



**Resources for World Bank- UNEP Webinar Participants**  
***Connecting Sustainable Energy Businesses with Education:***  
***Getting the Workforce You Need***

<b>Resources for Everyone: Business, Educators, Governments</b>	<b>2</b>
Renewables 2020 Global Status Report	2
Renewables in Cities 2019 Global Status Report	2
Policies for Renewable Energies	3
Green Jobs Strategic Frameworks, Analyses, Capacity Building, Policies and Partnerships	3
Green Jobs for Sustainable Development Guidebooks and Resources	3
2021 Sustainable Energy in America Factbook (United States)	3
Clean Energy in the MENA Region: Industry and Workforce Readiness	4
Increasing Organizational Capacity Through Connecting to Higher Education Applied Projects and Research	4
<b>Resources for Businesses</b>	<b>4</b>
Connecting With Potential Employees and Improving College Curricula	4
<b>Resources for Educators</b>	<b>4</b>
<b><i>Green &amp; Sustainable Workforce Development: Higher Education's Role</i></b>	<b>4</b>
Guidance Doc for Education Institutions - DRAFT JUST RELEASED!	4
Renewable Energies Publications, Data and Tools	4
Gender Disparities	4
Self-assessment Framework	5
Practical Guide for Educational Institutions	5
Green Skills	5
<b><i>Sustainability In Core Requirements For All Students</i></b>	<b>5</b>
Environmental literacy and sustainability as core requirements: Success Stories and Models	5
<b><i>Education for Sustainable Development Pedagogy For Quality Learning</i></b>	<b>5</b>
Components of Quality Assignments and Empowering Students	6
Educational Partnerships for Innovation in Communities.	6
Beyond Doom and Gloom: Engaging in Climate Policy Solutions	6
Creating Civil Discourse for a Sustainable Future	6

A Guide for Applied Sustainability Learning Projects	6
<b>Sustainability in Career Advising</b>	<b>7</b>
Green and Sustainability Jobs: Career Resources.	7
Portal for Energy Related Careers and Learning	7
Career Maps for Solar, Wind, BioEnergy, and Climate Control/HVAC	7
<b>Event Speakers, Bios and Resources</b>	<b>7</b>
Employers/Associations Panel	
Presenters' Slides	7
Moderator: Erik Magnus Fernstrom	7
Thomas André	8
Lisa Jacobson	8
Ahmed Samir Elbermbali	9
Olasimbo Sojinrin	9
Educational Discussants	11
Moderator: Dr. Debra Rowe	11
Dr. Fawzia Tarannum	11
Prem Jain	13
Ahmed Benlarabi	14
Jean-Christopher Carteron	14
Dr. Kenneth Walz	15
Cheryl Desha	16
Dr. Hideaki Ohgaki	18
Andreas Blom	18
Opening Remarks: Mari Nishimura	19
Closing Remarks: Paul Noumba Um	20

---

## Resources for Everyone: Business, Educators, Governments

### A. [Renewables 2020 Global Status Report](#)

From REN21, the *Renewables Global Status Report* brings together all the latest information about renewable energy market and industry developments, policy and investment trends. It is probably the world's most comprehensive crowdsourced report on renewables. The 2020 edition has been co-authored by over 350 experts. <https://www.ren21.net/gsr/>.

### B. [Renewables in Cities 2019 Global Status Report](#)

From REN21, the *Renewables in Cities 2019 Global Status Report* is the first in what is to become an annual stock-take of the global transition to renewable energy at the city-level. REN21 is developing this series to build up reliable data on and create a comprehensive picture

of renewable energy developments in cities globally. This makes it possible to better inform decision-makers both in cities and in the wider energy arena.

### C. **Policies for Renewable Energies**

From the International Renewable Energy Agency (IRENA), International Energy Agency (IEA), and Renewable Energy Policy Network for the 21st Century (REN21). [Renewable Energy Policies in a Time of Transition](#) aims to provide policymakers with a comprehensive understanding of the diverse policy options to support the development of renewables across sectors, technologies, country contexts, energy market structures, and policy objectives; illustrates the changing landscape of policies for renewable energy in power, heating and cooling, and transport, but also highlights the importance of system integration and sector coupling, reflecting the expanding opportunities for integration with increasing renewable energy deployment; presents an updated classification of renewable energy policies, jointly formulated by the three institutions, to illustrate the latest policy developments around the world and facilitate harmonised policy tracking; and captures the importance of the broader policy context – one that goes well beyond energy sector policy alone - required to achieve the energy transition in challenges they face.

