# First Virtual Workshop on AI and Environment Efficiency

9 December 2020, 14:00-16:00 CET

*Key Takeaways and Conclusion*

# Session 1: Keynotes on AI and Emerging Technologies for Environmental Efficiency

## Takeaways and Conclusions

- Use a growth narrative to encourage governments & industry to invest in eco-friendly AI apps.
- Convergence, and AI can both be a problem and a solution to climate change.
- There is a huge number of apps using AI and a surge in green venture capital investments.
- Some of these apps encourage micro actions addressing environmental impacts.
- The choice of a carbon neutral cloud provider to train AI is critical.
- We need to ensure that the environmental costs of AI do not outweigh its benefits. Think around the concept of a “mindful AI.”

## Suggestions to FG-AI4EE

- To join forces to create standards to quantify CO2 emissions.
- To consider life cycle, scalability, optimization, technology, design principles, and enabling environment.
- To consider carbon emission emitted by the cloud; train AI to optimize energy efficiency.
- To consider the including the Code Carbon example and the menu for developers by Mila Quebec in the Focus Group’s deliverables.

## Resources

- Reports mentioned by Mr. Combes, PwC:

  **Microsoft & PwC, 2019: *How AI can enable a Sustainable Future*:** http://bit.ly/AI_env

  A global economic impact analysis of the potential for AI to improve dual economic and environmental outcomes

  **World Economic Forum & PwC, 2020: *Unlocking Technology for the Global Goals:*** http://pwc.to/Tech4Goals

  Two reports looking at how technology can be harnessed to achieve the UN global goals, including a corporate framework for action

  **PwC, 2020: *The State of ClimateTech 2020*:** http://pwc.to/climatetech

  A first-of-its-kind report looking at the global Venture Capital landscape at the emerging frontier of ClimateTech

# Session 2: Assessment and Measurement of the Environmental Efficiency of AI and Emerging Technologies

## Takeaways and Conclusions

- As Environmental Efficiency (EE) assessment of IT system/solution lifecycle, there is the need to adopt a holistic view based on a stepwise model
  - EE must consider power vs utilization time –e.g. edge computing role
  - New chips architectures and SW optimization –e.g in-memory computing
- There is the need to introduce assessment indicators that are easy to measure and give a broad range of coverage
  - Voluntary best practice can play an important role to anticipate standardization –e.g. the European Codes of Conduct on ICT
- EE is already a reality in Data Centers and the related broadband communication system; AI would be essential to advance the level achieved so far and address the new challenges
  - The energy consumption of 5G base stations
  - The human role in a more and more cyber-physical interactive world –e.g. smart cities

## Suggestions to FG-AI4EE

- To logically link the different deliverables in order to start a holistic and stepwise approach
- To outline which SDG are interested by the present deliverable
- To start a TR on innovative chips and related SW platforms

## Conclusion & Way Forward

- Workshop joined by **95** participants from **37** countries.
- Fresh inputs and new perspectives from the Industry, the European Commission and Academia to be included in the Focus Group's deliverables.
- Newcomers to express their interest in joining ITU's work on AI & Environmental Efficiency.
- Please contact ITU Secretariat: tsbfgai4ee@itu.int

Thank you