proper handling should be done so that thermal incidents can be minimized and can finally be eradicated.


Another challenge detailed by the panelists in the given seminar is that the most of the Indian companies are importing the batteries. This important consequently results in several other issues. First issue is that the costs exceed the potential benefit to be gained by these batteries.



Secondly, the companies do not have the control over the working of the battery. They can either switch it on or switch it off and they cannot take the lead of improvising or even fixing the battery when the issue arises. Resultantly, the battery has to be sent back to the country from where it is imported which not only costs more but also reduces the value of the product.

Another important challenge being faced by the Indian companies in this regard is that these companies are unable to recycle and reuse the products imported from other countries. Recycling provides a lot and therefore measures are needed to be taken that can ensure that batteries are available to be recycled after its use to ensure optimal sustainability of benefits. This also decreases the value of the products. Keeping these details in mind, it becomes evidently clear that India has the potential to reap the benefits but its system lack a few fundamental elements that are needed direly to maximize the value of the technological products and systems.


For the country to make the most of these opportunities it has to revamp its entire system by collaboration of all stakeholders. Only a guided approach can help the country to materialize its vision of switching to the renewable energy sources once and for all.




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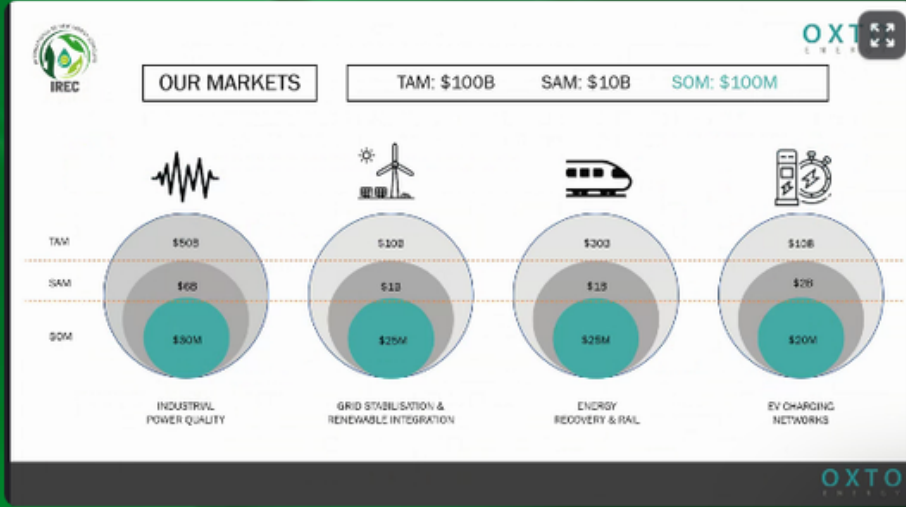
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OUR MARKETS

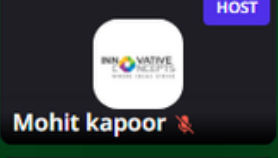
Market Segment	TAM	SAM	SOM
INDUSTRIAL POWER QUALITY	\$50B	\$6B	\$30M
GRID STABILISATION & RENEWABLE INTEGRATION	\$10B	\$1B	\$25M
ENERGY RECOVERY & RAL	\$30B	\$1B	\$25M
EV CHARGING NETWORKS	\$10B	\$2B	\$20M

SPEAKER



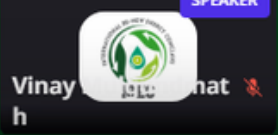
Michael Willemot

HOST



Mohit Kapoor

SPEAKER



Vinay h

Circular Economy for Net Zero



The economy of India is more or less on the linear pattern but in its efforts to move towards sustainable development, the country is aiming to switch to the circular economy. The circular economy, in the simplest terms, is an economy that creates opportunities for others and that moves towards sustainability. The efficiency of the circularity of the economy is measured through five features. These features include the material, energy use, air emissions, water flow and social impact. While designing the circular economy for the country, these parameters should essentially be kept in mind. In addition to this, the effectiveness of circularity can also be measured through several different frameworks. Different organizations adopt different methods for measuring this and one functional framework as detailed by the panelist in the seminar is through looking and analyzing three scopes.


