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Emissions reduction and **beyond**

A CAPGEMINI-TERI CONCEPT NOTE



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FOREWORD

Addressing climate change and its impacts effectively calls for ensuring the achievement of the Sustainable Development Goals for 2030. SDG 17, or the Sustainable Development Goal 17, focuses on "Partnerships for the Goals" and aims to strengthen the means of implementation and revitalize the global partnership for sustainable development. By promoting partnerships and collaboration between organizations with diverse expertise and resources, SDG 17 can play a crucial role in addressing climate change and achieving the other SDGs by fostering innovative and impactful solutions.

By combining the strengths and resources of both The Energy and Resources Institute (TERI) and Capgemini, we can have a greater impact in advancing progress towards a more sustainable future.

Capgemini is a global consulting and technology services company that works with clients to develop and implement their sustainable strategies by harnessing the power of technology. TERI, on the other hand, is a non-profit research organization dedicated to promoting sustainable energy and resource use through conservation and efficiency.

Together, banking on our combined skills and capabilities, we hope to create even greater impact for industries, the government, financial institutions, and civil society.

We look forward to a long and fruitful collaboration!

Regards,



Dr. Vibha Dhawan
Director General
The Energy and Resources Institute



Ashwin Yardi
Chief Executive Officer
Capgemini India

DISCLAIMER

This concept note is an outcome of a joint exercise undertaken by Capgemini and TERI. It does not represent the views of the acknowledged individuals. While every effort has been made to avoid any mistakes or omissions, TERI and Capgemini would not be in any way liable to any persons / organizations by reason of any mistake or omission in the publication.

OUR PERSPECTIVE

Emissions Reduction and Beyond

In 2009, a group of internationally renowned scientists identified nine planetary boundaries that demarcate the remarkably stable state Earth has remained within for 10,000 years¹. These boundaries include greenhouse gas emissions, the ozone layer, forests, freshwater, and biodiversity, among others. In 2015, the scientists concluded society's activities have pushed climate change, biodiversity loss, shifts in nutrient cycles (nitrogen and phosphorus), and land use beyond the boundaries into unprecedented territory². In 2022, in an update on previously unquantified boundaries, scientists concluded that humanity has exceeded planetary boundaries related to freshwater as well as environmental pollutants and other "novel entities" including plastics.

There is international consensus on the urgent need to mitigate climate change through reduction of greenhouse gas emissions and enhancement of carbon sinks such as forests. However, this urgency is not replicated in matters relating to biodiversity loss, freshwater and the oceans, the forests, and use of pollutants such as plastics. Moreover, even international commitments in the one area of attention – GHG emissions – are failing due to countless debates and limited or delayed action. The long inaction with the excuse to develop industry is now due to disrupt these industries in the form of extreme climate events. According to the Intergovernmental Panel for Climate Change, limiting global warming to around 2°C (3.6°F) still requires global greenhouse gas emissions to peak before 2025 at the latest³. The time for preventing unprecedented climate change is long gone, industries and governments must now prepare to build resilience towards it and peak greenhouse gas emissions at the earliest.



¹ <https://www.science.org/doi/10.1126/science.1259855>

² <https://www.stockholmresilience.org/research/planetary-boundaries/the-nine-planetary-boundaries.html>

³ <https://www.ipcc.ch/2022/04/04/ipcc-ar6-wgiii-pressrelease/>

There is limited focus on non-emissions related sustainable development goals

While there is ever-rising focus on curbing GHG emissions, adaptation actions and other SDGs are frequently disregarded. Ocean development, for example, is a part of the United Nations (UN) 17 Sustainable Development Goals (SDG) that are to be achieved by 2030. The SDG 14 (Life under Water) includes 10 targets predominantly designed for the well-being of the oceans and the living resources therein. According to the Asia and the Pacific SDG Progress Report 2021, the overall performance of the goal has regressed in the Asia Pacific region.