### D. [Green Jobs Strategic Frameworks, Analyses, Capacity Building, Policies and Partnerships](#)

From the International Labour Organization (ILO). The only tripartite U.N. agency, since 1919, the International Labour Organization brings together governments, employers and workers of [187 member States](#) to set labour standards, develop policies and devise programmes promoting decent work for all women and men. With more than 1.2 billion jobs dependent on a stable environment and ecosystems, the ILO's Green Initiative aims to scale up the organization's knowledge, policy response and capacity to manage a just transition toward greener economies and a sustainable future.

### E. [Green Jobs for Sustainable Development Guidebooks and Resources](#)

From the Partnership for Action on Green Economy (PAGE). [Green Jobs for Sustainable Development](#) PAGE brings together five UN agencies – [UN Environment](#), [International Labour Organization](#), [UN Development Programme](#), [UN Industrial Development Organization](#), and [UN Institute for Training and Research](#) – whose mandates, expertises and networks combined can offer integrated and holistic support to countries on inclusive green economy, ensuring coherence and avoiding duplication. The green jobs training guidebook has been produced to guide the building of models and analysis of alternative policy scenarios with modules that include: introduction of green economy and labour market assessments, assessment tools, inventories and surveys as sources of data on employment in the environmental sector and green jobs, building input–output based employment projection models with expanded green industries, and from input-output and supply-and-use to social accounting matrix analysis.

### F. [2021 Sustainable Energy in America Factbook](#) (United States)

From the Business Council for Sustainable Energy

### G. [Clean Energy in the MENA Region: Industry and Workforce Readiness](#)

From the Clean Energy Business Council MENA

### H. **Increasing Organizational Capacity Through Connecting to Higher Education Applied Projects and Research**

Two matchmaking sites (Beta versions)

**For Good:** connecting private and public organizations with students and graduates to solve real world sustainability challenges for organizations through research and projects.

**Projects that Matter:** connecting volunteers, students and faculty to real world sustainability projects.

---

## Resources for Businesses

### A. [Connecting With Potential Employees and Improving College Curricula](#)

From the Sustainability Education and Economic Development Center (US Perspective). This how-to one pager shows businesses how to: connect with your technical or community college to find potential employees, and provide input to make curricula more relevant to your workforce needs.

---

## Resources for Educators

### Green & Sustainable Workforce Development: Higher Education's Role

#### A. **Guidance Doc for Education Institutions - DRAFT JUST RELEASED!**

From the United Nations Environment Program Youth and Education Alliance. [Global Guidance for Education on Green Jobs: Connecting Higher Education and Green Opportunities for Planetary Health](#) - Designed for educators, career advisors and curricular developers, this document has useful information and resources about higher education's role to help provide the workforce we urgently need for the transition to a green and sustainable future, including how to enhance student and employer connection.

#### B. **Renewable Energies [Publications](#), [Data](#) and [Tools](#)**

From International Renewable Energy Agency (IRENA)

Examples of publications: [Global Renewables Outlook 2020](#), [Renewable Energy and Jobs Annual Review](#)

#### C. **Gender Disparities**

From IRENA. [Renewable Energy: A Gender Perspective](#)

From Florence School of Regulation. **Fostering synergies between the European Green Deal**

& the European Gender Strategy on demand [here](#)

#### D. Self-assessment Framework

From Sustainability Education and Economic Development Center. [The community college green genome framework: Integrating sustainability and clean technology workforce development into an institution's DNA.](#) The Sustainability Education and Economic Development Center helps community/technical colleges expand their local green economies by aligning green-focused workforce education programs with other campus and community sustainability initiatives. The appendix has an institutional self-assessment tool.

#### E. Practical Guide for Educational Institutions

From United Nations Educational, Scientific and Cultural Organization. [Greening technical and vocational education and training: A practical guide for institutions](#) to help leaders and practitioners of technical and vocational education and training improve their understanding and implementation of education for sustainable development using a whole-institution approach to greening their institutions.

#### F. Green Skills

From European Centre for the Development of Vocational Training (Cedefop). [Green skills and innovation for inclusive growth.](#) The Cedefop reference series provides evidence and policy analysis to foster an equitable shift to greener economies and more sustainable societies; mainstreaming greening in employment and skills strategies requires strong partnerships between public, private and not-for-profit organisations to maximise innovation and to manage smoothly labour market transitions from brown to green energy and employment as well as national policy frameworks that are more conducive to the desired outcomes.

### **Sustainability In Core Requirements For All Students**

---

#### G. [Environmental literacy and sustainability as core requirements: Success Stories and Models](#)

Rowe, D. (2002). In Teaching Sustainability at Universities: Towards Curriculum Greening. 2002. Walter Leal Filho, Ed. New York. Reviews models and strategies to incorporate sustainability into higher education curricula including sustainability concepts as part of degree requirements, infusion of the sustainability paradigm across the curricula, development of interdepartmental minors, use of sustainability in other sectors of the institution as the latent curricula, and integration into the mission statement; includes an entry level, impactful and easily implemented multi-disciplinary course curricular project.