The three scopes used to measure the circularity of the economy include measuring the performance, analyzing tiers of suppliers and the impact of the process on the society. Sustainability is not wholly and solely related to saving the planets instead it stands for securing the planet along with the meeting the demands and needs of the people in the modern times. For the country to achieve all of this it has to take bigger and bolder leaps.



The most important element discussed in this seminar is the issue of reuse, recycle and repurpose. These are comparatively newer worlds in the academic debates, but these are some of the most relevant concepts in the modern times. Through the initiative under discussion, India is not only planning to make all of these three processes more robust but also the country is trying hard to achieve the most of it. Presently, India lacks the infrastructure for making this reuse, recycle and repurpose. But the panel has given the policy makers with a rough road map through which these goals can be achieved.

Presently, India is able to recycle only 20 percent of its total e-waste. If this recycling capacity is increased only by 20 to 30 percent, the country can make a huge difference. For increasing this capacity, the most efficient use of the technology has to be made. Only by making the fullest use of technology, India shall be able to kick-start the cycle of reuse, recycle and repurpose. The relevance of circular economy to this three step mechanism is also quite strong.


The aspiration to switch to the renewable energy and to bring about circularity in the economy are intricately linked with each other for India. Both of these elements should be catered side by side only then end results can be achieved. Focusing on one aspect while ignoring the other may not prove beneficial because everything is connected in a loop for the country. India needs to make the fullest use of its available resources along with collaboration of all stakeholders if it aims to achieve something grand in the future. Stakeholders can help in generating fruitful outcome for attaining true sustainability. Lastly, the panelists have also mentioned that the results for this investment may not appear in the near future because these processes do not yield benefits quick instead they take time for their full potential to bloom. The present time is the prime time for India to invest in the said sector. Careful and calculated investment made right now would take the country several years ahead of other states in the same region. Investments are the dire need because they can help in generating the needed capital. The global aspirations of India can very much be achieved by this particular investment.




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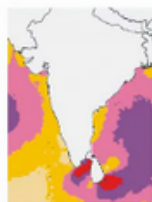
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Offshore Wind in India: Progress Made So Far

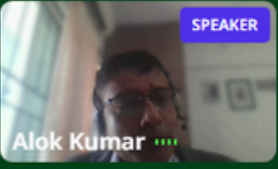
- Dec 2013: First comprehensive offshore study called 'FOWIND' started with a grant of 4 million Euro by EU.
 - This was 4 years duration project and focussed on coast of 2 Indian states i.e. Gujarat and Tamil Nadu for identification of potential zones
- Oct 2015: National Offshore Wind Energy Policy
- 2017: NIWL installed a 100 m guyed mast at Homeshwaram in Tamil Nadu.
- Nov 2017: FOWIND Consortium installed India's first offshore LIDAR off the coast of India's western state of Gujarat, in the Gulf of Khambhat
- June 2018: MNRE announced 30 GW offshore target by 2030 and 5 GW by 2022
- Dec 2018: Expression of Interest for offshore wind for 1000 MW in Gujarat released by MNRE
 - More than 35 Companies including Equinor, Macquarie Group, Vestas, Orsted expressed their interest
- January 2019: MNRE releases Draft Offshore Wind Energy Lease Rules
 - Areas to be allocated via global competitive bidding only.
 - Lease will be initially for 5 years for prospecting and 30 years for the establishment of offshore wind power projects.
- April 2019: India and Denmark entered into a cooperation agreement in the field of renewable energy with a focus on offshore wind.
- May 2020: ONGC, NTPC sign MOU to set up joint venture for renewable energy business



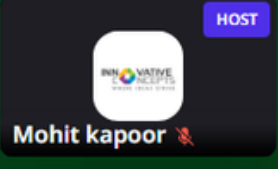
Wind Resource Classification

Class	Wind Resource Class	Wind Power Density at 10m (W/m ²)
1	Low	0-300
2	Marginal	300-600
3	Good	600-900
4	Excellent	900-1200
5	Very Good	1200-1500
6	Superb	>1500

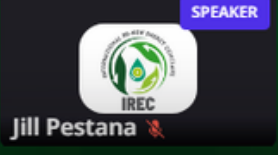
Alok Kumar SPEAKER



Mohit Kapoor HOST



Jill Pestana SPEAKER





India has so much potential to stand out amongst the community of nations by strengthening its economy. Rapid economic growth will bring long term prosperity in the country. Only through strong economy the country shall be able to hold an influence in the comity of nations. For this purpose, renewable energy source and this ambitious investment of 15 billion dollars can prove a game changer for the country. All that the country needs to do is to carry on the project with adequate care and with consensus of all stakeholders. Collaboration will be the key to success because only those economies flourish well whose all stakeholders are in alignment. So in order to achieve prosperity it is vital to create a favorable atmosphere where collaboration can flourish as well. A panelist in the seminar while comparing and contrasting the culture of India with that of America said that the collaboration at the American universities is more than it is in India. India not only needs to invest in its technological and scientific domain but also it has to bring about a culture of collaboration so that the country finally achieves the best end results.

