

EEDA



**EXPLORE ENERGY
DIGITAL ACADEMY**



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A WORD FROM**THE EDITOR**

As we approach the end of the year, it's moment to reflect on the incredible milestones we've achieved and the progress we've made as part of EEDA community.

This year has been one of growth, collaboration, and resilience. From the successful launch of new initiatives to the remarkable contributions from our team members, we have taken significant steps toward our shared goals in higher education development.

We have seen positive changes in the way our institutions collaborate across borders, working together to address global challenges and contribute to the modernization of education, particularly in fields such as sustainable energy, circular economy practices, and digital transformation.

Our continued commitment to advancing the Erasmus+ projects has been at the heart of these achievements. These projects not only promote academic excellence but also bring innovation and international cooperation.

At the core of these efforts are the dedicated Erasmus+ project coordinators, whose leadership and vision ensure that our programs remain aligned with our goals and objectives. Their role is integral to the success of each project, as they oversee the day-to-day management, facilitate collaboration between institutions, and ensure that all participants stay on track toward achieving the intended outcomes. The impact of their work cannot be overstated—they are the driving force behind the realization of our shared educational goals, helping to make our ambitious projects a reality.

In this issue, we are proud to feature the coordinators who have played such an integral role in the success of our initiatives. Their efforts serve as a testament to the power of effective collaboration and leadership in advancing education across borders.

As we celebrate our accomplishments, we remain focused on the goals ahead, driven by the collective spirit of innovation and collaboration that defines the EEDA community. This shared commitment to excellence inspires us to continue pushing the boundaries of what is possible in higher education, as we work together to create lasting, positive change.

We look forward to even greater achievements in the year to come, wishing everyone a prosperous and successful 2025 ahead.

EUSL-Energy Project Coordinator - Ruchira Abeyweera

A Trailblazer in Sustainable Energy Innovation



Eng. Ruchira Abeyweera, a distinguished expert in sustainable energy engineering, has been at the forefront of transformative initiatives driving energy innovation and capacity building in Sri Lanka.

As the Project Manager of the Europe-Sri Lanka Capacity Building in Energy Circular Economy (EUSL-Energy) Project—the first Erasmus+ CBHE initiative under the EXPLORE Energy Digital Academy (EEDA), his visionary leadership has united academia, industry, and policy to advance sustainable energy solutions.

EUSL-Energy Project (2020–2023)

This pioneering collaboration between leading Sri Lankan universities and European partners, including KTH Royal Institute of Technology, CentraleSupélec, and the University of Twente, focused on energy sustainability and circular economy practices. Key achievements include:

- Establishing the MSc in Energy for Circular Economy (MECE), an online program integrating cutting-edge energy technologies with circular economy principles, jointly conducted by four Sri Lankan universities.
- Developing innovative frameworks and advanced training modules to address local and global energy challenges.

A Legacy of Impactful Leadership

Ruchira's career reflects a commitment to education and international collaboration. Highlights include:

- Coordinating the SEE World MSc Programme (2008–2016) and SELECT Sri Lanka Master Programme (2016–2019), enabling over 180 Sri Lankan students to earn international degrees and take leadership roles in the energy sector.
- Leading the Master of Energy Management (MEM) Programme (2019–2022) in partnership with KTH and the Sri Lanka Sustainable Energy Authority, graduating 160 professionals.
- Currently managing the MSc in Energy for Circular Economy Programme, with courses like Circular Economy towards Energy and Energy Management and Auditing in Industry.

Research and Thought Leadership

Ruchira's prolific contributions to international journals and conferences include advancements in biomass gasification, energy system modeling, and circular energy innovations. His work at events like the IEEE EDUCON Conference highlights his dedication to global knowledge exchange.

Through his groundbreaking efforts, Ruchira Abeyweera exemplifies the transformative power of innovation and collaboration, setting a benchmark for sustainable energy development in Sri Lanka and beyond.

EUBBC-Digital Project Coordinator: Marcelo Leal Alves

Pioneering Digital Education amidst Collaborative Innovation



Prof. Marcelo Augusto Leal Alves, a forward-thinking leader in engineering education, has championed transformative initiatives in digital learning and global academic partnerships.

His journey with the EUBBC-Digital Project showcases a steadfast commitment to innovation, inclusivity, and collaboration in higher education.