### **Education for Sustainable Development Pedagogy For Quality Learning**

---

## H. Components of Quality Assignments and Empowering Students

From [Sustainability improves student learning \(SISL\)](#). A select group of STEM academic associations and disciplinary societies worked together to provide resources to increase students' sustainability learning in undergraduate courses and better prepare students for the 21<sup>st</sup> century "Big Questions" related to real-world challenges of energy, air and water quality, and climate change.

- i. SISL. (2016). [Key components of quality sustainability assignments](#). Includes the key components of quality ESD: promoting understanding without doom and gloom, a focus on solutions, and empowering students to become proactive problem solvers; includes information on research showing how applied projects enhance SDG solutions and student learning.
- ii. SISL. (2016). [Empowering students: engaging in solution building for society](#). Fostering student' skills and self-assessment, civic learning and engagement as a strategic educational approach, and building change agent skills.

### I. [Educational Partnerships for Innovation in Communities](#).

From EPIC-N. Brings together the resources within academia — professors, students, laboratories, research libraries, existing curriculum — to creatively tackle the biggest challenges in local communities, with results that are felt immediately with lasting transformative effects.

### J. [Beyond Doom and Gloom: Engaging in Climate Policy Solutions](#)

From the [Higher Education Associations Sustainability Consortium](#) and the [Disciplinary Associations Network for Sustainability](#). An initiative designed by dozens of higher education associations to engage students, faculty, staff, and the community in energy and climate policy for systemic change; includes a fellows program of [Sustainability Policy Partners](#) and [resources for educators](#).

### K. [Creating Civil Discourse for a Sustainable Future](#)

From the US Partnership for Education for Sustainable Development, resources to reduce polarization and create civil discourse.

### L. [A Guide for Applied Sustainability Learning Projects](#)

From the [Association for the Advancement of Sustainability in Higher Education](#). [A Guide for Applied Sustainability Learning Projects: Advancing sustainability outcomes on campus and in the community](#). Beaudoin, F. and Brundiers, K. AASHE. (2017). A step-by-step framework for how a program for applied learning for sustainability can be designed, launched, and scaled around two interconnected goals: 1. Provide students with exceptional learning experiences in sustainability; 2. Contribute to a workable sustainability solution pathway that—when implemented—can lead to positive sustainability outcomes on campus and/or in the community.

## **Sustainability in Career Advising**

---

### M. [Green and Sustainability Jobs: Career Resources](#).

Rowe, D. (2020). Elucidates the key roles of faculty and career offices to provide career advice and describes three approaches to getting a green job: securing an existing green and sustainability job, bringing a green lens to any job, and creating the needed green jobs that do not yet exist. Includes a listing of dozens of websites listing jobs and career resources, and resources for career advising.

### N. **Portal for Energy Related Careers and Learning**

From Workplace Singapore. [MySKILLSFuture](#) is a one-stop portal for career development and lifelong learning, offering 400+ energy-related courses.

### O. [Career Maps for Solar, Wind, BioEnergy, and Climate Control/HVAC](#)

From the [Interstate Renewable Energy Council](#) and the U.S. Department of Energy

*Note: Additional resources from the Educational Discussants panel below*

---

## **Event Speakers, Bios and Resources**

Note: Employers/Associations speaker resources are integrated above. More specific resources from education discussants are below.

### **Employers/Associations Panel**

#### **Presenters' Slides**

### **Moderator: Erik Magnus Fernstrom**

Practice Manager

Energy Practice – MENA Region, The World Bank



Erik Fernstrom is the Practice Manager for the World Bank's Middle East and North Africa Energy department. His background spans more than 20 years in the Energy Industry, starting with engineering and management positions in Asea Brown Boveri (ABB) working on a broad range of projects in Africa, Middle East, South Asia and East Asia. His work in the World Bank

has focused on Sector Reform, Access to Electricity and creating an enabling environment for private sector investments in the power sector.

## **Thomas André**

Director of Operations

REN21 – Renewable Energy Policy Network for the 21st Century



Thomas ANDRÉ is currently Operations Director at REN21. He first joined the team as a Project Manager and Analyst where his main focus was on producing the Renewables Global Status Report, one of REN21's anchor reports published annually since 2005.

Thomas started his career as an electronic hardware engineer and project manager in France. After studying sustainability, he joined Schneider Electric in early 2010 to contribute to the creation and development of the company's energy access inclusive business program. He first covered coordination and then business development positions in parallel of conducting a PhD thesis, questioning the interactions between Base of the Pyramid, CSR and corporate strategies. After defending his PhD in late 2015, Thomas took the lead of the strategy of the Access to Energy program.

Thomas holds an Engineering degree from ESME Sudria, a MSc in Sustainability from HEC Paris, and a PhD in Economics from Ecole Polytechnique.