Keeping in view the discussions and debates done in the seminar, the following recommendations may work quite effectively for the country.

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Opportunities & Challenges

Opportunities	Challenges
More than 7,500km long coastline; 70 GW capacities in two states	Onshore wind and solar power tariff have significantly decreased. Challenge is to reduce offshore wind price too
Supportive Government Policies	To come up with customised wind turbine design for lower wind velocity but to withstand typhoon
Established supply chain of onshore wind	To come up with turbine design of larger capacity (more than 12 MW capacity)
Availability of workforce	Long term planning and roadmap

Speakers: Alok Kumar, Bhatnagar, Ras, hi Gupta

screen.

Mohit Kapoor
Founder & Director, Innovativ... 17 hours ago

No we are all on the stage. Can you log out & join again

I have already joined.

Can you come on the stage pls Mr. Milind

Milind Chittawar
CEO, SEE-Tech Solutions 17 hours ago

Yes, I am there

Jill Pestana
Director, Technical Program M... an hour ago

Is the session starting soon?

Mohit Kapoor
Founder & Director, Innovativ... an hour ago

Yes in 5 mns

Recommendations



- Gaining the best from the available technology
- Bringing about collaboration of stakeholders
- Assisting and financially supporting the students from respective fields of technology
- Bringing about consensus among the stake holders.
- Carefully utilizing the funds
- Political stability and social cohesion are needed
- Active participation from the communities is needed direly for materializing the agenda of sustainability
- Educate individuals more about the importance of sustainability.
- Foster a culture which promotes collaboration in bringing about positive changes in term of sustainability.
- Better and more fruitful agreements with the international stakeholders are needed.
- Devise measures which can yield more investment.
- Calculating economic resources and their efficient utilization to bring positive outcome.
- Assessing the needs of the various sustainable development goals to enhance the effective approach to curb the problems.
- Policy formulation to bring cohesion and strength to the existing system of technological and social development.

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GreenEnco Solutions

Our 360th Innovative Optimisation Solutions are helping to increase the value of the assets for Asset Owners || Asset Lenders || Development Corporation || M&A Advisors || Developers || IPPs

Services offered:

- Utility PV
- Rooftop PV
- PV + Battery
- PV + Storage
- PV + Hybrid
- Operational Asset Optimisation
- Design Optimisation & Technical Services
- Energy Storage Services

Asset Performance Management (APM) @DC, AI and ML algorithms for O&M, Grid connection, Design optimisation

Owners/leaders engineering, Construction monitoring, Performance assessment, Grid connection, Design optimisation