Investments have been directed towards ocean economy in the past, but the bulk of investments have been towards building large-scale infrastructure, energy, transport, commercial fisheries, aquaculture, biotechnology, and marine tourism instead of transitioning towards a sustainable ocean economy or blue economy. The estimated cost of implementing SDG 14 targets by 2030 is 174.52 billion US dollars per year, while currently 25.5 billion US dollars is spent annually. This indicates a funding gap of 149.02 billion US dollars per year, according to TERI's paper titled "Emerging Role of Blue Finance in the Asia-Pacific Region." The paper explores this problem in greater detail and recommends actions.

Read more: https://www.teriin.org/sites/default/files/files/Emerging_Role_of_Blue-Finance.pdf

Addressing global developmental challenges have tremendous climate benefits but require new systemic approaches

Another sustainable development goal that needs to receive more focus is food security. Around 811 million people on the planet are undernourished¹ and around 45% of deaths among children under five years of age are linked to undernutrition.⁴ Yet almost 2.5 billion tons of food produce goes uneaten annually.⁵ Amazingly, saving just 50% of the food currently lost or wasted each year could end world hunger.⁶ Not only does working on food waste advance social sustainability, but it also has great consequences for the environment. If food waste were a country, it would be the third largest emitter of greenhouse gases (GHGs) globally (8-10% of global emissions), after the US and China.⁷

Transforming the global food ecosystem would present an opportunity for agricultural producers, distributors, food manufacturers, and retailers. The financial cost of food waste is estimated at \$1 trillion.⁸ Organizations can tap into this negative cash mountain to lower costs, enhance sustainability, and capitalize on new revenue-generating opportunities emerging from the redistribution of surplus food.

Read more: <https://www.capgemini.com/insights/research-library/food-waste/>

⁴ https://www.who.int/health-topics/malnutrition#tab=tab_2

⁵ https://www.panda.org/discover/our_focus/food_practice/food_loss_and_waste/driven_to_waste_global_food_loss_on_farms/

⁶ <https://www.wfpusa.org/articles/8-facts-to-know-about-food-waste-and-hunger/>

⁷ Ibid.

⁸ <https://www.fao.org/3/i3991e/i3991e.pdf>

International agreements to mitigate climate change come with execution pains

Among some pertinent issues under Article 6 of the Paris Agreement, one of the widely debated ones is transitional arrangements from Clean Development Mechanism (CDM) of the Kyoto Protocol to Article 6.4 mechanism (often referred to as the Sustainable Development Mechanism (SDM)) of the Paris Agreement. Developing countries have been pressing for acceptance of transitional arrangements along all its dimensions. However, there is stiff resistance from many developed countries on some of its dimensions, on grounds of anticipated lack of environmental integrity and additionality to ambition.

Along with examining this discourse, the TERI paper titled “Clean Development Mechanism as Catalyst for Sustainable Development Mechanism Under Article 6.4” hopes to bring a new perspective to it – arguing that transitioning from CDM to SDM will act as a catalyst for advancing the new mechanism rather than acting as a hurdle to its success. Some of the key findings and inferences of the paper are: the CDM will be required to fill the inevitable void before SDM is in full force; that CDM will catalyse the growth of SDM and put prices on an upward trajectory rather than depress it; and finally that, by removing the trust deficit the CDM will strengthen the climate ambition and environmental integrity in the long run.

Read more: <https://www.teriin.org/sites/default/files/2019-11/clean-development-mechanism.pdf>

Industries lack awareness on the business case for sustainability and net zero emissions

While organizations across industries have acknowledged the urgency of climate change and have set long-term targets for achieving environmental sustainability, limited action is visible on the ground. Organizations need to build up a series of achievable short-term goals to realize the long-term objective of sustainability. Research from the Capgemini Research Institute reveals that many executives are unclear as to the business case for sustainability and still view it as an unwelcome cost driver, rather than an investment. Around half of respondents believe sustainability is a non-viable option, with the costs involved in pursuing it outweighing the benefits. This research also shows that people and talent challenges limit enterprise-wide collaboration; implementation is still being attempted in silos, without broader oversight and coordination. For example, recruitment and upskilling on sustainability skills are still not a priority for most HR teams, and sustainable design and circularity are not a focus for most product or manufacturing teams.

