

**Azadi ka Amrit Mahotsav**  
to commemorate 75 years of progressive Independent India

***Report of the***

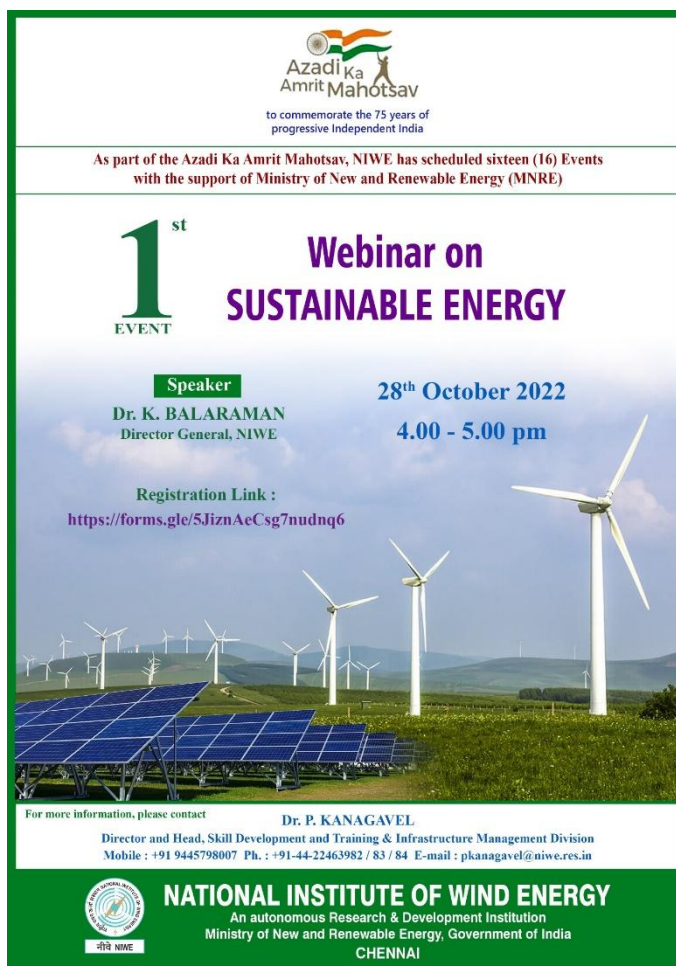
**First Event**

**“Webinar on Sustainable Energy”**

NIWE with the support of MNRE has scheduled sixteen events to commemorate 75 years of progressive Independent India (Azadi ka Amrit Mahotsav).

The first event, “Webinar on Sustainable Energy” was held on 28<sup>th</sup> October 2022 and conducted successfully.

The announcement about the event carrying the instructions was hosted in NIWE website and circulated through Social Media pages along with the below given Flyer.



**Azadi Ka Amrit Mahotsav**  
to commemorate the 75 years of progressive Independent India

As part of the Azadi Ka Amrit Mahotsav, NIWE has scheduled sixteen (16) Events with the support of Ministry of New and Renewable Energy (MNRE)

**1<sup>st</sup>**  
EVENT

**Webinar on SUSTAINABLE ENERGY**

**Speaker**  
Dr. K. BALARAMAN  
Director General, NIWE

**28<sup>th</sup> October 2022**  
**4.00 - 5.00 pm**

Registration Link :  
<https://forms.gle/5JiznAcCsg7nudnq6>

For more information, please contact  
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**NATIONAL INSTITUTE OF WIND ENERGY**  
An autonomous Research & Development Institution  
Ministry of New and Renewable Energy, Government of India  
CHENNAI

The event was conducted online, enabling large number of participants to take part in the Webinar.

### **REGISTRATION**

Against the announcement, 245 registrations were received and totally 44 participants have attended the event.

### **PROGRAMME SCHEDULE**

<b>Date</b>	<b>Time</b>	<b>Theme and Speaker</b>
<b>28<sup>th</sup> October 2022</b>	<b>16.00 - 17.00 pm</b>	<b>Sustainable Energy</b> by Dr. K. Balaraman, DG, NIWE

The webinar was scheduled as an online event. The speaker gave a detailed presentation on different aspects of sustainable energy. There was a Q&A session, which was open for the participants to chat with the speaker and the speaker had clarified all the doubts. The answers were very useful to the participants to have a feel about the sector. All the participants were satisfied with the knowledge transferred through the webinar and expressed happiness.