## **Lisa Jacobson**

President

Business Council for Sustainable Energy



Lisa Jacobson serves as the President of the Business Council for Sustainable Energy (BCSE), a 55 member trade association representing the energy efficiency, renewable energy and



natural gas industries. Ms. Jacobson has advised states and federal policymakers on energy, tax, air quality and climate change issues. She is a member of the Department of Energy's State Energy Efficiency Steering Committee, the United States Trade Representative's Trade and Environment Policy Advisory Committee and Gas Technology Institute's Public Interest Advisory Committee. Ms. Jacobson has testified before Congress and has represented energy industries before the United Nations Framework Convention on Climate Change. Prior to her position with the BCSE, Ms. Jacobson was a legislative aide to the U.S. Congress; received a Master's in International Relations from the London School of Economics and Political Science; and a Bachelors degree in Political Science from the University of Vermont. SOCIAL MEDIA: @LJacobsonEnergy and the BCSE's is @BCSECleanEnergy

## **Ahmed Samir Elbermbali**

Managing Director  
Clean Energy Business Council (CEBC)



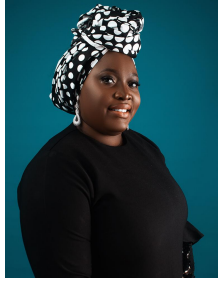
Ahmed Samir Elbermbali is the Managing Director of the MENA Clean Energy Business Council (CEBC), a non-profit organization dedicated to promoting clean energy and clean technologies and solutions in the MENA Region. CEBC provides a platform to further dialogue between the public and private sectors to develop much needed policy and regulation to help drive the implementation of clean energy across the MENA region. Ahmed joined CEBC in 2018 and is the youngest Managing Director to hold this position in the history of CEBC.

He is very active in bringing together the industry stakeholders from across the private and public sectors in the different MENA countries together to accelerate the policy maturity for clean energy in the region.

His research interests are in the intersection between policy, technology and consumer behavior to accelerate the transition to clean energy and sustainable mobility sectors. Ahmed holds MBA in Sustainable Mobility management from the Technical University of Berlin.

## **Olasimbo Sojinrin**

Nigeria Country Director  
Solar Sister



Olasimbo Sojinrin is Country Director at Solar Sister Nigeria where she leads a network of women entrepreneurs distributing clean energy products in underserved communities across Nigeria. She is a strong advocate for renewable energy and women empowerment.

Simbo is President of the Women's Consortium of Nigeria. Simbo has received many awards including Gender mainstreaming in Energy Award Champion by ECOWAS ECREEE, Google Impact Challenge in 2018, Winner of the 2017 Ruhr Summit in Germany, 2016 Woman in Energy awardee by Nigerian Energy Forum and 2015 Emerging Leader at Techwomen USA. She holds a Certificate in Social Entrepreneurship from INSEAD and a Masters in Public and International Affairs from University of Lagos.

Olasimbo started her career early in 1997 by advocating for the rights of young persons and taking a role as youth Director, Women's consortium of Nigeria (WOCON), a National NGO committed to the enforcement of Women and children's Rights and the attainment of equality, development and peace. She was the first elected African youth Representative that served as an advisory committee to the board of ECPAT International. Olasimbo was an Oxfam Action Partner at the International Youth Parliament in 2002. Olasimbo began to focus on Climate change when she joined the British Council in 2004, there she managed several partnership projects including Connecting Classrooms, Dream + Teams and Green Clubs that strived to educate secondary schools students on issues of Climate change.

She thereafter took a role as Capacity Development Manager of a UNDP assisted project called 'Access to Renewable Energy' where she pushed for climate change legislation with policy makers at Federal and State level as well as organised capacity development programs for renewable energy service providers in Nigeria and financial institutions. Olasimbo organised 3 annual high-level renewable energy investment forums to drive funding to the sector.

In 2014, she took up the Country Manager role at Solar Sister, a social enterprise with a mission to eradicate energy poverty through women's economic empowerment. Solar Sister solves the problem of 'last mile' energy access and brings high-quality, affordable clean energy solutions right to the community's doorsteps and also offering women an opportunity to make a sustained living by distributing clean energy products. She also serves as Director of Women's Consortium of Nigeria (WOCON) founded by Bisi Olateru-Olagbegi in 1995.

Olasimbo was a Speaker at Tedx Euston in June 2015 where she shared her story on energy poverty. She represented Nigeria in Silicon Valley in 2015 as an Emerging Leader as part of the Tech Women Initiative of the US government where she worked in Solar City, USA. She won the

“Woman in Energy” award organised by the Nigerian Energy Forum in 2016. She has spoken at many High level National and International forums, including UNCSW annual meetings, the UNCTAD’s Commission on Science and Technology and UNIDO’s Vienna Energy Forum amongst others

She holds an INSEAD Social Entrepreneurship Programme certificate from Fontainebleau, France and a Masters in Public and International Affairs from University of Lagos, Nigeria.

