

THE IMPORTANCE OF THE PUBLIC-PRIVATE COLLABORATION IN THIS IN THE SUSTAINABILITY AND EFFICIENCY OF ENERGY AND WATER

1. Sustainable energy efficiency

Public-private collaboration and the accelerating role of the private sector in the clean energy transition journey. It should be highlighted the importance of integrating these technologies in an affordable and profitable way, and generating a market that accepts and consumes them at a price that is affordable for the majority of citizens in every countries.

Most of the global reductions in CO₂ emissions between now and 2030 in the net zero pathway come from technologies readily available today.

According to the International Energy Agency, in 2050, almost half the reductions should come from technologies that are currently only at the demonstration or prototype phase.

This demands that governments quickly increase and reprioritise their spending on research and development – as well as on demonstrating and deploying clean energy technologies – putting them at the core of energy and climate policy. **Progress in the areas of advanced batteries, electrolyzers for hydrogen, and direct air capture and storage can be particularly impactful.**

A transition of such scale and speed cannot be achieved without sustained support and participation from companies on the one hand, **and citizens**, on the other, whose lives will be affected in multiple ways.

“The clean energy transition is for and about people,” said Dr Birol. “Our Roadmap shows that the enormous challenge of rapidly transitioning to a net zero energy system is also a huge opportunity for our economies. The transition must be fair and inclusive, leaving nobody behind.”

International Cooperation and Public - Private Partnership would be essential to respond Green energy transition and challenges:

New energy security challenges – oil and gas energy supply is stable, while renewable energies are unstable. Growing energy security challenges that result from the increasing importance of electricity include the variability of supply from some renewables that should complement each other.

In the way to net zero by 2050, the role of oil and gas diminishes and this fact will have an impact for countries and companies, and supplies become increasingly concentrated in a small number of producers. OPEC's share of a much-reduced global oil supply grows from around 37% in recent years to 52% in 2050, a level higher than at any point in the history of oil markets.

In addition, **the rising dependence on critical minerals required for key clean energy technologies and infrastructure (electricity grids) bring risks of price volatility and supply disruptions** that could hinder the transition.

The **metals** for which **renewable energy** is a significant share of end-use are **cobalt, lithium, rare earths and tellurium**. Lithium-ion batteries for EVs and storage could be responsible for more than 50% of demand for cobalt in 2030. **These metals are finite**, and if they do not enter into a sustainable circular model, in order to reuse them, humankind will run out of them.

Cybersecurity risks: most of the renewable electric centres will work on digitalisation and Artificial Intelligence.

The green hydrogen “chicken and egg dilemma”- there is not enough demand in the shipping sector and other sector to use it as green fuel; how could the green hydrogen be transported massively? Could be the gas infrastructure useful?

From 2020-2030 public investments should foster high energy efficiency; eliminate fossil fuels, create needed infrastructure; cybersecurity.

2. Sustainable water efficiency

According to **World Water Development Report (UNESCO)**: 80% of wastewater flows back into the ecosystem without being treated or reused, and about 1.7 billion people live in areas where groundwater resources and/or groundwater-dependent ecosystems are under threat, the water sector faces a strategic inflection point.

Indeed, the complex water-management problems we face demand that we reach out **beyond narrow approaches to instead build wide public-private institutional bridges across sectors, and raising** awareness and urgency in the political arena.

Furthermore, we need to combine leading-edge scientific breakthroughs, technological developments and creative mind-sets from the laboratory with the best water management practices in the field.

Rather than fear disruptive technologies and thinking, the water sector should adopt them earlier, and at a much faster rate, in order to test, prove and deliver the benefits they can bring.

The Sustainable Development Goals (SDG's) in general and SDG6 in particular, provide unprecedented political will to address water issues in low-, middle- and high-income countries alike. In developing countries, population growth and rapid urbanisation have intensified demand for water and sanitation services beyond all past thresholds. Meanwhile high-income countries can improve governance, awareness, and anticipation of water challenges.