### **Gallery of the 1<sup>st</sup> Event**

1st Event AKAM (2022-23) - Webinar on Sustainable Energy - 28-10-2022 - 4.00 - 5.00 pm

Need help?

**Welcome to**

**1st Event – Webinar on Sustainable Energy**

As part of the “Azadi Ka Amrit Mahotsav” to commemorate the 75 years of progressive Independent India  
**28th October 2022**

Presented by  
**Dr. K. Balaraman**  
 Director General  
 National Institute of Wind Energy

Organized by  
 Skill Development and Training & Infrastructure Management (SDT & IM) Division  
**NATIONAL INSTITUTE OF WIND ENERGY**  
 Chennai

32°C Light rain 15:42 28-10-2022

1st Event AKAM (2022-23) - Webinar on Sustainable Energy - 28-10-2022 - 4.00 - 5.00 pm

**Sustainable Energy**

The stages of the energy trajectory

- primary energy which is a resource extracted from ground, sun, air, water bodies, which can be converted into
- secondary energy, as energy carriers to be transported or to be saved in different storage units, until finally distributed to consumers as
- energy services to cover all societal energy requirements.

An energy system which compares the amount of energy consumed in the production process and the amount of energy suitable for societal use.

- This assessment of calculating how much useful energy is lost and embodied in a product:
- the emission and waste amount, caused by energy depreciation, allocated either to producers or to consumers which not only caters the present needs but also for long term sustenance

Green energy, clean energy, Renewable and Sustainable are often used interchangeably but there are difference between them

Energy surplus is an importance measure for Sustainable Energy

31°C Light rain 16:18 28-10-2022

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Sustainable Energy1 - Microsoft PowerPoint

### EROI Trend for Renewables

**Water Thickness (mm) and Silicon Usage (g/Wp) from 1990 to 2019**

Year	Water Thickness (mm)	Silicon Usage (g/Wp)
1990	300	10
2004	250	12
2008	200	14
2010	180	15
2012	170	16
2013	160	17
2014	150	18
2015	140	19
2016	130	20
2017	120	21
2018	110	22
2019	100	23

**EROI Trends from 1900 to 2000**

Energy Source	1900 EROI	2000 EROI
oil	~10	~50
coal	~10	~40
hydro	~10	~15
natural gas	~10	~30
wind	~10	~15
nuclear	~10	~15
EROI <sub>total</sub>	~10	~15
EROI <sub>total</sub> <sup>real</sup>	~10	~15
EROI <sub>total</sub> <sup>PPP</sup>	~10	~15
EROI <sub>total</sub> <sup>in</sup>	~10	~15

Source: PHOTOVOLTAIC'S REPORT, Prepared by Fraunhofer Institute for Solar Energy Systems, ISE with support of PSE GmbH

Source: The Changing Meaning of Energy Return on Investment and the Implications for the Prospects of Post-fossil Civilization Eco-White and Get-Jan Kraemer?

Slide 22 of 28 | Office Theme | English (United States)

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Sustainable Energy1 - Microsoft PowerPoint

### Research Dimension

EROI has a concept is being applied to various sectors including agriculture, human physiology etc.,

- Different types of food require different amounts of energy to process
  - Fats have a thermic effect of about 3 percent. If you consume 100 fat calories, only 3 calories will be spent digesting the fat.
  - Fibrous vegetables and fruit have a thermic effect of about 20 percent,
  - Proteins have a thermic effect of about 30 percent. If you eat 100 protein calories, you'll burn off 30 calories digesting the protein.
- The EROI applied to food crops elucidates the relation between input to crops and the crops response
  - EROI of rice is higher than wheat
  - EROI of rice ranges from 3.1 to 4.9 whereas wheat varies from 2.7 to 3.4

Live event Q&A

Featured My questions Most recent

**Moderator 3:55 PM**  
Dear Participants NIWE Welcomes you to the 1st Event under Azadi ka Amrit Mahotsav to commemorate the 75 years of progressive Independent India of "Webinar on Sustainable Energy" presented by Dr. K. Balaraman, Director General, National Institute of Wind Energy

**Moderator 4:14 PM**  
Dear Attendees kindly post your queries and doubts in the comment box

Ask a question

Slide 26 of 28 | Office Theme | English (United States)

LIVE 55:27 / 57:33

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