



INTRODUCTION TO EED NEWSLETTER

ENVIRONMENTAL ENGINEERING features the Application of ENVIRONMENTAL Technologies to ENGINEERING Systems in order to attain OPTIMAL Performance according to ESTABLISHED Standards. The Newsletter of the Environmental Engineering Division (EED) will attempt to highlight a Variety of Environmental Technology Applications aimed at Enhancing Engineering Systems Performances in accordance with the Latest Standards by presenting Excerpts of and Links to Selected Articles from a Variety of Websites. In this regard, ALL inputs from EED Members, ASME Members and others will be accepted for Review by the Newsletter Editorial Staff.

The EED Newsletter will feature presentations in Five Sections:

1. ENVIRONMENTAL TECHNOLOGIES
2. ENVIRO-TECH APPLICATIONS
3. ENVIRONMENTAL REGULATIONS
4. EDITORIAL BOARD SELECTION
5. EED CHAIR/DIVISION NEWS

It is envisioned that the EED Newsletter will be a Monthly enterprise open to ALL in its production. Let us begin the endeavor.

1. ENVIRONMENTAL TECHNOLOGIES

A decade ago (2007), the Live Science Website presented 10 Environmental Technologies for consideration. In alphabetical order they were:

1. Bioremediation
2. CO₂ Storage
3. Desalination
4. "Electric Paper"
5. H₂ Fuel Cells
6. Ocean Thermal Power
7. Ocean Wave Power
8. Solar Power
9. Thermal De-Polymerization
10. Vertical Farming ("Roof Gardens")

The "Electric Paper" technology is captivating even now in the Age of Kindle. The interplay of Engineering Designs and Economics for Solar Power – Cells vs Collectors – coupled further with Government Incentives and Social Constraints on the use of Solar Power- is a fascinating puzzle worth contemplating from the field of ENVIRONMENTAL ENGINEERING. (Ref. 1)



Concerning this array of Environmental Technologies, the EED Newsletter Editors would welcome your inputs on additional candidates for future consideration.

In that vein, we guide you to an article in the April 2010 Inhabit Website that highlights “6 Examples of Inspiring Groundbreaking Green Technology”. Again, in alphabetical order, the Green Technologies listed in the presentation are:

1. 3-D Building Block Printer
2. Bldg Summer Air = Bldg Winter Heat
3. Piezo-Electric Floor Tiles
4. Piezo-Electric Shoes
5. “Solar Ivy” Panels
6. Solar Window Spray

All of these “Green Techs” are intriguing. Again, the EED Newsletter Editors would welcome your comments on these GREEN Technologies – including your insights into the Economics of the technology. (Ref. 2)

2. ENVIRO-TECH APPLICATIONS

One Modern Operational ET will be highlighted in this first EED Newsletter:

NRG CO2-CAPTURE/UTILIZATION PLANT OPERATIONS (2017)

NRG Energy’s Petra Nova carbon capture plant, the largest in the world, is operational. By the first week of January 2017, the plant had captured 100,000 tons of carbon, and plant operators expect to hit a million tons by early summer. (Ref. 3)

3. ENVIRONMENTAL REGULATIONS

In considering ENVIRONMENTAL REGULATIONS, instead of immediately considering the State of the Existing REGULATORY DOMAIN, your EED Newsletter Editor has chosen to present two recent discoveries that will warrant the Development of future ERs. The two findings are:

- INTRODUCTION OF CLT WOOD PRODUCTS (2017)
- NEW DISCOVERY OF 30B TONS OF CARBON (2017)

A short presentation of each breakthrough is now presented in order to encourage the EED Newsletter audience to consider the Environmental Regulations that should be developed to encourage Sustainability.