There are pockets of tangible progress. Some organizations are starting to invest in technologies such as artificial intelligence (AI), automation, and the Internet of Things (IoT) to limit environmental impact; 55% are aware of the size of their carbon footprint and are working to reduce it. The adoption of digital technologies at scale can accelerate the transformation toward sustainability. But to become a sustainable business requires an enterprise-level transformation and a redesign of operating models and business processes. Additionally, data is essential to ensure that organizations are aligned with rapidly evolving regulations around climate disclosure. Data also provides organizations with the means to accelerate their journey to net zero by catalyzing organization-wide action on emissions reduction.

Read more: ‘A world in balance’ (<https://www.capgemini.com/insights/research-library/sustainability-trends/>); ‘Data for Net Zero’ (<https://www.capgemini.com/insights/research-library/data-for-net-zero/>)

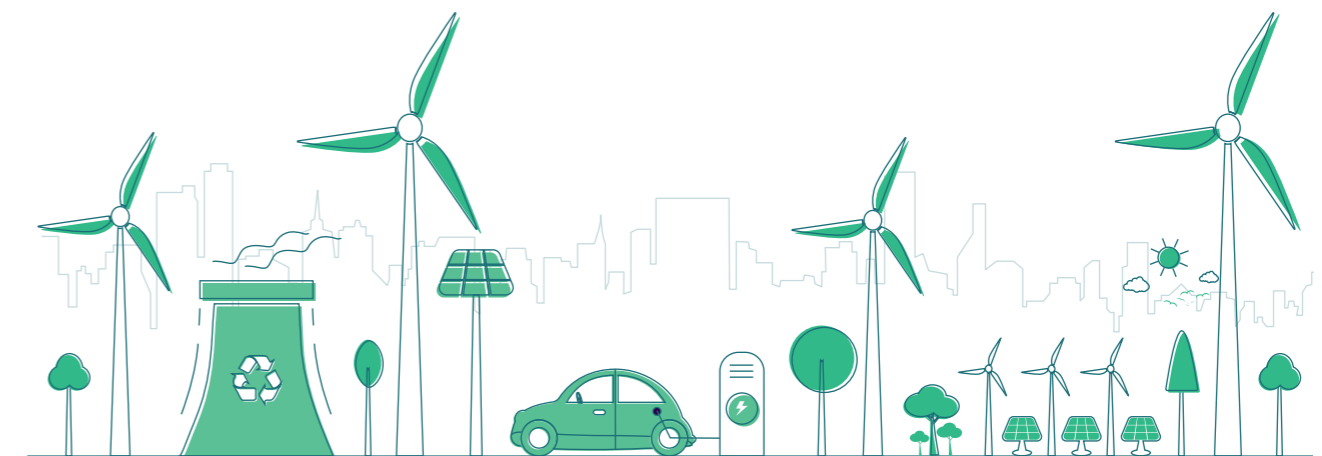
Industries need to prepare themselves to counter climate change

The Paris Agreement on climate change requires countries to better document their mitigation, adaptation challenges and efforts as well as progressively revise their nationally determined contributions (NDCs) towards achieving the global goal of limiting mean temperature rise to well below 2°C. India’s NDC sets an economy-wide target of reducing emission intensity of GDP by 33% to 35% from 2005 levels by 2030 and places special emphasis on two sectors by outlining the goals of achieving installed non-fossil fuel based power generation capacity amounting up to 40% and achieving additional 2.5–3 billion tonnes of carbon dioxide equivalent through additional forest and tree cover by 2030.