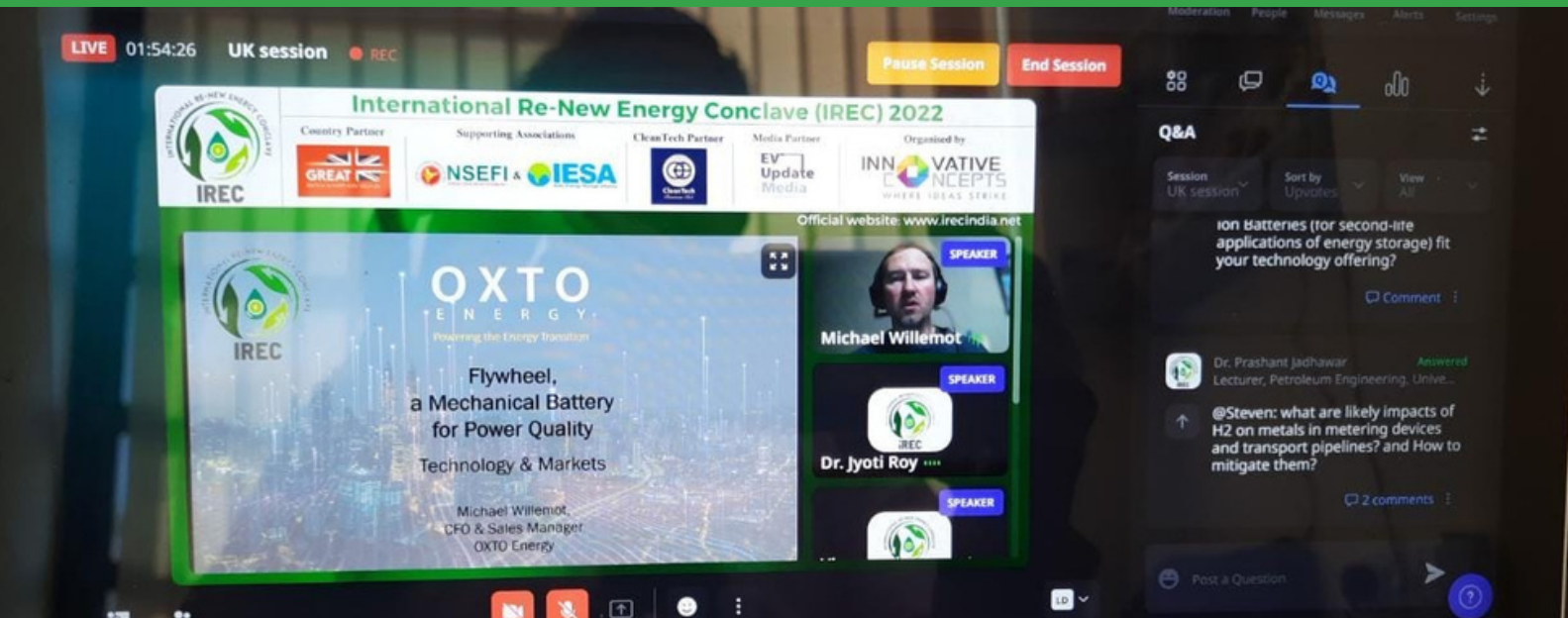
Functional description, System configuration and integration, Process management

Speakers: Dr. Jyoti Roy, Vinay h

Turn on audio



- Promoting the use of sustainable resources and daily living in order to successfully implement the sustainable Development goals.
- Focusing on education and awareness to assess the feasibility of various innovative solutions to address the energy needs.
- Positive approach and response development for the matured exercise of the existing infrastructure to overcome energy and technological challenges.
- Scaling the innovative small scale indigenous solution for the suitable growth and fabrication of new solutions of energy demand
- Reducing the carbon foot print by focusing the policy to have complete reliance on the sustainable development goals
- Cohesion of policy for the sustainable utilization of resources in the rapidly growing population of India
- Building the public awareness and agenda in order to portrays the actual challenges which need immediate attention and measures.
- Interdepartmental resources management in order to build consensus for the future development and utilization.
- Correct monitoring and assessment of the ground realities pertaining to the energy demands and increasing needs with time in respect of the population.



UK Presentations - IREC2022



Decarbonising the O&G sector is one of the surmountable challenges facing the United Kingdom to meet its 2050 climate change targets. The Netzero Technology Centre (NZTC) set up in 2017 with a £180M investment by the Governments of UK, Scotland and the City of Aberdeen is playing a prominent role in bringing investors, industry and academia to develop and deploy technologies for an affordable Energy Transition. The Technology Centre operates as one Solution Centre with three themes namely, Emissions Reduction, Integrated Energy System which includes CCUS, Hydrogen, Renewables and Offshore 4.0 focused on digitisation and automation. NZTC supports and co-funds clean technologies across the entire Technology Readiness Level. Some early-TRL disruptive technologies supported by NZTC include Direct air capture of CO₂, seawater capture of CO₂/ Hydrogen production, high-pressure electrolyser technology to name a few. The Centre has now launched TechX accelerator cohort#4 which grants funding to 12 innovative start-ups operating in the clean technologies sector.