## **Educational Discussants**

### **Moderator: Dr. Debra Rowe**

President

U.S. Partnership for Education for Sustainable Development



Dr. Debra Rowe is President of the [U.S. Partnership for Education for Sustainable Development](#). She convenes and catalyzes leaders across business, education, communities and other sectors to create integrated SDG solutions. Debra works with higher education networks for sustainability globally, supporting curricular change and actions for sustainable development and climate solutions. She also focuses on building an inclusive and green economy. Debra taught Campus and Corporate Sustainability at University of Vermont and has been Professor of green energy, psychology and sustainability for 40 years at Oakland Community College. She co-authored for [UNEP](#) a Global Guidance document about [Education on Green Jobs and Greening the Workforce](#).

Dr. Rowe heads the [Higher Education Associations Sustainability Consortium](#), the [Disciplinary Associations’ Network for Sustainability](#) and is Senior Advisor to the [Association for the Advancement of Sustainability in Higher Education](#). She also co-created the U.S. Department of Education funded [Sustainability Improves Student Learning](#) initiative with STEM academic societies and leads the National Council of Workforce Education’s [Sustainability Education and Economic Development Resources](#). She is the author/editor of numerous publications. She received numerous awards, including an energy education award at MIT from C3E. Degrees: MBA, MA in Psychology, and PhD in Business from the University of Michigan; BA from Yale.

### **Dr. Fawzia Tarannum**

TERI School of Advanced Studies, New Delhi, India



Dr. Fawzia Tarannum is an Assistant Professor in the Coca-Cola Department of Regional Water Studies at the TERI School of Advanced Studies (TERI SAS), New Delhi, India. She is an interdisciplinary water professional with 22 years of experience in project management, teaching, research, and capacity building. She is the recipient of the Fulbright Hubert H. Humphrey Fellowship and has spent a year in Cornell University, to hone her professional skills in water governance. She is also an awardee of the University of Nairobi- IDRC Doctoral Research Grant. Prior to joining TERI SAS, Dr. Fawzia worked as General Manager- Sales at Cleantec Infra Private Limited, a company engaged in providing mechanized solutions for cleaning and dredging of shallow water bodies. She received her PhD in Water Science and Governance from TERI SAS and earned her undergraduate degree in Electrical Engineer from Aligarh Muslim University. Her research interests are Integrated Water Resources Management, Food-water-energy nexus and Gender, equity in water management. Dr. Fawzia received the Climate Reality Leadership Corps Training from the former Vice President, Al Gore. As a Climate Reality Leader, she has conducted awareness and capacity building programs on Water Conservation, Climate Change, Renewable Energy and Gender Equality, among others, for over 3000 students, teachers, and youth groups in India. She also represents TERI SAS at the UNEP's Youth Education Alliance (YEA).

## Resources

TERI School of Advanced Studies (TERI SAS) is a deemed University in India offering interdisciplinary postgraduate and doctoral programs focussed exclusively on renewable energy, natural resources management and sustainability. The University has a well-established research and outreach programs and is a member of ProSPER.Net and the regional advisor to UNEP on Youth Education Alliance. More details related to the University can be accessed at: <https://www.terisas.ac.in/>

A few programs with direct relevance to Sustainable Energy Businesses are:

MTech (Renewable Energy Engineering and Management) - This programme is intended to provide the much-needed human resource capacity in renewable energy technologies and management. Students are taught not only renewable energy technologies and implementation, but also, equally important areas of energy infrastructure, energy economics, energy conservation, and energy environment interface, etc. The program outline can be accessed at: <https://www.terisas.ac.in/mtech-renewable-energy-engineering-and-management.php>

MBA (Sustainability Management) - Businesses across the globe are realizing the importance of integrating sustainability into business practices. Much of the pressure is coming in through various stakeholders, such as the customers, shareholders, and the government. The M.B.A. (Sustainability Management) at the TERI SAS equips students with acumen to take up the emerging green jobs in project management, marketing, finance, and HR. <https://www.terisas.ac.in/mba-business-sustainability.php>

MA (Sustainable Development Practice) - The TERI SAS's master's programme in Sustainable Development Practice (MA SDP) aims to develop an international cadre of development professionals, well-equipped to tackle interwoven challenges of poverty, diseases, climate change and ecosystem vulnerability specific to the region. <https://www.terisas.ac.in/ma-sustainable-development-practice.php>