Increasingly reduced reliance on fossil fuels, including oil and gas, is the essence of India’s NDC. In the Indian context, the oil and gas sector, however, epitomizes the development vs. climate change debate, since the sector is critical for India’s energy security as well as its growth trajectory. On the other hand, climate change poses three types of challenges to the oil and gas sector. First, and the obvious, challenge is the threat to the future of industry itself due to the need for mitigating greenhouse gas emissions. Second challenge arises out of the extreme weather events that pose a risk to the infrastructure and operations of the sector. Third challenge relates to the need for companies (and industries) to increasingly become transparent in their accounting and reporting of greenhouse gas emissions.

TERI’s issue brief “Preparing India’s Oil and Gas sector for Changing Climate” discusses these three challenges for India’s oil and gas sector, and charts a course to navigate them.

Read more: <https://www.teriin.org/sites/default/files/2020-03/oil-and-gas.pdf>




CAPGEMINI OFFERINGS

WE SUPPORT ORGANIZATIONS THROUGHOUT THEIR NET ZERO JOURNEY, FROM COMMITMENTS TO SUSTAINABLE ACHIEVEMENTS

WE DEVELOPED SEVERAL OFFERINGS AND SERVICES RELYING ON THE FIVE SUSTAINABILITY DOMAINS BELOW

COMMIT



Net zero strategy & new business models


To get from climate pledge to tangible strategies – helping you achieve a 45% cut in CO2 emissions by 2030 and become net zero by 2050

#vision #roadmap #governance
#renewablesourcing #carbonprinting #offsetting

To truly shift businesses towards a regenerative future – looking at both current and future possibilities, to have a 360-degree approach in building the future

#sustainableexperience #ventures #brand #team

ACT



Sustainable products & services

To incorporate sustainability into the product and services development process, ensuring innovative opportunities are explored

#ecodesign #lowcarbon #customerexperience

Sustainable operations & supply chain

To enhance your brand's sustainability purpose by tackling end-to-end supply chain & operations ambitions, including circular economy


#procurement #greenlean #transparency #lifecyclemanagement #circulareconomy

Sustainable IT

To assess and reduce the footprint of IT capabilities to limit its growing share in the total global CO2 emissions: 4% today

#strategy #greenIT #rationalization #awareness #ITforgreen

MONITOR & REPORT



Data for net zero

To help you seamlessly collect and make the best of data to secure your net zero transformation

#strategy #datahub #ESG #datapformance

We are committed to help our clients save **10 million tCO2e** by 2030


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WE HAVE DEVELOPED 30+ ASSETS WITHIN EACH SUSTAINABILITY OFFERING DOMAIN TO ACCELERATE YOUR NET ZERO JOURNEY

SOME ASSETS DEVELOPED WITHIN OUR TEAMS OR IN COLLABORATION WITH PARTNERS

COMMIT

Net zero strategy & new business models



Climate Action Certification

SME Sustainability Rater


CO2 action tool for E&U companies

Corporate footprint & net zero strategy tool

CPPA in a box

Sustainability for growth approach

ACT



Sustainable products & services

Electrification services

Design for E.A.R.T.H.

iLCA

Sustainable operations & supply chain

Green Lean Digital Factory

Eco²-Operations

Next-Gen ESP

Green Core with SAP

Sustainable IT

Maturity diagnosis

Green Cloud Calculator

C.I.E.L.