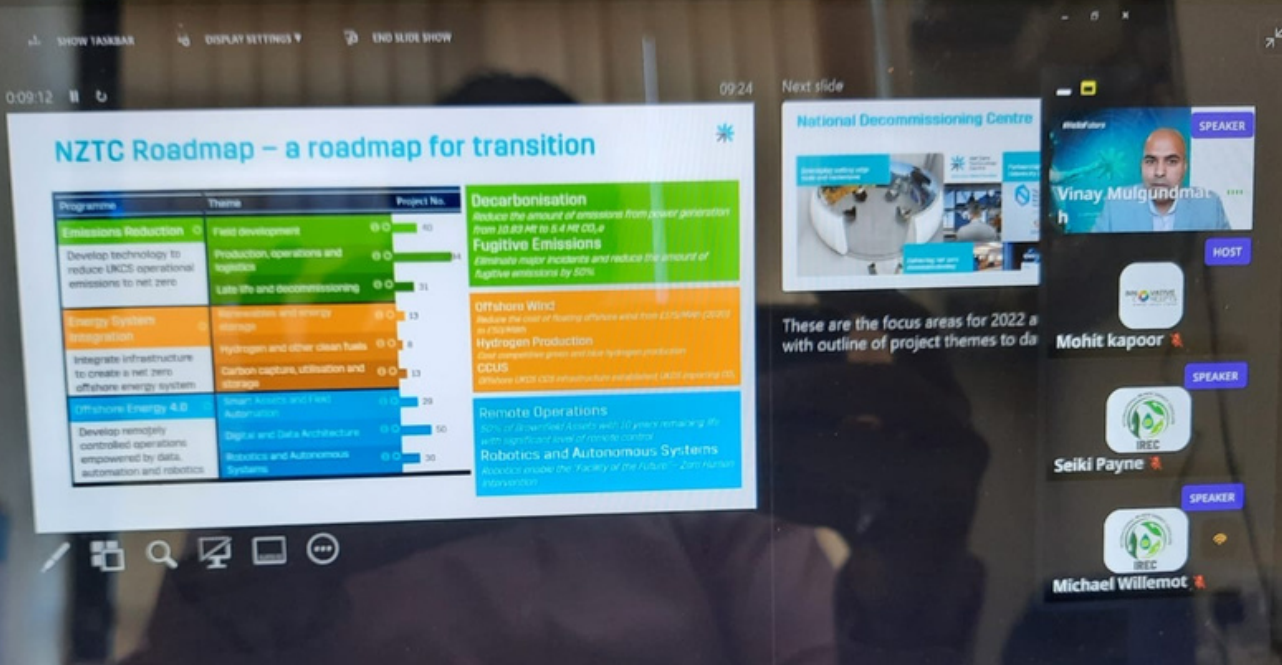
Why and How India will lead the Global Energy Transformation from a perspective of skills, resources and passion. Across the world, the people of India pollinate economies and drive the development of technology. Besides great human capital, India has the necessary resources to drive innovation, manufacturing and distribution. Lastly, the passion and 'heart' of India as a cultural phenomenon, drive both the entrepreneurial success of it's people as well as compassion for humanity and Mother Nature.

The screenshot shows a Zoom meeting in progress. The main window displays a presentation slide from Alderley Group. The slide title is "IREC 2022 Considerations and experiences in Hydrogen measurement". The slide content includes the Alderley logo, the text "Technical excellence: delivering the future", and a large graphic of a hydrogen molecule (H₂) with a green background and blue accents. The slide also features a list of bullet points under the heading "Introduction" and logos for Alderley, KELTON, and other partners. The Zoom interface shows a list of participants on the right, including Steven Morris, Vinay h, Seiki Payne, Michael Willemot, and Dr. Jyoti Roy, all marked as "SPEAKER". The bottom of the screen shows the Zoom control bar with icons for mute, video, chat, and other functions.

India can be the next California, where policy and leadership drive global progress in green technologies. This can be done through collaboration with startups on the cutting edge who may reside in the United States or anywhere in the world. Rather than outsourcing talent and businesses, there is tremendous opportunity to get business done from within and beyond India.

California continues to learn and innovate as it blazes new paths forward for society. Some of those lessons are the inherent limitations of intermittent renewable energy, the fragility of a mass scale distribution grid and the inevitable challenges posed by climate change. These realities and lessons have California challenging the status quo by encouraging localized energy production and distribution through distributed energy resources (DERs).