M.Sc (Economics) - The MSc (Economics) with a specialization in Environment and Resource economics is unique as it not only includes advanced graduate level exposure to microeconomics, macroeconomics, mathematics, development economics, growth economics, statistics, and econometrics, but also provides an in-depth knowledge of the concepts, theories, techniques, policies and other applications in ecological, environmental, and natural resource economics. <https://www.terisas.ac.in/msc-economics.php>

## **Prem Jain**

Professor in Physics and UNESCO Chair in Renewable Energy and Environment  
University of Zambia, Lusaka, Zambia



Prem Jain is Professor in Physics at the University of Zambia where he holds the UNESCO Chair in Renewable Energy and Environment. He has over three decades of experience in solar energy and climate change issues. Prof Jain served as UNDP Chief Technical Advisor to the Namibian Renewable Energy Program (2004-06). He also served as UNDP Technical Coordinator for the Climate Change Facilitation Unit (CCFU) in the Zambian Ministry of Environment (2009-12). In 2018, Prof Jain founded the Solar Energy Centre at the University of Zambia.

### **Resources**

SOLAR ENERGY CENTRE (SEC) OF EXCELLENCE - SEC is devoted to engage in practical demand-driven initiatives. Its objective is to sustain the growth of the solar energy industry by providing support services, viz., (i) Training, (ii) Testing, (iii) demonstration, (iv) Education and Information, (v) Research and Development, and (vi) Consultancy and Advisory. It works with the solar energy industry, government, cooperating partners and private sector.

Prem Jain (2020). *Reforming educational systems with sustainability at their core*. In Humanistic Futures of Learning – Perspectives from UNESCO Chairs and UNITWIN Networks, UNESCO Paris, p.27-30 (2020). <https://unesdoc.unesco.org/ark:/48223/pf0000372577>

In this thought piece, Professor Prem Jain makes the case to reconfigure the traditional education system to break the boundaries between disciplines. He explores the nature of sustainability and advocates for a multidisciplinary approach to solve the global crises endemic to our times, specifically climate change.

## **Ahmed Benlarabi**

Responsible for PV Systems at IRESEN



Mr. Ahmed BENLARABI received an engineering degree in energy systems from Ecole Normale Supérieure des Mines de Rabat (ENSMR). From 2013 to 2019, he works as responsible for PV systems IRESEN. He followed numerous training in the field of characterization of PV modules in the Fraunhofer CSP institute, as well as in the field of certification at KIWA Cermet Laboratories, and also PV plant inspection with PI Berlin. He developed several renewable energy projects in Morocco and abroad and is now leading a project of certification laboratory for PV modules at the Green Energy Park as well as piloting the setup of the Platform Green Energy Park Maroc – Côte d'Ivoire in Yamoussoukro. Mr. Ahmed BENLARABI has an extensive expertise in multi-perspective approach in circular economic projects

## **Jean-Christopher Carteron**

Director of Corporate Social Responsibility, Kedge Business School.



After starting his career in the aeronautics industry, Carteron (50) arrived at the School in 2001 and headed the marketing dept. before devoting himself fully to sustainable development (SD). Director of Corporate Social Responsibility (CSR), Carteron coordinates the School's SD strategy for 12 years. Board Member of different NGOs, Foundations, and Social enterprise, he is a leading actor in working groups mainly focalized on social responsibility for higher education institutions (UN PRME, Globally responsible Leadership Initiative and YEA-UNEP). Since

November 2018, he is also the focal point of the French network of [SDSN](#) (Sustainable Development Solutions Network). Since 2012 he is the Senior Advisor for the “[Higher Education Sustainable Initiative](#)” (the biggest voluntary commitments during the Rio+20). Last but not least, he has launched [Sulitest.org](#), the first online international platform to raise awareness and assess SD knowledge. Its best-known tool, the “Test” has been already taken by almost 200.000 people and is recognized as one of the tools for measuring and monitoring the UN Sustainable Development Goals (SDGs). [jccarteron@kedgebs.com](mailto:jccarteron@kedgebs.com) [www.sulitest.org](http://www.sulitest.org) / [Kedge SD report](#) / [Sulitest report](#)

### **Resources**

The [Sulitest](#) provides a variety of educational tools to help improve sustainability literacy. "Sustainability Literacy" is the knowledge, skills and mindsets that allow individuals to become deeply committed to build a sustainable future and that help them to make informed and effective decisions to this end. See more information about Sulitest in the above paragraph.

