IEEE
NIGERIA SECTION

NAIJA TECH DIGEST

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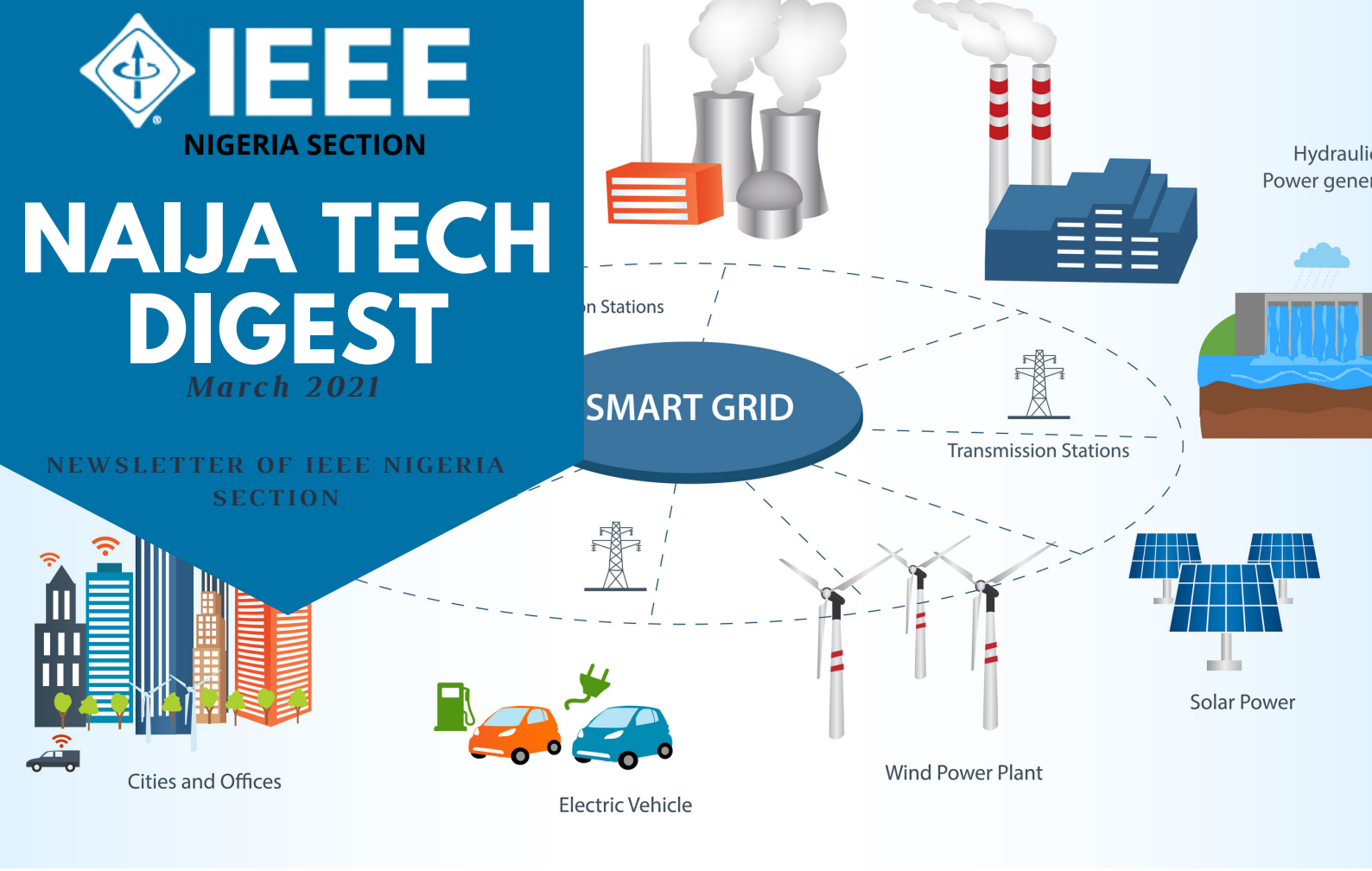
NEWSLETTER OF IEEE NIGERIA SECTION



MESSAGE FROM THE CHAIR

Distinguished Members,

Gradually, the year has rolled in. The Q2 of every year marks enormous strength and activities in all ramifications.