History and Background

I first met Prof. Fransson back in 2014 at the T.I.M.E. network general assembly and one of the many topics of discussion during that meeting (and in several subsequent ones) was his idea for the future of engineering education as well as the idea of a repository of coursework material that could be shared among several educators to format courses at different parts of the world in a collaborative way. Impressive ideas and concepts but, like most people in higher education, I was then maybe too stubborn in doing "things as we always did" to fully grasp the potential of his ideal back then.

EUBBC-Digital: A Landmark Erasmus+ Initiative

Fast forward to 2020/2021, with lockdowns challenging education globally, I received a message from Prof. Fransson asking if the University of São Paulo would coordinate an Erasmus+ Capacity Building project in digital education.

Surprised that a non-European institution could lead such a project, I accepted the challenge. With Prof. Fransson's guidance, our proposal was accepted by EACEA, and in 2021, EUBBC-Digital began. Partnering universities from Brazil, Bolivia, and Cuba with those in Sweden, Spain, the Netherlands, Latvia, Belgium, and Romania was initially chaotic and daunting. Managing a nearly €1 million budget and aligning partners were major early challenges.

After 48 months, the sense of accomplishment is immense. Partners overcame hurdles to equip laboratories and launch remote-access courses. Operating real, not simulated, engineering labs remotely was groundbreaking. Course material was collaboratively developed, peer-reviewed—a first for many.

While the project brought frustrations, it also taught me new ways to organize higher education, which I hope to replicate and share. These 48 months have been a transformative experience, paving new roads for everyone involved. I am deeply thankful to have been part of this journey.

Through EUBBC-Digital, Prof. Leal has laid the groundwork for a future where digital education transcends boundaries, promoting excellence and accessibility in engineering education worldwide.

Alex Villazón: EU-BEGP Project Coordinator

Digital Transformation and Energy Innovation in Latin America



Alex Villazón is Full Professor, Dean of Research in Engineering and Architecture and Director of the CINTI Research Center at Universidad Privada Boliviana (UPB) in Bolivia. He holds a MSc and a PhD in Computer Science from the University of Geneva (Switzerland) and worked as postdoc fellow in the University of Innsbruck (Austria) and the University of Lugano (Switzerland) before joining Universidad Privada Boliviana (UPB) in 2010.

He is one of the most cited bolivian researchers, has more than 100 scientific publications, several national and international awards, and a patent.

History and Background.

Back in 2020, we were invited by Prof. Torsten Fransson to join the first CBHE Project (EUBBC-Digital) for developing learning material within EEDA, alongside partners from Brazil, Cuba, Bolivia, and several EU countries. Accepted in 2021, the project ran successfully until 2024 and marked the first funded engineering project at UPB. Although Prof. Villazón had extensive experience with European projects during his research in Europe before returning to Bolivia in 2010, this was the first large EU-funded project implemented directly in Bolivia.

After the first year of EUBBC-Digital, a new challenge emerged: preparing a CBHE Erasmus+ Project as the coordinator. The challenge was met, and a new consortium was formed for the EU-BEGP Project, involving partners from Bolivia, Ecuador, Guatemala, and Peru in Latin America, as well as Spain and France in Europe, with a budget of 800,000 EUR.

The EU-BEGP Project:

After months of preparation with Prof. Fransson's guidance, the project was submitted and accepted in 2022, marking a milestone as only the second Erasmus+ Project coordinated by a Bolivian university. For UPB, it was a challenge to navigate the administrative and financial aspects of such an initiative.

As part of the EEDA Family, EU-BEGP collaborated with CBHE sister projects, organizing training sessions, workshops, and sharing best practices. Early achievements include 3 IEEE EDUNINE publications, 7 workshops on flipped-classroom methodology, remote labs, and QIP, benefiting over 120 educators.

The project also hosted 17 Round Tables in four countries with 42 energy-sector stakeholders and delivered keynotes on education modernization, active learning, and digital transformation.

By 2025, we expect to launch the first courses and programs, fully functional 11 new remote laboratories, and make them available to all partners and the EEDA family.

EU-ZW Project Coordinator - Samson Mhlanga

Bridging Energy Education and Innovation



Prof. Samson Mhlanga, Associate Professor and Researcher at the National University of Science and Technology (NUST), Zimbabwe, leads groundbreaking efforts in energy education and international collaboration. His extensive academic and professional background underscores his commitment to advancing the energy sector through innovative learning methods and sustainable practices.