footprInT

eAPM


CARBONAI

SusAI

Greensight

MONITOR & REPORT

Data for net zero



Microsoft Cloud For Sustainability

Sustainability data Cloud by 890

Carbon data ingestion by IDEA

Digital Climate Platform

Smart energy management

Climate Engine

LCA Automation

GSI

ESG performance

ESG reporting

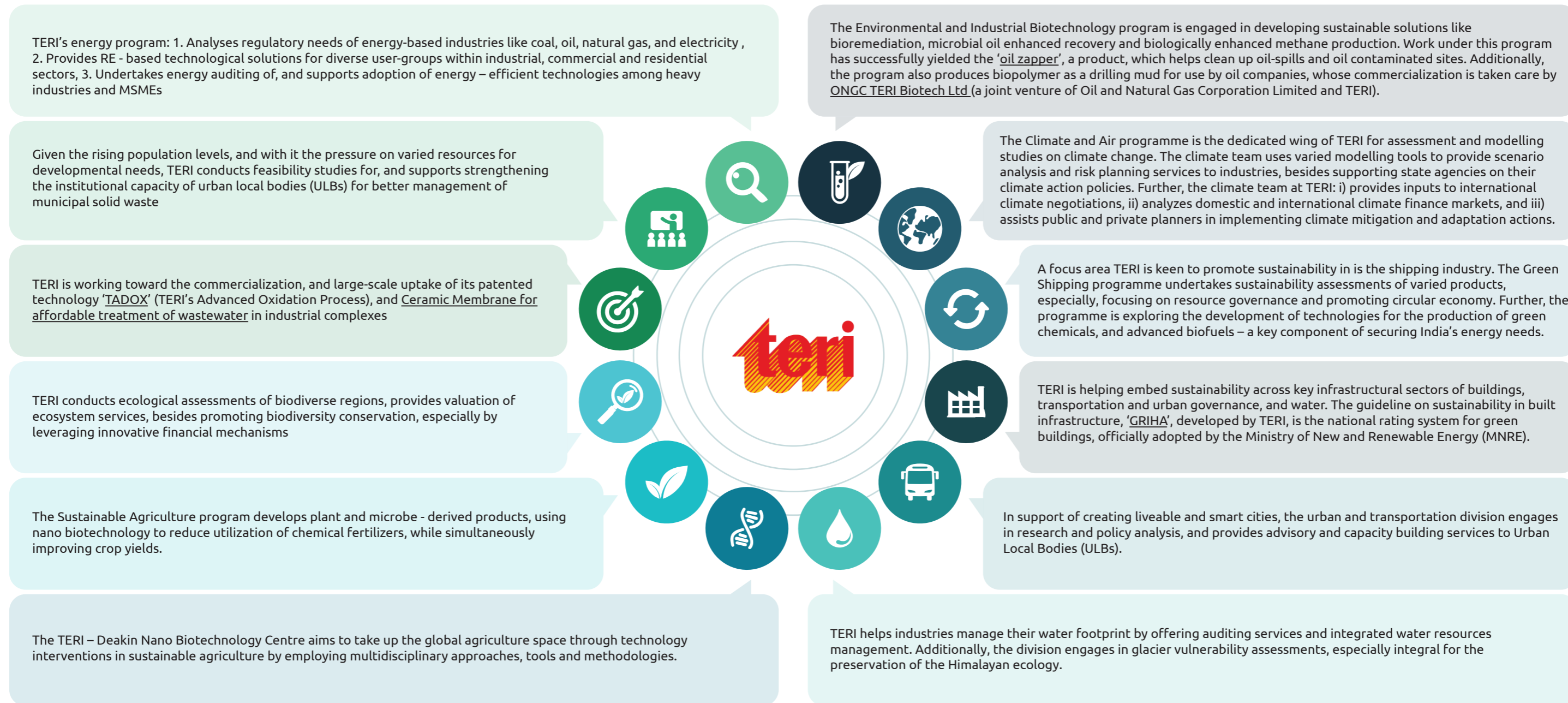
Sustainability cloud

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TERI'S DOMAIN EXPERTISE

Established with the objective of promoting sustainable development, TERI, in alignment with, and for the implementation of this mission, has developed several products, and provides services to public and private stakeholders. These offerings range from carrying out on-field assessments and audits, to enhancing institutional capacity of implementing agencies, to providing policy analysis.

Some of the programs and projects TERI is working on are provided below:



CONCLUSION

The current geological age, aptly termed as 'Anthropocene' is shaped by significant human impact on our planet's ecosystems and geology, and hence the phrase 'climate change' is preceded by the term 'anthropogenic' by scientists, as there is no doubt that human activity, characterized by rampant environmental degradation through industrialization, urbanization, consumerism, among others, is the main cause behind what has accelerated climate change.