Where India can lead and benefit is from collaboration on technology which will advance DERs, electric vehicle charging infrastructure while also expanding access to clean, affordable and reliable energy for all. Green hydrogen will flourish as well. How can this be done? With the batteries inside of electric vehicles. Batteries on wheels or vehicle to grid integration, with continued innovation, will not only empower California to overcome wildfires and power shut offs, but developing countries where power lines do not run (and may never need to).



Much like cell phones, wireless energy will circumvent the need for poles and wires. Poles and wires lead to inherent natural monopolies that cannot move at the speed of innovation or serve all of humanity. This is where India can come in. India has the opportunity to not only improve the lives and economic prowess of India, but to also become the manufacturing hub for the electric vehicle of the future through sub-components, software and the workforce.

India can lead the electric vehicle and renewable energy revolution by leapfrogging the world like was done with cell phones. Oil rich nations with thousands of miles of power lines will not move as quickly as India in adopting wireless energy. There is no greater opportunity in the world to mitigate climate change, light up the world, expand economic opportunity and uplift society than from India. The people and planet need India to lead the third energy revolution by adopting, developing and deploying the next generation of energy technology.

EV charging has a number of challenges such as grid connection availability, demand uncertainty, specification uncertainty, lack of funding and business cases for rural areas, limited options for temporary charging and poor security features of most EV charging infrastructure.

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EV Charging Challenges

- Availability of sufficient grid connections
- Demand (Chicken and Egg scenario)
- Specification (choices of EV charging hardware/software)
- Funding (Urban vs Rural)
- Business Case
- Temporary charging
- Security

Speakers:

- Seiki Payne
- Vinay

Tronius developed the Highlander Pod in late 2021, a mobile EV charging hub with 6 EV charging sockets up to 22kW. It can be unloaded, connected to an existing 3 phase commando socket and fully functional in 15 minutes. It can be configured to utilise renewable energy generation like solar and wind, supported by battery storage inside the pod. The proof of concept prototype was created and demonstrated at a Demonstrator Showcase event at MSIP Dundee in November 2021 to coincide with COP26.

Tronius believe that the Highlander Pod or a local variant (potentially named the Tiger Pod) could fill a need in the Indian market. This could be manufactured, installed and maintained in India through a partner company. A variant of the Highlander Pod with additional charging sockets could be provided to charge 2-wheel EV's. This would be particularly relevant to addressing EV charging in rural areas as it would allow customers to "try before they buy" as the Highlander Pod will be offered under a rental model. Once the data is collected it can be turned into a Roadmap to Net Zero, which would generate business cases and educate investment decisions.

Tronius also believe that EV charging (utilising the Highlander Pod) could create an environment to support additional business opportunities and effectively turn an EV charging hub into a Community Hub. This could include cafés, restaurants, sports centres, community centre, retail, bio digesters, etc.

High performance lithium ion battery anodes are key to optimizing battery performance; however constraints on manufacturing and materials extraction limits their development. In this presentation, Jill shares development of anodes from a research perspective highlighting a few particular challenges with developing Silicon anodes and ideas for overcoming these challenges.