3a. CROSS LAMINATED TIMBER (CLT)

Johnson Lumber in Riddle, OR is making a wood product called **Cross-Laminated Timber (CLT)** consisting of 2x4 beams glued together in perpendicular layers. **CLT** panels which are lighter than concrete/steel beams and faster to assemble on-site could **reduce the carbon footprint of urban construction**. In 2017, **CLT** will be used a 12-story building in Portland, OR. It will be the tallest all-wood building in the world constructed in a seismic zone. (Ref. 4)

3b. 30 BILLION TONS OF CARBON

A research team led by Prof Simon Lewis from the University of Leeds in West Yorkshire, England and Dr. I. Suspense from Marien Ngouabi University in Brazzaville, Republic of Congo have found the world's largest tropical peatlands in bogs of the central Congo basin. The Cuvette Centrale swamplands - an area of 145,500 square kilometers – an area larger than England – holds an estimated 30 Billion tons of Carbon!

As the study's co-author Dr. Suspense has stated: "The discovery of the Cuvette Centrale peatlands could have a large impact on the climate and conservation policies of the Congo. **The maintenance and protection of this peatland complex**, alongside protecting our forests, could be central Africa's great contribution to the global climate change problem." (Ref. 5)

4. EDITORIAL BOARD SELECTION

13 GLOBAL INDUSTRY LEADERS JOIN TOGETHER IN PROMOTING HYDROGEN

Davos, Switzerland, Jan. 2017 -- 13 leading companies launched the '**Hydrogen Council**' - a global initiative to foster hydrogen use in the energy transition. Members highlighted investments of \$1.5B/year in the endeavor. (Ref. 6)

BY EED ASSOC ED - DR. J. ZUCHETTO, NATIONAL ACADEMY OF SCIENCES, USA



5. EED CHAIR/DIVISION NEWS

The ASME Environmental Engineering Division (EED) is offering funding opportunities to assist in the development of programs that promote environmental education through its Education Support Program Awards initiative. The deadline to submit a proposal for one of several grants the division plans to award this year is 15 FEB 2017.

Launched in 2016, the Education Support Program Awards program was designed to help promote the importance of environmental engineers, who use the principles of engineering, soil science, biology, and chemistry to make the air, water and land better and safer for humans. The program provides a maximum of \$25,000 per year to students, educators and EED members who propose interesting ways to encourage environmental education opportunities in their institutions and in their communities.

Up to five proposals will be funded each year, with a limit of \$5,000 per award. Last year's winning proposals included entries from Philadelphia University, the University of Akron, and collaborations from the Wind Energy Student Organization and Iowa State University, and Project Lead the Way, Marshalltown High School and Iowa State University.

Each proposal should include a description of the proposed project; brief professional biographies of the principal project participants; a proposed budget requesting no more than \$5,000; and a letter from the proposer's school or business stating that the project has institutional support and that the institution will receive and manage funds provided by ASME.

Program proposals, which should be a maximum of five pages in length, should be e-mailed no later than 15 FEB 2017 to Martin Edelson, Environmental Engineering Division Executive Committee, at edelsonm2@asme.org. For more information on the EED Education Support Program, visit: www.asme.org/engineering-topics/environmental-engineering/eed-program-funds-environmental-education.



FUTURE EED NEWSLETTER EDITIONS

This First Edition of the NEW EED Newsletter reflects the intentions of the Editorial Board to Find and to Present Matters of Interest to the ASME Members of the Environmental Engineering Division. The Materials that appear in the Newsletter are intended to reflect the Latest Developments in Environmental Technology and Environmental Regulations together with their Application within a Global Economy. We look forward to your Comments on the Newsletter. More importantly, we look forward to your contribution of Materials for Future EED Newsletter Editions.

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NEWSLETTER ARTICLE REFERENCES

1. <http://www.livescience.com/11334-top-10-emerging-environmental-technologies.html>
2. <http://inhabitat.com/6-inspiring-examples-of-groundbreaking-green-technology/>
3. <http://fuelfix.com/blog/2017/01/10/nrgs-carbon-capture-plant-fully-operational/>
4. <http://registerguard.com/rg/news/local/35133806-75/cross-laminated-timber-made-by-an-oregon-company-continues-to-create-buzz-over-its-potential.html.csp>
5. <http://inhabitat.com/30-billion-tons-of-stored-carbon-discovered-in-congo-peatland/>
6. (<http://www.theautochannel.com/news/2017/01/17/337089-hydrogen-council-launches-davos.html>)



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