### **Dr. Kenneth Walz**

Director, Center for Renewable Energy Advanced Technological Education (CREATE)  
Madison Area Technical College, Wisconsin, USA



Dr. Kenneth Walz has taught science, engineering, and renewable energy at Madison Area Technical College since 2003, where he serves as the Director of the CREATE Energy Center funded by the National Science Foundation. Dr. Walz earned his Ph.D. from the University of Wisconsin while performing research on advanced lithium-ion batteries with Rayovac and Argonne National Laboratory. Dr. Walz is an alumnus of the Academies Creating Teacher Scientists Program at the National Renewable Energy Laboratory, and he also spent time as a visiting scientist with the University of Rochester Center for Photoinduced Charge Transfer. Dr. Walz is an adjunct professor of Civil and Environmental Engineering at the University of Wisconsin, where he has taught graduate courses in Engineering Professional Development and Teaching Methods for Scientists and Engineers. He also serves as an advisory board member for the Wisconsin Center for Environmental Education, the K-12 Energy Education Program, and the Solar Ready Vets Program. Dr. Walz has been recognized as Professor of the Year by the Carnegie Foundation and the Council for Advancement and Support of Education, and as the Energy Educator of the Year by the Wisconsin Association for Environmental Education.

### **Resources**

Center for Renewable Energy Advanced Technological Education (CREATE)

Funded by the National Science Foundation, CREATE provides curriculum, instructional materials, and faculty professional development to help colleges and secondary schools teach renewable energy.

[www.CreateEnergy.org](http://www.CreateEnergy.org)

#### CREATE Solar on Schools Toolkit

This toolkit provides resources, including a template solar roadmap strategic plan, design recommendations, and a model request for solar proposals, to help create a solar installation on campus.

<https://createenergy.org/solar-toolkit-schools/>

#### SEED Center Toolkit for Incorporating Energy Jobs into the Curriculum

National Science Foundation funded Advanced Technology Education Centers and their partners have curricular materials, career pathways information, professional development for faculty and mentoring opportunities to help educators update curricula start or new programs in renewable energies, energy efficiency, HVAC, business, culinary, agriculture, and construction. Here are some key resources.

<https://theseedcenter.org/resources/seed-toolkits/job-growth-curricula-toolkit>

#### The Solar Foundation Workforce Development Toolkit

Includes Training and Hiring Insights, an implementation guide, case studies, and best practices, centered around themes of workforce development and work-based learning.

<https://americansolarworkforce.org/resources/>

#### Solar Ready Vets Program

Veterans of the U.S. Armed Forces are outstanding candidates for careers in the solar industry both at home and overseas. The Solar Ready Vets Network connects transitioning military service members and veterans with solar industry career training and professional development opportunities.

<https://www.thesolarfoundation.org/solar-ready-vets/>

## **Cheryl Desha**

Associate Professor

Griffith University, Australia



Associate Professor Cheryl Desha is Industry Engagement Director for the School of Engineering and Built Environment (Griffith University), and Theme Leader of the Digital Earth



and Resilient Infrastructure research group (Cities Research Institute). Her roles draw on 20 years of industry and academic capacity building for energy efficiency, community and infrastructure resilience. Link to University web page (including publications and research links): <https://experts.griffith.edu.au/7119-cheryl-desha>.

## Resources

Engineering and Accreditation for Sustainable Development

[A review of progress and opportunities to foster development of sustainability-related competencies in engineering education](#)

Desha, C., Rowe, D., Hargreaves, D. (2019). Australasian Journal of Engineering Education. Over the last decade and prompted by the United Nations (UN) 2030 Framework, significant engineering bodies have been calling for education directed towards achieving the UN Sustainable Development Goals (SDGs). In this paper, the authors reflect on progress to enable SDG knowledge and skills in engineering studies, overviewing key examples of efforts within the global professional engineering and education community, including Australia and the United States of America (the US).

The Natural Edge Project

This website hosts freely available content from 7 books and more than 200 hours of lecture notes and resources on sustainable development. It also includes an online textbook "*Energy Transformed*" (under 'books'), which is still relevant as an inspiring repository of sector advances in energy efficiency, pointing to what could be mainstreamed in future. Legacy website (2005 - 2015)

The EEERE Project

Energy Efficiency Education Resources for Engineers: ([Link to website](#)) This project delivered four highly innovative and pedagogically progressive resources for immediate inclusion within engineering undergraduate programs in Australia, and a strategic engagement report including a good practice guide to influence accreditation and curriculum renewal practices. The project was conducted nationally over four stages by a consortium of six universities, between July 2013 and December 2014, involving six 'energy efficiency education' leaders among Australia's 34 universities offering engineering undergraduate programs. The deliverables were funded jointly by the former Department of Resources, Energy and Tourism, the Department of Industry, and Department of Education, to build capacity within a key profession involved in securing energy efficiency improvements in Australian industry. Legacy website (2015)

Energy Efficiency Council ([Link to website](#))

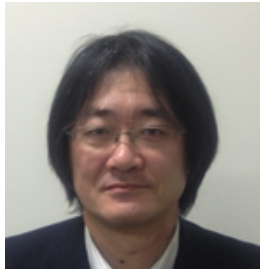
The Energy Efficiency Council is a not-for-profit membership association for businesses, universities, governments and NGOs. Founded in 2009, the Council's members are diverse, but are united by a common cause, to build a sophisticated market for energy management products and services that delivers Healthy, comfortable buildings, productive, competitive businesses, and an affordable, reliable and sustainable energy system for Australia.