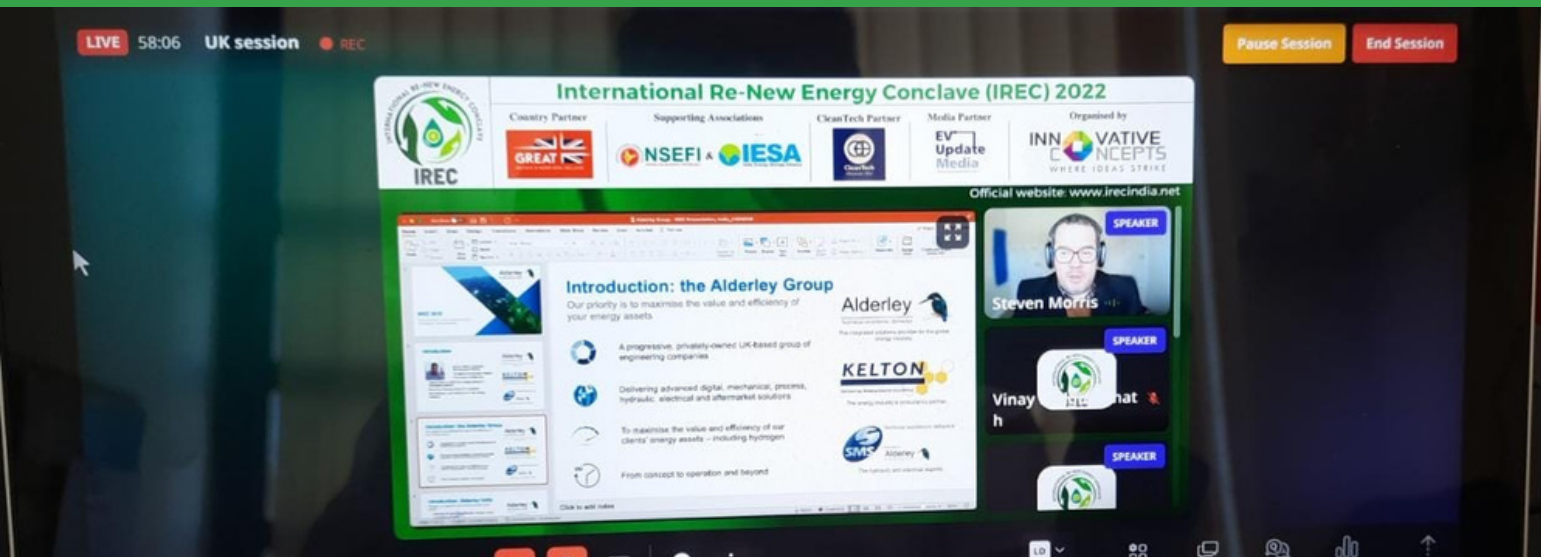
In an evolving and dynamic Hydrogen industry a clear understanding of risks is key to allow the industry to thrive and play its part in global decarbonisation.

This presentation draws on global experience across the regulatory and assurance sector to give a snapshot of the risks associated with supply chain expansion, hydrogen process safety, emerging regulatory landscape and plant design.

Offshore wind has the potential to meet the requirement of electricity of the whole world. Currently UK has the largest installation of offshore wind, but as per IRENA's report, Asia is going to be the largest market with highest installation of 650GW by 2050 followed by Europe with installation of 215GW. In Asia, Mainland China, Taiwan, South Korea, Vietnam, India, Sri Lanka and Philippines will have the significant offshore wind installation.

Offshore wind has the unique advantage of average higher velocity than that of onshore wind and hence can have more electricity production and it doesn't have challenges of land acquisition. Also, project in sizes of thousands of MW can be built at a single location that allows for the scaling up. India has had the first offshore wind comprehensive study 'FOWIND' (2013-2018) that mainly looked at the resources of Gujarat and Tamil Nadu and provided roadmap for offshore wind development. India has the coastline of more than 7,500km and around 70GW of offshore wind potential exists off the coast of Gujarat and Tamil Nadu. The well-established supply chain and workforce for onshore wind could be upgraded for offshore wind and India could be the hub of manufacturing in Asia. In the recent auction in Europe, the tariff of offshore wind has achieved lower than 4 INR. India could also achieve such lower tariff with well-established local ecosystem and customized design of wind turbine model with more than 10 MW size and well suited for Indian conditions of average low wind velocity and typhoon conditions. However, to realize this, long term planning, realistic goal and sustained support by the Government is needed.

GreenEnco Ltd is an innovative solution provider in solar asset optimisation, technical due diligence and design optimisation in solar and energy storage projects. GreenEnco has performed over 4 GW of services in the last 4 years in 12 countries. GreenEnco team is based in the UK and India.



Existing solar asset owners are increasingly facing generation loss of their assets. A lack of a data-driven decision-making process results in a loss of revenue for them. Reactive O&M response keeping them behind the curve.

GreenEnco has developed a systematic optimisation approach (APM - Asset Performance Management) for the operational solar assets, which has been successfully demonstrated in ~330MW of solar assets in Asia and Europe with an average 8% generation gain. APM strategy is driven by a unique combination of "High Tech" (i.e. artificial intelligence (AI) & machine learning (ML) algorithms developed in-house) and "High Touch" (solar domain intelligence), which helps asset owners to unfold the true value of their assets.

GreenEnco's APM can increase the energy efficiency of an existing solar system, which ultimately increases the contribution of green electricity to the overall energy mix, resulting in additional decarbonisation and helping gain investors' confidence.

GreenEnco has developed a solar-powered EV charging infrastructure. GreenEnco's Zero-Emission EV charging solutions has aimed to support commercial and industrial customers, universities and other organizations to support their Net-Zero transition.

