

# TALE 2024 Conference Workshop – 5

## Design and Smartly Deploy Sustainability & Decarbonization Features in Science, Engineering, and Technology Education

Date & Time: Dec 12<sup>th</sup> 2024, 9 am to 12 noon

### Workshop Facilitators:

1. **Dr. Deepak L. Waikar** Senior Lecturer at SP in Singapore and Hon. Vice President of International Energy Foundation
2. **Mr. Bhaskaran S**, Managing Director, Invosystems Solutions Pte Ltd, Singapore
3. **CA Vincent Lim**, Managing partner of EcoSustainability Group, and Associate Faculty of Singapore Institute of Technology

### Workshop Overview

Sustainability and decarbonization have become critical priorities for educators, industries, and governments alike. This highly interactive workshop at TALE 2024 focuses on equipping educators with the knowledge and skills needed to **design, redesign, and restructure curricula** to incorporate sustainability and decarbonization features in science, engineering, and technology education.

Through a series of practical activities, participants will explore current trends and future directions in sustainability, highlighting the importance of integrating **Sustainable Development Goals (SDGs)** and **Environmental, Social, and Governance (ESG)** mechanisms. Participants will also learn how to effectively deploy their curriculum using digital tools and techniques for maximum impact.

### Part 1: Assessing and Redesigning Curricula for Sustainability and Decarbonization

The first part of the workshop centers around understanding the current scenarios in sustainability education. Participants will be guided through a systematic process to assess their existing curricula and identify opportunities for incorporating sustainability and decarbonization concepts. By integrating SDGs and ESG principles, educators can enhance their teaching practices while addressing the pressing global challenge of climate change.

### Part 2: Smart Deployment Using Digital Tools

In the second part of the workshop, participants will discover how to smartly deploy their newly designed sustainability-focused curricula using a variety of digital tools and techniques. A key highlight is the demonstration of an **award-winning mobile app** that allows users to track their consumption-related carbon footprint. This app, combined with

digital learning strategies, will help educators engage students in reducing their carbon footprint and taking proactive steps toward sustainability.

### **Part 3: Engaging Stakeholders and Addressing Challenges**

Effective curriculum implementation requires the involvement of all stakeholders—students, faculty, administration, staff, parents, and the wider community. In this part of the workshop, participants will learn how to engage these stakeholders in identifying decarbonization opportunities and leveraging digital tools for sustainability. Key challenges in curriculum implementation will also be addressed, with discussions around strategies to overcome these challenges.

#### **Who Should Attend?**

This workshop is ideal for educators, curriculum developers, sustainability professionals, and institutional leaders who are passionate about integrating sustainability and decarbonization into their teaching. Whether you are new to sustainability education or already working in this space, this workshop will provide you with practical strategies to transform your curriculum and make a lasting impact.

#### **What Will Participants Take Home?**

Participants will leave with actionable insights on designing and deploying sustainability-focused curricula, practical knowledge of using digital tools for tracking and reducing carbon footprints, and strategies to engage key stakeholders. You will gain access to templates and frameworks that can be adapted for use in your institution, as well as experience using the award-winning mobile app for carbon footprint tracking.

#### **What Do Participants Need?**

Participants should bring their own smart mobile phones (**Android 9.0+ or iOS iOS 11.0+ with Wi-Fi or mobile internet access**) to fully engage with the hands-on activities. An interest in sustainability, decarbonization, and curriculum development is essential, but no previous experience is required.

#### **Don't Miss This Opportunity!**

Join us at TALE 2024 to take part in this transformative workshop and lead the way in integrating sustainability and decarbonization into science, engineering, and technology education. Learn how to design future-focused curricula that not only educate but inspire students to take meaningful action on climate change. Be part of the global movement for a sustainable future!

## Biography of Facilitators



**Dr. Deepak L. Waikar** ([LinkedIn Profile](#)) Chair, IEEE Education Society, Singapore Chapter, Member of the Advisory Committee of Indo-Universal Centre for Engineering Education (IUCEE) Foundation, & Ex-Managing Partner of EduEnergy Singapore), has been involved in education, training, research, and management fields for more than three decades. He has been associated with the premier institutions, polytechnics, colleges, and academies in India and Singapore as well as with British and Australian Universities offering courses in Singapore. He has authored/co-authored books, book chapters, research articles, and policy papers and delivered hundreds of invited keynotes, plenary, panel session presentations on power, energy, management, sustainability, leadership, and education-related topics. He has served on various committees in **professional** bodies. He is a recipient of the IEEE-PES **Outstanding Power Engineers' Award** and SP **Green Buddy Award**. Dr. Waikar has been associated with **Singapore Certified Energy Manager's** programme for more than a decade. He obtained **Ph.D.** from the National University of **Singapore**, **M.S.** from the University of Saskatchewan, **Canada**, **M.Tech.** from the **Banaras Hindu University, India**, and **PD Certificate in University Teaching** from the University of **Newcastle, Australia**. He obtained PG-DBM from **Nagpur University** & B.E. from the **Government Engineering College in India**, respectively.



**Mr. Bhaskaran S**, Managing Director, Invosystems Solutions Pte Ltd, Singapore, is a First-Class Electronics and Communication Engineer with 36 years of experience in Information Technology, having worked with major MNCs in the Asia-Pacific region such as Digital Equipment, Hewlett-Packard, Dectra-Malaysia, Samtech Infonet, and Mphasis. He is a member of **APAC Sustainability Advisory Council** (24 members) headed by Hewlett-Packard and other global MNC companies. His passion is to create awareness, empower people with mobile apps for **sustainability** and has developed the **award-winning PlanetSustain Mobile App** to enable everyone to track and reduce their carbon footprint, including businesses, SMEs, educational institutions, employees, students, and individuals. With **extensive experience** in sales, marketing, business development, and delivery, he has travelled extensively throughout the APAC region. His comprehensive **skill set is specifically honed** for the oil & gas, power sector, telecommunications, banking, manufacturing, government, and healthcare sectors. He is committed to **innovation** and a **sustainable future**, empowering individuals and organizations.



**CA Vincent Lim** is the managing partner of EcoSustainability Group, and Associate Faculty of Singapore Institute of Technology teaching carbon accounting & sustainability reporting. He was previously the Apac CFO in Datalogic S.p.A. (Borsa Italiana: DAL.MI), Deputy Group CFO in Hi-P International Limited (erstwhile SGX: H17), and Director of Finance for Asia in Motorola Solutions (NYSE: MSI). Vincent is a member of the ISCA CFO committee, former ISCA Exco, Treasurer and Council member, former ACCA SME Transformation Committee Chairman and Singapore Network Panel member. Vincent has a PhD in General Management from SMU, FCCA, FCA Singapore, ACA and various sustainability-related qualifications, including GHG Accounting Lead Verifier (ISO14064).