EU-ZW Project: Modernizing Energy Education

As the Coordinator of the Erasmus+ CBHE project “EU-ZW – Digital Challenge-Driven Energy Learning Collaboration Between EU and Zimbabwe” (2023–2026), Prof. Mhlanga spearheads efforts to revolutionize energy education in Zimbabwe. Partnering with universities in Zimbabwe, Sweden, and Spain, as well as industry stakeholders, the project focuses on:

- Challenge-Driven Learning: Equipping students to tackle real-world energy challenges.
- Remote Laboratories: Providing hands-on learning through digital tools.
- Flipped Classroom Models: Enhancing student engagement and participation.

Pioneering Solar Thermal Projects

Prof. Mhlanga is also the Country Coordinator for the SOLTRAIN+ Project, funded by the Austrian Development Agency (2017–2026). This initiative promotes solar thermal heating and cooling solutions, reflecting his dedication to sustainable energy technologies.

Academic and Professional Excellence

A researcher and lecturer at NUST since 1997, Prof. Mhlanga’s expertise includes:

- Teaching and Research: Courses such as Manufacturing Systems and Modelling and Simulation for undergraduate and postgraduate students.
- Publications and Editorial Work: Over 80 scientific articles, a book chapter, and co-editing three conference proceedings.
- Program Evaluation: Serving as an expert evaluator for engineering programs with the Zimbabwe Council of Higher Education (ZIMCHE).

Certifications and Affiliations

Prof. Mhlanga holds an MSc in Advanced Manufacturing Systems and a BEng in Industrial Engineering. He is a Certified Energy Auditor (CEA), a Fellow of the Zimbabwe Institution of Engineers (ZIE), and a member of the Association of Energy Engineers (AEE). He also participates in global initiatives like IEA Task 65 Heating and Cooling and IEA Task 69 Solar Hot Water (2023).

Through his leadership in projects like EU-ZW and SOLTRAIN+, Prof. Samson Mhlanga exemplifies the transformative power of education and international cooperation in shaping a sustainable energy future.

Cristina Efremov - Leading the EU-AGM Project



Cristina Efremov, an academic and researcher, has taken on the role of Coordinator for the Erasmus+ CBHE project “EU-AGM – Joint Societal Challenge-driven Circular Economy Energy Education between Azerbaijan, Georgia, Greece, Moldova, and Romania” as of December 1st.

This ambitious project aims to modernize energy sector courses and programs by emphasizing circular economy principles and energy sustainability.

Driving Innovation in Energy Education the EU-AGM project focuses on:

- Collaborative creation and updating of Master’s programs and courses.
- Establishing eight remote labs to provide real experimental experiences for students in Azerbaijan, Georgia, and Moldova, supported by EU partners in Romania and Greece.

Academic and Professional Excellence

Dr. Efremov holds a Ph.D. in Engineering Sciences and teaches at three faculties in the Technical University of Moldova (Republic of Moldova) as well as in Dong Nai Technology University (Vietnam).

She also serves as Chairperson of two Technical Committees for Technical Standardization in Construction under the Ministry of Infrastructure and Regional Development, Republic of Moldova. As an expert evaluator for the NAQAER, Dr. Efremov contributes to ensure high standards in professional training programs. Additionally, she is a member of the Romanian National Committee Association – CIGRÉ.

Contributions to Energy and Sustainability

Dr. Efremov’s teaching portfolio includes courses such as Energy Policies and the Energy Market, Energy Efficiency and Renewable Energy Sources, Circular Economy and Energy Storage Systems and Electric Vehicles

She has authored 28 national standards and regulations in Moldova related to energy efficiency, heat supply, and environmental sustainability. Her scholarly contributions include:

- Publications: Over 45 scientific articles, including works in prestigious ISI-Q1 journals with high impact factors (e.g., 8.1, 6.9, 6.4).
- Textbooks: Three textbooks published at national and international levels.
- Patent: An international patent registered in the UK.

Shaping the Future of Energy Education

Through her leadership of the EU-AGM project and her extensive academic and professional expertise, Cristina Efremov is set to drive transformative change in energy education, fostering international collaboration and advancing sustainable practices in the energy sector.