Conclusion



From the discussion made above it becomes evidently clear that India is certainly an emerging economy with world second largest population bulge. To stay competitive in the international community,

India needs a giant leap forward. For this purpose, the country is investing billions of dollars on the renewable energy resources. Recycling is needed to be done to ensure optimal utilization of resources. In its initiative towards sustainability the country is investing in electrical vehicles and is switching towards production of lithium batteries that will help the country get rid of its dependence of other sources of energy.

Electrical vehicles will promote sustainability in the economy because it will help in efficient utilization of energy sources. Not only this but also, the country is investing on blue and green hydrogen that seems a great leap forward for meeting the energy needs of the country.

In addition to these efforts are needed by policy makers to ensure that the aims are met which are backed up with a culture which fosters combined efforts of all stakeholders in making India a more progressive economy. Investments and the right culture of collaboration will help to yield fruitful results.

IREC 2022 - Conference Focus



- Robust Policy & its implementation
- Market & Future Growth
- Hydrogen Economy
- Solar & Wind energy
- Electric mobility & EV battery
- Energy Storage challenges & solutions
- Carbon Capture Utilization & Storage
- Digital transformation
- Technology developments
- Infrastructure
- Financial incentives & funding
- Smart Energy management
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LIVE 52:34 Panel 1:How will Hydrogen value chain become a reality in India-Decarboni...

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SPEAKER



Dr. Satyam Priyadarshy

SPEAKER



Sanjib Das Sharma

HOST



Mohit Kapoor

SPEAKER



Bratin Roy

SPEAKER



Dr. MAYILVELNATHAN V

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Thanks Dr. Raj ..

Dr. Raj Tewari
Ex-Chief Data Scientist, Petronas 17 mins ago

CCS is well established and there are number of successful projects

safe storage sites can be identified with proper study incorporating Geomechanics and Geochemistry etc

many successful CO2 based EOR working worldwide

7 mins ago

I think use of h2 has started at decentralised way in Australis. few societies are using it for power.

Mohit Kapoor
Founder & Director, Innovative ... 5 mins ago

Pls raise your hand to ask your question Dr. Raj sir

What would you like to share?

GANNET ENGINEERING PVT LTD

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Localization in Electronics product development and its impact on the Clean Energy sector in India

Author: Madhusudhan Chellappa, Managing Director, Gannet Engineering Pvt Ltd.

In the near term, Electrification has a momentum in India and globally that is seemingly unstoppable but it has a few blind spots, such as in heavy duty sector. At the same time Hydrogen doesn't look likely to offer great alternatives to batteries for the low horse power on road applications. This is primarily due to efficiency losses in transmission and production.

Consensus is that hydrogen mobility is likely to help heavy duty, marine, locomotive and power gen sectors a lot more than the high volume on-road segments. Hydrogen could offer abatement of up to one-third of global emissions from fossil fuels but there is also an agreement that the cost of "Green Hydrogen" must hit \$1/kg for the technology to make it.



Supply chain is the blind spot

As several IREC speakers pointed out, government policies are currently favorable to Clean Mobility. Policymaking has also caught up even if there is room for improvement – for example, India leads standards creation for BMS and other key components.

However, one barrier to both EV and Hydrogen today is supply chain. This is because product is king, and innovative products that customers are satisfied with are near impossible to make without control over electronics and software supply chains.

Electrification, H2 and every other new technology is likely to suffer roadblocks due to lack of good options for low volume high value components such as Electronic Control units (ECUs), sensors, communication interfaces and the such. These products are the ‘brain’ of a vehicle, and are therefore the difference between in-house development and assembling pre-made kits.

Automotive supply chains today are geared to meet high volume, very low cost production scenarios that make key platforms inaccessible to startups - those that do not have billions of dollars in government and VC funding like Tesla anyway!

Various IREC speakers agreed that incumbents who do have access to traditional supply chains are not the ones most likely to offer in-house innovation. Therefore, for great new products in this sector, new options need to be developed in electronics supply chain.

India’s semiconductor policy offers a ray of light but it is likely to take a few years before we see startup-friendly options emerging.

Therefore technology funding, government policies and product innovation are well advised to focus on innovative ways to aggregate and supply electronic components in particular at low volumes. This is most likely to unlock product innovation and enable future green mobility products to compete with traditional ICE.

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