

Sustainability Engineering Trends Q1 2023

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Sustainability is a megatrend and all enterprises are striving to increase their sustainability efforts. Engineering service providers can help to improve the sustainability of enterprises.

This is our quarterly sustainability engineering trends tracker based on our sustainability engineering framework defined in our earlier [PoV](#).

Sustainability services can be classified into five categories: energy, material, pollution, water, and food or forest. These categories are further divided based on changes in usage mix, reduction in wastage, or increase in efficiency. The five categories are applicable across three segments: products, process, and place.

There are many examples of sustainability services and initiatives we found in Q1, 2023 across these five categories and three segments, as summarized in Exhibit 1. Details are discussed in sections to follow.

Exhibit 1: Summary Sustainability Engineering Engagements Q1, 2023 (Enterprises & Service Providers)

		Product	Process	Place
 Energy	Savings		Schaeffler	Accenture – Flutura, AFRY - Rostock
	Mix	Hanwha Aerospace - Expleo		
 Material	Savings		APK AG, AFRY	TreeToTextile
	Mix			
 Pollution	Reduction	Johnson Controls		Capgemini - Eneco
 Water	Savings		Ricardo	
	Mix			UMC
 Food/Forest	Wastage			
	Mix			
Overall				

Source: EIIRTrend, Media Reports



Energy

Energy, especially that produced from fossil fuels, is a major concern for sustainability. There are two ways in which energy can be leveraged for sustainability: by changing the energy mix and by generating savings in energy usage.

- **Energy Mix:** Many enterprises are reducing the use of fossil fuels by changing the mix of their energy usage. Some examples in Q1, 2023.
 - Stirling Dynamics, part of Expleo, has announced a partnership with Hanwha Aerospace, to work on a core component for Vertical Aerospace's VX4 an electric air taxi with a 100-mile range, the first commercial aircraft to achieve a zero-carbon footprint.

- **Energy Savings:** The efficiency of energy usage can be increased by reducing energy wastage and losses across products, processes, and places. Some examples in Q1, 2023.
 - Accenture to acquire industrial artificial intelligence company Flutura, headquartered in Bangalore, India. Flutura will strengthen Accenture's industrial AI services to increase the performance of plants, refineries, and supply chains while also enabling clients to accomplish their net zero goals faster.
 - AFRY is awarded a new contract for the modernization of Rostock's water infrastructure. An energy-efficient design of the pumping station is main focuses, as energy costs account for about 70% of the total life cycle costs of the pump.
 - Schaeffler announced the acquisition of ECO-Adapt SAS which offer condition monitoring solutions based on electrical signal analysis and systems for the optimization of energy consumption.



Materials

Materials are made from a combination of different metals and elements. Most metals are non-replenishable resources and their proper and environment-friendly use and reuse is essential. There are two ways materials can be leveraged for sustainability: by changing the materials we use and by savings in material usage.

- **Material Mix:** Swapping the materials we use with more environment-friendly options across products, processes, and places. Some examples in Q1, 2023
 - APK AG has awarded AFRY with the engineering services assignment for the project development phases of its first industrial-scale plastics recycling plant in Germany.
 - AFRY project partner in TreeToTextile sustainable textile fiber demo plant in Sweden



Pollution

Pollution is one of the major concerns for sustainability, and it is imperative to reduce pollution. Many enterprises aspire to be net-zero emissions enterprises. Some examples in Q1, 2023

- Johnson Controls announces Johnson Controls OpenBlue Net Zero Advisor, which uses digitally automated data collection and analytics to manage and track scope 1 and 2 emissions and assist building owners in reporting for certification and compliance frameworks. The Net Zero Advisor is available as a subscription service.
- Capgemini will help Eneco to reduce CO2 emissions by one megaton through joint initiatives across scopes 1, 2 and 3 by 2030. This is part of a broader 10-year agreement between Capgemini and Eneco to accelerate Eneco's transition towards sustainable energy, and help meet its ambition of becoming carbon-neutral by 2035. Capgemini will support Eneco through curtailing its IT footprint, more energy efficient offices and buildings, B2B decarbonization services, A Virtual Power Plant and Digital Twins among other initiatives.



Water

Water is one of our fundamental needs. We require it directly and as an input for many processes and maintenance of places. Its efficient use is essential for sustainability. There are two ways water can be leveraged for sustainability: by changing the water mix and by savings in water usage.

- **Water Mix:** Many enterprises are changing their water mix by treating and reusing water, which was not possible earlier either due to technology, cost, or convenience. Some examples in Q1, 2023.
 - UMC held a groundbreaking ceremony for its Circular Economy & Recycling Innovation Center, which will be established at its Fab 12A in Tainan, Taiwan. The US\$58.8 million facility will be the first waste recycling R&D center in the Southern Taiwan Science Park. It is expected to reduce 15,000 metric tons of semiconductor manufacturing waste annually.
- **Water Savings:** The efficiency of water usage can be increased by reducing water wastage. Some examples in Q1, 2023
 - Ricardo acquires Aither Pty, a leading Australian consultancy in water and natural resources.

Bottom line: Sustainability is slowing down from its earlier pace.

In Q1 2023, we see

- Sustainability programs and announcements are declining compared to earlier quarters
- Service provider deals are up.

We will keep you updated on sustainability trends in future quarters. Keep watching this space.

About the Author



Pareekh Jain

Pareekh Jain is CEO and Lead Analyst of EIIRTrend and Pareekh Consulting.

EIIRTrend is an information platform for discovering engineering, IoT, Industry 4.0 and R&D (EIIR) trends, information, insights, best practices, across 12 industry segments, 24 service segments, 75+ countries and 2500+ providers and buyers. Pareekh Consulting is a focused analyst and advisory firm for EIIR.

A seasoned EIIR professional, Pareekh has seen the EIIR industry from four perspectives: service provider, sourcing advisor, enterprise buyer, and industry analyst.

He is regularly quoted in media on EIIR trends. He has provided more than 500 media quotes to various global and India media outlets. Some of the media publications he is quoted in include Harvard Business Review (HBR), NDTV, ZEE TV, Forbes, Times of India, Economic Times, Business Standard, Hindu, Business Line, Livemint, Indian Express, Financial Express, Deccan Herald, Business Today, Telegraph, Hans India, Bizzbuzz, Informist, Voice and Data, Rediff, Voice of America, Moneycontrol, Quartz, Trak, NHA Asia, NZZ, The Ken, Techcircle, Nearshore Americas, Siasat Daily, Firstpost, and Business Insider.

Pareekh is a thought leader, having authored more than 200 publications on topics related to EIIR outsourcing. He loves business fiction writing in his free time, and has authored a novel, Who Is That Lady?

Pareekh received his MBA from the Indian Institute of Management (IIM), Bangalore and his Bachelor of Technology degree from the Indian Institute of Technology (IIT) Delhi.

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