Driving Innovation in Renewable Energy: Advancing Circular Economy Solutions for a Sustainable Future



Shenal Jayasundara
Project Manager
/Civil Engineer
WKV Group of Companies
Accredited On-Grid
Renewable Energy
Consultant,
Sri Lanka Sustainable
Energy Authority
Reg No: 524639547,
MSc in Energy for Circular
Economy - 24/25 Batch

"I joined the MSc in Energy for Circular Economy program to deepen my understanding of sustainable energy practices and enhance my contributions to the renewable energy sector in Sri Lanka. This course has equipped me with valuable insights into renewable energy, circular economy principles, resource efficiency, and waste reduction, which I apply in managing mini-hydropower plants and overseeing solar power project development."

Additionally, I aim to broaden my knowledge to include other renewable sources such as hydrogen fuel cells, wind, geothermal, and ocean energy. Becoming an accredited energy consultant with the Sri Lanka Sustainable Energy Authority has empowered me to lead new project developments effectively, positioning me to drive positive change in Sri Lanka's energy landscape."

This testimonial reflects the transformative impact of the MSc in Energy for Circular Economy program, showcasing how education and collaboration can drive innovation and sustainability in the energy sector.

Empowering Indonesian Professionals in Renewable Energy

Randy reflected on the highlights of the program, emphasizing its supportive and collaborative environment:

"My name is Randy Arifia and I'm an Indonesian, I was very pleased and grateful to be able to join MSc in Energy for Circular Economy program."

This program gave me a lot of new insights in the area of renewable energy, there were many positive points that I got during my time in this program, such as a flexible learning environment, lecturers who are highly knowledgeable and very comfortable to discuss also because my classmates are very friendly, I really hope that in the future there will be many Indonesian students who can join this program."

Randy's testimonial underscores the global appeal and impact of the MSc in Energy for Circular Economy program, creating an inclusive and dynamic learning experience for students worldwide.



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(MSc in Energy for
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Batch)

Transforming the Future at UMSS: The Revolution of Renewable Energy Through Energy Systems Modeling



Ing. Virginia Samca Montaña
Master student –
Energy Systems
Modelling Program,
Universidad Mayor
de San Simón,
Bolivia

The Master in Energy Systems Modelling at Universidad Mayor de San Simón in Bolivia, is an exceptional opportunity for those passionate about the renewable energy revolution. This program offers personalized and flexible learning, adapting to the pace of each student through the use of EEDA material. The Master not only focuses on theory, but also addresses the practical application of sustainable energy solutions, aligning with Sustainable Development Goals (SDG) 7.

This program emphasizes the practical application of renewable energy systems, promoting a circular economy and sustainability. Training in energy systems modelling enables us to address contemporary challenges in the energy sector while positioning us as innovative leaders in creating sustainable solutions for a cleaner and more equitable future, while balancing economic, social, and environmental priorities.

By training professionals to address modern energy challenges, it prepares leaders to create innovative solutions for a cleaner and more equitable future.

How, and when, are the courses offered in this EEDA course platform (powered by OpenEdX) available?

The courses available here are in two shapes:

The first is continuously open in a self-paced mode and can be accessed “anytime, anywhere” (as long as there is an internet connection). At the end of such a course the individual learner can, if they have successfully answered all the requested assessments, print out an “EEDA Certificate of Achievement for Successful completion of the Automatically Graded assignments”.

This indicates clearly issues like title, level of course (per European and National Qualification Frameworks), ELH and the “EEDA Stackable Master Credit Transfer system”.

The second is in an “instructor-led” mode. These are usually with added instructor-led workshops, instructor-corrected assignments, exams etc. For obvious reasons these are then limited to certain time-frames, and may also be subject to a cost. A combined certificate is then established from EEDA and the organization offering the instructor-led parts.

For more information, please visit: <https://learning.eeda.academy>



MSc in Energy for Circular Economy (MECE)

Applications open January 02, 2025



The MSc in Energy for Circular Economy (MECE) program is an innovative online master's degree designed to address global challenges in sustainable energy and circular economy practices. The program integrates advanced energy technologies with principles of resource efficiency and waste reduction.

Key Details:

- Intake Start Date: January 2, 2025 (3rd intake).
- Collaborating Institutions: Conducted by four Sri Lankan universities—The Open University of Sri Lanka, University of Moratuwa, University of Peradeniya, and University of Ruhuna—with contributions from European universities, including Royal Institute of Technology-KTH (Sweden), CentraleSupélec (France), and the University of Twente (Netherlands).
- Accreditation: Recognized under the Sri Lanka Qualifications Framework (SLQF Level 10), equivalent to 60 SLQF Credits/120 ECTS Credits, and approved by the University Grants Commission (UGC).