While greenhouse gas emissions spurring from industrial activity and so on are significant factors behind the ever-increasing global rise in temperature, efforts towards climate action should also go beyond emission-reduction, and work on the preservation of other critical elements of the ecosystem, for e.g., ocean sustainability, due to the interconnectedness of planetary thresholds, requiring holistic, collaborative measures to be taken to safeguard our planet's delicate resilience. While this does mean significantly higher investments to close the climate financing or sustainable development financing gap, some systemic shifts are required in the way sustainability is approached, one example being an overhaul of our global food systems to prevent food waste and food loss, which will not only lead to benefits on the emission-reduction and hunger alleviation front, but also accrue massive monetary benefits which can be invested in other sustainable development efforts. International agreements on sustainability and climate action also need to be executed effectively for their benevolent intent to come to fruition.

Industries can play a major role in helping realize our collective goals towards a sustainable future if sustainability is thoroughly ingrained in their ethos and operations- however the clear opportunity which sustainability-integration provides for industries beyond just risk-mitigation and regulatory compliance, needs to be understood and leveraged, for greater adoption across the spectrum. While decarbonization, circularity and other sustainability initiatives will bring about positive results, industries like the oil & gas sector, though critical for India's energy security & growth, also clearly need to adapt to new realities of climate change threats on their operations, resource-depletion, national targets to phase out fossil fuels and increasing regulatory and investment shifts to promote industrial sustainability.

Industry alliances, like the one of Capgemini and TERI, are critical for leveraging their joint capabilities, knowledge, expertise, solutions, and offerings, to help bring about this shift not just within industry, but across all stakeholders, in the truest spirit of SDG 17 on Partnership for the Goals. Therefore, with impending global challenges, working in silos will be counter-productive, as a sustainable future where the planet and its people are safeguarded requires collaboration and cooperation to the extent possible. It is only collectively, when we can hope to make a difference, for emissions reduction, and beyond.

CONTACT DETAILS



Nitin Gupta
Vice President,
Sustainability Advisory
Capgemini Invent India
Email: nitin.a.gupta@capgemini.com



Arupendra Nath Mullick
Vice-President
TERI Council for Business Sustainability
The Energy and Resources Institute (TERI)
Email: amullick@teri.res.in

ANNEXURE

More information on select TERI solutions can be found by scanning the following QR codes -

Oil Zapper



TADOX



Ceramic Membrane for Treating Industrial Wastewater



Find Capgemini's reports and POVs on scanning the QR codes below:

A world in balance: Why sustainability ambition is not translating to action



RACES: Resource Awareness and Circular Economy Strategy



Rethink: Why sustainable product design is the need of the hour



Data for Net Zero





About Capgemini

Capgemini is a global leader in partnering with companies to transform and manage their business by harnessing the power of technology. The Group is guided everyday by its purpose of unleashing human energy through technology for an inclusive and sustainable future. It is a responsible and diverse organization of over 350,000 team members in more than 50 countries. With its strong 55-year heritage and deep industry expertise, Capgemini is trusted by its clients to address the entire breadth of their business needs, from strategy and design to operations, fueled by the fast evolving and innovative world of cloud, data, AI, connectivity, software, digital engineering and platforms. The Group reported in 2021 global revenues of €18 billion.

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About TERI

The Energy and Resources Institute (TERI) has almost 50 years of experience in climate change research and policy practice across various geographies of the developing world, particularly in Asia. Research activities at TERI have focused on understanding, analyzing and promoting awareness related to local and global environmental issues with a multi sector overview. TERI works in close collaboration with various stakeholders including national and international governments, bilateral and multilateral agencies, civil society, and sector experts. The institute provides both technological as well as policy advice, bringing together not only learning from different regions and user groups with varied socio-economic and cultural backgrounds, but also state of the art methods and technological rigor to enable more effective national and global policy decisions.

To know more visit

<https://www.teriin.org/>