Kindly take time to regularly visit our website at https://r8.ieee.org/nigeria/ to participate, reconnect and e-nnovate the way we advance technology for humanity.

Thank you for your volunteering!

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Chair, IEEE Nigeria Section
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ZERO EMISSIONS WITH SMART GRID

Several countries and cities are presently aspiring towards zero green-house gas emissions from electricity generation. Some lessons can be learned from Ontario, Canada that recently completed a 90% reduction in emissions from its electrical power system [1], the following are the holistic methods employed. These can aid large-scale power planning and policy formulation.

- Eliminating coal fired generation
- Increasing the capacity of nuclear generation
- Increasing the capacity of renewable generation (hydro, wind, solar and bio-energy)
- Using natural gas generation for back up (especially for solar and wind during peak demand periods) and for system reserve.

IN THIS ISSUE

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CLIMATE CHANGE & SMART GRID

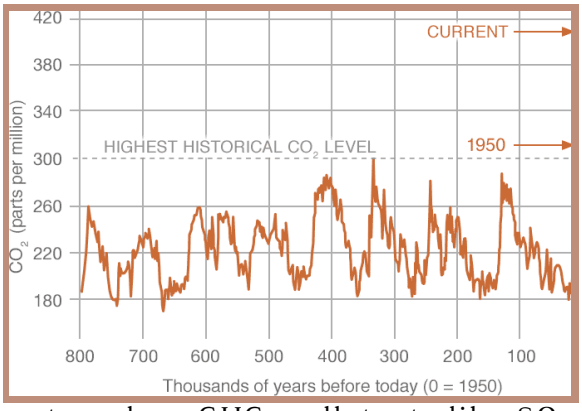
Historic lack of a prudent ecosystem management and rapid increase in the atmospheric concentration of CO2 after first industrial revolution and its acceleration after the second industrial revolution resulted in CO2 surplus far beyond the World biological capacity to absorb and extract. The fig. shows the surge in CO2 concentration especially after the second industrial revolution and within last decade [2].

Current Decarbonization Technologies

Renewable energy technologies, nuclear energy, shifting from coal to gas as an interim step, developing low-cost low-carbon energy storage technologies including the fuel cells, and effective demand management and energy efficiency improvement utilizing smart grid technologies, are measures that have been taken in power sector to restrain the rate of rise of CO2 concentration in the atmosphere.

Future Trends

Fusion power plants seem to be the major source of electricity by the end of this century with the potential to play a significant role in reducing the atmospheric concentration of CO2. Fusion does not produce GHG, pollutants like SOx or NOx, and particulates like soot. Compared to renewable energy resources like wind, solar, or biomass, it would have a very small footprint and would not compete for scarce land or water resources needed for agriculture and human habitation.



References

[1] Paul Acchione, "Getting to Zero With a Little Help From Smart Grid Functionality", IEEE Smart Grid ENewsletter, Jan. 2021.

[2] Mehrdad Boloorchi, *"Climate Change, Decarbonization, and Smart Grid"*, IEEE Smart Grid ENewsletter, Jan. 2021.

AROUND THE SECTION

CyberTalents Security Scholarship

IEEE Nigeria Section is happy to announce a new cybersecurity partnership with Trend Micro for African and Arab students. 500 talents from over 25 countries will receive specialized boot camps online for three months, building the next new generation of Africa and Arab who will lead the cybersecurity future in the region. Please visit the Section website for details.

PES Nigeria - PES DAY 2021

PES Nigeria will be organize a series of webinars and other events starting April 10th, on the theme **"Clean Energy"**. Please participate; details are available from the website/social media handles.

Humanitarian Activities

IEEE Nigeria Section was awarded the **2020 IEEE SIGHT Group of the Year** (as the Overall Best Humanitarian Technology Group in IEEE globally). We appreciate all our hardworking members and executives who worked tirelessly to make humanitarian tech impact all across Nigeria, especially during the COVID-19 pandemic.

Entrepreneurship Bootcamp for Women

The IEEE Region 8 Entrepreneurship Initiative awarded Nigeria Section's Women Entrepreneurship Mentoring Program an award for **best event**. Kudos to Ugomma Ogu and the organizing team.

2021 IEEE MEMBERSHIP RENEWAL NOTICE

We urge you to please renew your memberships to continue enjoying outstanding IEEE membership benefits. Please follow the renewal directions at the section's website.

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