Participants can specialize in Renewable Energy Systems, Energy for Industry, Energy Technology and Management, or Power Generation and Supply.

This two-year online program, supported by Erasmus+, offers remote labs, challenge-based learning, and international expertise. With a flexible structure and global teaching panel, it is ideal for professionals and graduates in engineering, science, and environmental fields committed to sustainability.

This program represents a significant step forward in developing global expertise in sustainable energy systems and circular economy practices. Through collaboration, hands-on learning, and exposure to real-world challenges, participants are empowered to implement transformative strategies that address both environmental and economic sustainability on a global scale.

Impact and Participation:

Since its inception, the MECE program has enrolled 121 students in its first intake and 157 in its second, emphasizing practical solutions for energy sustainability. It provides professionals in engineering, science, and environmental fields with the tools to address global energy challenges.

Application period opens on January 2, 2025. Please visit www.eusl.edu.lk, email at mece@eusl.edu.lk, or contact via Mobile/WhatsApp at +94 77 782 1752, for more information.

Reunion Of Winning CBHE Projects In Republic Of Moldova: Strengthening Partnerships And Presenting New Initiatives



On December 26, 2024, a meeting dedicated to capacity building projects in higher education (CBHE) recommended for funding under the 2024 selection took place at the Erasmus National Office in Moldova. The Ministry of Education and Research of the Republic of Moldova and the EU-AGM project were among the invitees.

The EU-AGM Project Coordinator (Cristina Efremov) presented the ambition of the EU-AGM project focused on collaborative creation of learning material to create/update Master programs and courses, implementation of 8 remote labs enabling real experimental experience in the third countries as Azerbaijan, Georgia, Moldova with the help of EU partners – Romania and Greece. She also, made a presentation of EEDA concept and invited the other partners to use the EEDA instead of creating their own distribution platforms.

The discussions brought to light new ideas and strengthened collaboration between local teams, shaping a common vision for the successful implementation of Erasmus+ initiatives in the fields of education and research.

QIP NEWS

**DISCOVER THE
LATEST UPDATES
FOR ENHANCING
USABILITY AND
EFFICIENCY**

- QR student grading system included in the badge.
- Review comments are continuously automatically saved.
- Networking dashboard for interconnection of persons and educational resources updated.
- Possibility to do "dry self-evaluation" without storing the result as well as sending a personal message to reviewers implemented.
- Review invitation history, and possibilities for sending reminders to reviewers, implemented.

EEDA OpenedX Course: EEDA Good Practices



A new "Train-the Trainers" related to "EEDA Good Practices" has been added to the EEDA OpenedX platform:

This course aims to support educators in their creation of learning resources by presenting good practices linked to the EEDA concept, and by exanimating an existing EEDA learning resource.

The course consists of 2 lessons and a total of 16 hours, holding a societal relevance by equipping EEDA educators to collaboratively develop energy-focused resources.

Please visit: [EEDA Good Practices](#)

First Test With AI QIP

The EEDA QIP system under development leverages the power of Retrieval-Augmented Generation (RAG) and Large Language Models (LLMs) to automate the evaluation of EEDA learning resources, specifically focusing on Module outlines and content. This innovative approach not only reduces manual effort but also ensures consistency and fairness in the evaluation process.

Key Features of the System:

1. Automated Evaluation: The system can quickly analyze Module outlines and content against a comprehensive set of EEDA Quality Improvement Process (QIP) criteria.
2. Standardized Assessment: By implementing consistent evaluation criteria, the system ensures that all learning resources are judged fairly and comprehensively.
3. Detailed Feedback: Unit coordinators receive in-depth analysis and scoring for each evaluation scan, facilitating targeted improvements.

The first tests have proven a good success. The intended refinements has the potential to significantly simplify the manual parts of the EEDA QIP review process.

Stay tuned on this exciting EEDA journey.

Building Bridges in Higher Education

The EEDA supports six Capacity-Building in Higher Education (CBHE) projects aimed to transform education, such as: **EUSL-Energy**, **EUBBC-Digital**, **EU-BEGP**, **EDU-ABCM**, **EU-ZW** and **EU-AGM**.

Together, these projects foster collaboration, innovation, and sustainable progress in education systems worldwide. Stay connected and learn how we're shaping the future of global education!