The Cities Research Institute "Digital Earth and Resilient Infrastructure" Research Theme ([Link to website](#))

Our researchers are exploring decision-making pathways for complex built environment challenges, to benefit people and planet. Our research targets nature loving and nature inspired solutions for resilient communities and resilient infrastructure. We are committed to place-based approaches that deliver socially supportive and resilient outcomes.

## **Dr. Hideaki Ohgaki**

Professor of Institute of Advanced Energy, Graduate School of Energy Science, Kyoto University, Japan



Dr. Ohgaki started his career from the nuclear engineering field in 1989 and moved to Kyoto University in 2001. <http://www.energy.kyoto-u.ac.jp/en/winter-seminar/>

As a nuclear engineering expert, he was invited to develop the UNESCO COMPETENCE program in 2009 in new and renewable energy education in ASEAN and led a localization program from 2011 to 2014, and expanded his activity to renewable energy implementation, especially in rural ASEAN. <http://www.iae.kyoto-u.ac.jp/quantum/ODA-UNESCO/>. Dr. Ohgaki has been assigned as a coordinator of the Energy Engineering field of AUN/SEED-Net, a project for engineering education, since 2014 and was also appointed as a leader of the Energy and Environment field in JASTIP, promoted by JST, since 2015. [http://jastip.org/en/project/energy\\_environment/](http://jastip.org/en/project/energy_environment/). He also acts as a Co-Chair of Energy of the UNESCO Chair WENDI. <http://wendi.kyoto-u.ac.jp/index.html>

## **Andreas Blom**

Practice Manager

Education Practice – MENA Region, The World Bank



Andreas is a Manager at the World Bank's Education Global Practice, with responsibility for the education support to 19 countries in the Middle East and North Africa. He leads a unit of 30

education specialists and economists who assist the region's governments with policy advice, financing and technical assistance to improve education and human development. He is passionate about poverty reduction and improvements of wellbeing through education.

The unit supervises an investment portfolio of US\$2 billion into the education sector in that region. The work focuses on expansion and quality of Early Childhood Education, mastery of early literacy and numeracy, effective and motivated teachers and principals, teaching of 21<sup>st</sup> century skills combined with learning assessment reforms to measure critical thinking skills, adaption of education technology, and job-ready graduates of vocational and tertiary education.

A Danish national, Andreas joined the Bank in 2003 as Education Economist in the Latin American and Caribbean region, where he contributed to student financing institutions which over time has financed over a million students in Colombia, Mexico and Chile. He has since worked in India, Pakistan, and Afghanistan on better access and employment outcomes for youth attending vocational and higher education. He helped the implementation of reading programs in Madagascar and Uganda. Andreas also advised Southern African countries on job and university readiness of secondary education graduates. Further, he was a team leader of the Africa Centers of Excellence projects that supported over 50 higher education centers in critical areas for Africa's development. Centers that increased enrollment of over 3,000 PhD students and 15,000 master students into more than 30 internationally accredited programs. He authored several global, regional, and national studies on the quality of education, learning effective policies, 21<sup>st</sup> century skills, higher education, and science, technology and innovation. He holds an MA in development economics from the University of Aarhus, Denmark.

## **Opening Remarks: Mari Nishimura**

Education, Youth and Advocacy Unit, Ecosystems Division, United Nations Environment Programme (UNEP)



Ms. Mari Nishimura works at UNEP HQ in Nairobi, Kenya. She leads the work on Behavioural Change on Campus and Green Jobs for Youth. Previously, she worked closely on Sustainable Consumption and Production (SDG 12) in Paris, NY and Panama City. Before joining UNEP, she was in public policy and advisory roles covering the EU regulation on Fluorinated gas and the Montreal Protocol.

## **Closing Remarks: Paul Noumba Um**

Regional Director

Infrastructure MENA Region, The World Bank



Paul Noumba Um, is the Regional Director for Infrastructure for Middle East and North Africa at the World Bank. He was previously the Country Director for South Africa, Namibia, Lesotho, Botswana, Swaziland, Zambia and Zimbabwe, and prior to that, the Country Director for Mali, Niger and Chad. He has also served as the Sector Manager for Finance & Private sector Development for West and Central Africa, as well as in other positions in MENA and WBI. Paul holds a PhD in Economics from Rennes University, Master's Degrees in Engineering and Economics from France, and a BA in Engineering from the National Advanced School of Posts and Telecom, Cameroon. He joined the Bank in 1998, coming from France Telecom (Orange Labs).